David B. Lobell

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Academic History

Degrees

2005 **Ph.D.**, Stanford University, Department of Geological and Environmental Sciences
Dissertation: "A remote sensing approach to understand controls on cropland productivity"

2000 **Sc.B.**, Brown University, Department of Applied Mathematics, *Magna Cum Laude*

Post-doctoral Training

2005–2008 Lawrence Fellow, Lawrence Livermore National Laboratory

Employment History

2017–Present **Professor**, Earth System Science Department (ESS), Stanford University
— Gloria and Richard Kushel Director, Center on Food Security and the Environment (FSE), as of Sep 2018
— William Wrigley Senior Fellow, Woods Institute for the Environment
— Senior Fellow, Freeman Spogli Institute for International Studies (FSI) and Stanford Institute for Economic Policy and Research (SIEPR)

2013–2017 Associate Professor (ESS) and Senior Fellow (Woods/FSI), Stanford

2009–2013 Assistant Professor (ESS) and Center Fellow (Woods/FSI), Stanford

2008–2009 Senior Research Scholar, FSE, Stanford

2005–2007 Lawrence Postdoctoral Fellow, Lawrence Livermore National Laboratory

Public and Professional Service

Distinguished Fellow, Food Security Leadership Council, 2025-present

Advisor, Global Commission on Adaptation. 2018-2022

Lead Author, Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, Chapter 7 of the Working Group II, "Food Production Systems and Food Security", 2010-2014. Also member of core writing team for "Summary for Policy Makers" and contributing author for Ch. 18 on "Detection and Attribution of Observed Impacts"

Member of National Academy of Sciences Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations (August 2009-May 2010) and Assessing the Impact of Climate Change on Political and Social Stresses (Sep 2011-Sep 2012)

Member of Technical Advisory and Review Panel for World Bank Group activities related to climate change adaptation, 2012

Editor, Global Change Biology, 2011-2018

Editorial Advisory Board Member, Global Food Security, 2012-2019

Editorial Board Member, Environmental Research Letters, 2009-2013

Associate Editor, Journal of Environmental Quality, 2008 – 2010

Co-organized and Led Meeting of 20 International Scientists on "Adapting Agriculture to Climate Change: The Role of Crop Wild Relatives" in Bellagio, Italy in September, 2010

Organized and Led Meeting of 17 International Scientists on "Climate extremes and crop adaptation" at Stanford in June, 2009

Edited special issue of J Environmental Quality on "Remote Sensing of Soil Degradation"

National Academy of Sciences Panel on Climate, Energy, and Security (May-June 2008)

National Academy of Sciences Workshop on Remote Sensing for Human Welfare (January 2006)

NASA Land Cover Land Use Change Grant Review Panel, September 2005

Frequent reviewer for over 25 scientific journals, including Science, Nature and PNAS. Occasional editor at PNAS (on request of board member).

Numerous invited talks at corporations and business conferences on climate change adaptation

Numerous public lectures throughout the Bay Area on climate change and food

Honors and Awards

T.W. Schulze Memorial Award, Agricultural & Applied Economics Association, 2025

Elected Member, National Academy of Sciences, 2023

National Academy of Sciences Food and Agriculture Prize, 2022

Honorary Doctorate, Brown University, 2021

Macarthur Fellow, 2014-2018

Sir Frederick McMaster Fellowship, CSIRO, Australia, 2014

Terman Fellow, Stanford University, 2011-2014

Google Science Communication Fellow, 2011

James B. Macelwane Medal, American Geophysical Union, 2010

Fellow, American Geophysical Union, 2010

NASA New Investigator Program Award, 2008-2010

Lawrence Fellowship, Lawrence Livermore National Laboratory, 2005-2008

Selected Talks (past 3 years)

October 2025	UC Santa Barbara Occasional Workshop in Environmental and Resource Economics, "Agricultural adaptation to climate change: building multiple lines of evidence" (keynote)
July 2025	Living Planet Symposium (Vienna, Austria), "Using satellites to monitor and measure the impacts of agricultural adaptations around the world"
January 2025	T.W. Schultz Memorial Lecture & Award, Agricultural & Applied Economics Association (AAEA), "The rational farmer in a changing climate" (keynote)
November 2024	National Academy of Sciences Blavatnik Forum (Washington D.C.), "Climate adaptation in croplands: Lessons from the past 50 years" (keynote)
September 2024	University of British Columbia, "Evaluating climate adaptation progress and needs in agriculture"
April 2024	National Academy of Sciences Symposium (Washington D.C.), "Innovation, climate, and the agricultural productivity challenge"
April 2024	Corteva Agrisciences Seminar, "Climate smart agriculture in the United States"
March 2024	Sunway University (Malaysia) "Navigating to a climate-smart food system"
October 2023	United States Department of Agriculture Research and Development Division, "What works in climate smart agriculture?"
May 2023	Federal Reserve Bank of Kansas City, 2023 Agricultural Symposium: The Changing Geography of Agricultural Production "Ongoing climate change and adaptation in U.S. agriculture"
April 2023	Carnegie Institution of Washington. "Climate smart agriculture: separating the wheat from the chaff"
March 2023	University of Illinois Center for Digital Agriculture "Using satellites to advance climate-smart agriculture" (keynote)

Publications

Peer-Reviewed Publications

** indicates first author was a student or post-doc*

2026

*Zhuo, Z., Wu T., Lee R., Newhouse D., Kilic T., Burke M., Ermon S., Lobell D.B., 2026. Dynamic, High-Resolution Poverty Measurement in Data-Scarce Environments. Journal of Development Economics 179 https://doi.org/10.1016/j.jdeveco.2025.103691.

*Li, H.H., Irgau, M., Janmohamed, N., Rieckmann, K.S. and Lobell, D.B., 2026. Scalable Vision-Guided Crop Yield Estimation. AAAI 2026 Conference. arXiv preprint arXiv:2511.12999.

2025

*Ma, Y. and Lobell, D.B., 2025. Future bloomers: local crop yield gaps can predict future yield gains. (under 2nd round review with Nature Food)

*Ma, Y. et al., 2025. Harvesting Alpha Earth: Benchmarking Geospatial Foundation Models for Agroecosystems. (under review with Elsevier)

*Ma, Y. et al., 2025. STaPL: Scale Transfer with Pseudo-Labelling for Satellite-based Mapping of Agricultural Practices. (under review with Remote Sensing of Environment)

*Wong C., Mauter M, and Lobell D.B. 2025. Measuring Impacts of California Agri-Environmental Programs using Field-Scale Satellite Data. Environmental Research Letters, https://doi.org/10.1088/1748-9326/ae2ca6

*Kluger, D.M., Di Tommaso, S. and Lobell, D.B., 2025. Precrop payoffs: causal machine learning reveals large but variable yield benefits of crop rotation in major breadbaskets. Environmental Research Letters, 20(11), p.114037. https://doi.org/10.1088/1748-9326/ae0f45

Rufin, P., Meyfroidt, P., Akinyemi, F.O., Estes, L., Ibrahim, E.S., Jain, M., Kerner, H., Lisboa, S.N., Lobell, D., Nakalembe, C. and Persello, C., 2025. To enhance sustainable development goal research, open up commercial satellite image archives. Proceedings of the National Academy of Sciences, 122(7), p.e2410246122. https://doi.org/10.1073/pnas.2410246122

Lobell, D.B. and Di Tommaso, S., 2025. A half-century of climate change in major agricultural regions: Trends, impacts, and surprises. Proceedings of the National Academy of Sciences, 122(20), p.e2502789122. https://doi.org/10.1073/pnas.2502789122

Lobell, D.B., Di Tommaso, S., Zhou, Q. et al. 2025. The mixed effects of recent cover crop adoption on US cropland productivity. Nat Sustain. https://doi.org/10.1038/s41893-025-01599-5

Lobell, D.B., Lee, R.J. 2025. Crop productivity in southern Africa is stagnant despite moderate climate trends. Nat Food 6, 762–765. https://doi.org/10.1038/s43016-025-01203-1

*Weldegebriel, L., Kluger, D.M. and Lobell, D., 2025. Evaluating restoration success: long-term impact of sustainable land management practices in Ethiopia using synthetic control with matrix completion method. Environmental Research Letters. https://doi.org/10.1088/1748-9326/adea89

*Wong, C.A., Lobell, D. and Mauter, M.S., 2025. Field-scale mapping of California crop water productivity to inform water management in critically overdrafted groundwater basins. Environmental Research Letters. https://doi.org/10.1088/1748-9326/add6b8

You, N., Till, J., Lobell, D.B. et al. Climate-driven global cropland changes and consequent feedbacks. 2025. Nat. Geosci. 18, 639–645. https://doi.org/10.1038/s41561-025-01724-1

Tamim, A., Harou, A.P., Burke, M., Lobell, D., Madajewicz, M., Magomba, C., Michelson, H., Palm, C.A. and Xue, J., 2025. Relaxing credit and information constraints: five-year experimental evidence from Tanzanian agriculture. Economic Development and Cultural Change, 73(3), pp.1409-1437.

Ortiz-Bobea, A., Chambers, R.G., He, Y. and Lobell, D.B., 2025. Large increases in public R&D investment are needed to avoid declines of US agricultural productivity. Proceedings of the National Academy of Sciences, 122(11), p.e2411010122. https://doi.org/10.1073/pnas.2411010122

* Singh, K., Lobell, D.B. and Azevedo, I.M., 2025. Quantifying the impact of air pollution from coal-fired electricity generation on crop productivity in India. Proceedings of the National Academy of Sciences, 122(6), p.e2421679122. https://doi.org/10.1073/pnas.242167912

*Tsao, A. and Lobell, D.B., 2025. PlantationBench: A Multiscale, Multimodal Remote Sensing Benchmark for Plantation Mapping Under Distribution Shift. Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops (ICCVW). https://doi.ieeecomputersociety.org/10.1109/ICCVW69036.2025.00310

2024

Zhou J, Zhu P, Kluger DM, Lobell DB, Jin Z. Changes in the Yield Effect of the Preceding Crop in the US Corn Belt Under a Warming Climate. Global change biology. 2024 Nov;30(11):e17556.

*Deines JM, Archontoulis SV, Huber I, Lobell DB. 2024 .Observational evidence for groundwater influence on crop yields in the United States. PNAS. Sep 3;121(36):e2400085121.

Yang Y, Tilman D, Jin Z, Smith P, Barrett CB, Zhu YG, Burney J, …, Lobell DB. 2024. Climate change exacerbates the environmental impacts of agriculture. Science. Sep 6;385(6713):eadn3747. https://doi.org/10.1126/science.adn3747e

Burke M, Zahid M, Martins MC, Callahan CW, Lee R, Avirmed T, Heft-Neal S, Kiang M, Hsiang SM, Lobell D. 2024. Are We Adapting to Climate Change?. National Bureau of Economic Research; Sep 23.

Fuglie KO, Hertel TW, Lobell DB, Villoria NB. 2024. Agricultural Productivity and Climate Mitigation. Annual Review of Resource Economics. Oct 7;16(1):21-40. https://doi.org/10.1146/annurev-resource-101323-094349

* von Bloh M, Lobell D, Asseng S. Knowledge informed hybrid machine learning in agricultural yield prediction. Computers and Electronics in Agriculture. 2024 Dec 1;227:109606. https://doi.org/10.1016/j.compag.2024.109606

* Ma Y, Liang SZ, Myers DB, Swatantran A, Lobell DB. Subfield-level crop yield mapping without ground truth data: A scale transfer framework. Remote Sensing of Environment. 2024 315:114427. https://doi.org/10.1016/j.rse.2024.114427

*Zheng Z, Zhong Y, Zhang L, Burke M, Lobell DB, Ermon S. Towards transferable building damage assessment via unsupervised single-temporal change adaptation. Remote Sensing of Environment. 2024 Dec 15;315:114416.

Di Tommaso, S., Wang, S., Strey, R. and Lobell, D.B., 2024. Mapping sugarcane globally at 10 m resolution using GEDI and Sentinel-2. Earth System Science Data Discussions, 2024, pp.1-26. https://doi.org/10.5194/essd-16-4931-2024

*Manvi, R., Khanna, S., Burke, M., Lobell, D. and Ermon, S., 2024. Large language models are geographically biased. arXiv preprint arXiv:2402.02680.

*Cambron, T.W., Deines, J.M., Lopez, B., Patel, R., Liang, S.Z. and Lobell, D.B., 2024. Further adoption of conservation tillage can increase maize yields in the western US Corn Belt. Environmental Research Letters, 19(5), p.054040.

*Moore, K.A. and Lobell, D.B., 2024. Opportunities and Barriers for Agrivoltaics on Tribal Lands. Sustainability, 16(13), p.5414.

*Khanna, S., Irgau, M., Lobell, D.B. and Ermon, S., 2024. ExPLoRA: Parameter-Efficient Extended Pre-Training to Adapt Vision Transformers under Domain Shifts. ICML 2025. arXiv:2406.10973.

*Ma Y, Chen S, Ermon S, Lobell DB. 2024. Transfer learning in environmental remote sensing. Remote Sensing of Environment. 301:113924. https://doi.org/10.1016/j.rse.2023.113924

*Stigler, M. and Lobell, D., 2024. Optimal index insurance and basis risk decomposition: an application to Kenya. American Journal of Agricultural Economics, 106 (1), 306-329

*Weldegebriel L, Negash E, Nyssen J, Lobell DB. Eyes in the sky on Tigray-Monitoring the impact of armed conflict on cultivated highland using satellite imagery in Ethiopia. Science of Remote Sensing. 2024 May 8:100133.

*Manvi, R., Khanna, S., Mai, G., Burke, M., Lobell, D. and Ermon, S., 2024. GeoLLM: Extracting Geospatial Knowledge from Large Language Models. Twelfth International Conference on Learning Representations (ICLR)

* Xu, J., Elmustafa, A., Weldegebriel, L., Negash, E., Lee, R., Meng, C., Ermon, S. and Lobell, D., 2024. HarvestNet: A Dataset for Detecting Smallholder Farming Activity Using Harvest Piles and Remote Sensing. Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI-24)

2023

Burke, M., Tanutama, V., Heft-Neal, S., Hino, M. and Lobell, D., 2023. Game, sweat, match: Temperature and elite worker productivity. National Bureau of Economic Research. DOI 10.3386/w31650.

*He, L., Rosa, L., Lobell, D.B., Wang, Y., Yin, Y., Doughty, R., Yao, Y., Berry, J.A. and Frankenberg, C., 2023. The weekly cycle of photosynthesis in Europe reveals the negative impact of particulate pollution on ecosystem productivity. Proceedings of the National Academy of Sciences, 120(49), p.e2306507120.

*Khanna, S., Liu, P., Zhou, L., Meng, C., Rombach, R., Burke, M., Lobell, D.B. and Ermon, S., 2023. Diffusionsat: A generative foundation model for satellite imagery. In The Twelfth International Conference on Learning Representations.

*Wong, C.A., Lobell, D.B. and Mauter, M.S., 2023. Multicriteria Suitability Index for Prioritizing Early-Stage Deployments of Wastewater-Derived Fertilizers in Sub-Saharan Africa. Environmental Science & Technology, 57, 45, 17588–17597.

*Tsao, A., Nzewi, I., Jayeoba, A., Ayogu, U. and Lobell, D.B., 2023. Canopy Height Mapping for Plantations in Nigeria Using GEDI, Landsat, and Sentinel-2. Remote Sensing, 15(21), p.5162.

*Kluger, D.M., Lobell, D.B. and Owen, A.B., 2023. Biases in estimates of air pollution impacts: the role of omitted variables and measurement errors. arXiv preprint arXiv:2310.08831.

Yang, Y., Jin, Z., Mueller, N.D., Driscoll, A.W., Hernandez, R.R., Grodsky, S.M., Sloat, L.L., Chester, M.V., Zhu, Y.G. and Lobell, D.B., 2023. Sustainable irrigation and climate feedbacks. Nature Food, 4 (8), 654-663. https://doi.org/10.1038/s43016-023-00821-x

Bhattarai, N., Lobell, D.B., Balwinder-Singh, Fishman, R., Kustas, W.P., Pokhrel, Y. and Jain, M., 2023. Warming temperatures exacerbate groundwater depletion rates in India. Science Advances, 9(35), p.eadi1401.

* Morton, C.M., Pullabhotla, H., Bevis, L. and Lobell, D.B., 2023. Soil micronutrients linked to human health in India. Scientific Reports, 13(1), p.13591.

*Liu, E., Meng, C., Kolodner, M., Sung, E.J., Chen, S., Burke, M., Lobell, D. and Ermon, S., 2023. Building Coverage Estimation with Low-resolution Remote Sensing Imagery. Remote Sensing, in review.

* Di Tommaso, S., Wang, S., Vajipey, V., Gorelick, N., Strey, R. and Lobell, D.B., 2023. Annual field-scale maps of tall and short crops at the global scale using gedi and sentinel-2. Remote Sensing, 15(17), p.4123.

Lobell, D.B., Villoria, N.B. Reduced benefits of climate-smart agricultural policies from land-use spillovers. Nat Sustain (2023). https://doi.org/10.1038/s41893-023-01112-w

*Deines, J. M., Swatantran, A., Ye, D., Myers, B., Archontoulis, S., & Lobell, D. B. (2023). Field-scale dynamics of planting dates in the US Corn Belt from 2000 to 2020. Remote Sensing of Environment, 291, 113551. https://doi.org/https://doi.org/10.1016/j.rse.2023.113551

2022

*Cong, Y., Khanna, S., Meng, C., Liu, P., Rozi, E., He, Y., Burke, M., Lobell, D. and Ermon, S., 2022. Satmae: Pre-training transformers for temporal and multi-spectral satellite imagery. Advances in Neural Information Processing Systems, 35, pp.197-211.

Lobell, D.B., Di Tommaso, S. and Burney, J.A., 2022. Globally ubiquitous negative effects of nitrogen dioxide on crop growth. Science Advances, 8(22), https://doi.org/10.1126/sciadv.abm9909

Lin, C., Zhong, L., Song, X.P., Dong, J., Lobell, D.B. and Jin, Z., 2022. Early-and in-season crop type mapping without current-year ground truth: Generating labels from historical information via a topology-based approach. Remote Sensing of Environment, 274, p.112994.

*Elmustafa, Rozi, He, Mai, Ermon, Burke, and Lobell. 2022. Understanding economic development in rural Africa using satellite imagery, building footprints and deep models. In Proceedings of the 30th International Conference on Advances in Geographic Information Systems (SIGSPATIAL '22). Association for Computing Machinery, New York, NY, USA, Article 89, 1–4. https://doi.org/10.1145/3557915.3561025

* Kluger, D.M., Owen, A.B. and Lobell, D.B., 2022. Combining randomized field experiments with observational satellite data to assess the benefits of crop rotations on yields. Environmental Research Letters, 17(4), p.044066..

*Deines, J., Guan, K., Lopez, B.. Wang, S., White, C., Zhou, Q., and D.B. Lobell 2022. Recent cover crop adoption is associated with small maize and soybean yield losses in the United States. Global Change Biology, 00, 1– 14. https://doi.org/10.1111/gcb.16489.

*Wang, S., Waldner, F. and Lobell, D.B., 2022. Unlocking large-scale crop field delineation in smallholder farming systems with transfer learning and weak supervision. Remote Sensing 14(22), 5738; https://doi.org/10.3390/rs14225738.

* Meng, C., Liu, E., Neiswanger, W., Song, J., Burke, M., Lobell, D. and Ermon, S., 2022. Is-count: Large-scale object counting from satellite images with covariate-based importance sampling. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 36, No. 11, pp. 12034-12042).

*Behrer, A. and Lobell, D.B. Higher levels of no-till agriculture associated with lower PM2.5 in the Corn Belt. 2022. Environmental Research Letters, 17(9):094012.

Ishtiaque, A., Singh, S., Lobell, D., Fishman, R. and Jain, M., 2022. Prior crop season management constrains farmer adaptation to warming temperatures: Evidence from the Indo-Gangetic Plains. Science of The Total Environment, 807, p.151671.

*Lee, J.Y., Wang, S., Figueroa, A.J., Strey, R., Lobell, D.B., Naylor, R.L. and Gorelick, S.M., 2022. Mapping Sugarcane in Central India with Smartphone Crowdsourcing. Remote Sensing, 14(3), p.703.

*Campolo, J., Ortiz-Monasterio, I., Guerena, D. and Lobell, D.B., 2022. Evaluating maize yield response to fertilizer and soil in Mexico using ground and satellite approaches. Field Crops Research, 276, p.108393.

2021

*Yeh, C., Meng, C., Wang, S., Driscoll, A., Rozi, E., Liu, P., Lee, J., Burke, M., Lobell, D.B. and Ermon, S., 2021, August. SustainBench: Benchmarks for Monitoring the Sustainable Development Goals with Machine Learning. In Thirty-fifth Conference on Neural Information Processing Systems.

Di Tommaso, S., Wang, S. and Lobell, D.B., 2021. Combining GEDI and Sentinel-2 for wall-to-wall mapping of tall and short crops. Environmental Research Letters. https://doi.org/10.1088/1748-9326/ac358c

*Kluger, D.M., Wang, S. and Lobell, D.B., 2021. Two shifts for crop mapping: Leveraging aggregate crop statistics to improve satellite-based maps in new regions. Remote Sensing of Environment, 262, p.112488

Bhattarai, N., Pollack, A., Lobell, D.B., Fishman, R., Singh, B., Dar, A. and Jain, M., 2021. The impact of groundwater depletion on agricultural production in India. Environmental Research Letters, 16(8), p.085003.

Lobell, D.B. and Burney, J.A., 2021. Cleaner air has contributed one-fifth of US maize and soybean yield gains since 1999. Environmental Research Letters, 16(7), p.074049.

Lobell, D.B., Di Tommaso, S., Burke, M. and Kilic, T., 2021. Twice Is Nice: The Benefits of Two Ground Measures for Evaluating the Accuracy of Satellite-Based Sustainability Estimates. Remote Sensing, 13(16), p.3160.

*Lee, J., Grosz, D., Uzkent, B., Zeng, S., Burke, M., Lobell, D. and Ermon, S., 2021, May. Predicting Livelihood Indicators from Community-Generated Street-Level Imagery. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 35, No. 1, pp. 268-276).

*Lee, J., Brooks, N.R., Tajwar, F., Burke, M., Ermon, S., Lobell, D.B., Biswas, D. and Luby, S.P., 2021. Scalable deep learning to identify brick kilns and aid regulatory capacity. Proceedings of the National Academy of Sciences, 118(17).

Ishtiaque, A., Singh, S., Lobell, D., Singh, B., Fishman, R. and Jain, M., 2021. Prior crop season management constrains farmer adaptation to warming temperatures: Evidence from the Indo-Gangetic Plains. Science of The Total Environment, p.151671.

Rao, P., Zhou, W., Bhattarai, N., Srivastava, A.K., Singh, B., Poonia, S., Lobell, D.B. and Jain, M., 2021. Using Sentinel-1, Sentinel-2, and Planet Imagery to Map Crop Type of Smallholder Farms. Remote Sensing, 13(10), p.1870.

Ortiz-Bobea, A., Ault, T.R., Carrillo, C.M., Chambers, R.G. and Lobell, D.B., 2021. Anthropogenic climate change has slowed global agricultural productivity growth. Nature Climate Change, 11(4), pp.306-312.

*Ayush, K., Uzkent, B., Meng, C., Tanmay, K., Burke, M., Lobell, D. and Ermon, S., 2021. Geography-aware self-supervised learning. In Proceedings of the IEEE/CVF International Conference on Computer Vision (pp. 10181-10190).

Burke, M., Driscoll, A., Lobell, D.B. and Ermon, S., 2021. Using satellite imagery to understand and promote sustainable development. Science, 371(6535).

*Deines, J.M., Patel, R., Liang, S.Z., Dado, W. and Lobell, D.B., 2021. A million kernels of truth: insights into scalable satellite maize yield mapping and yield gap analysis from an extensive ground dataset in the US Corn Belt. Remote Sensing of Environment, 253, p.112174.

*Campolo, J., Güereña, D., Maharjan, S. and Lobell, D.B., 2021. Evaluation of soil-dependent crop yield outcomes in Nepal using ground and satellite-based approaches. Field Crops Research, 260, p.107987.

Benami, E., Jin, Z., Carter, M.R., Ghosh, A., Hijmans, R.J., Hobbs, A., Kenduiywo, B. and Lobell, D.B., 2021. Uniting remote sensing, crop modelling and economics for agricultural risk management. Nature Reviews Earth & Environment, pp.1-20.

2020

*Yeh, C., Perez, A., Driscoll, A., Azzari, G., Tang, Z., Lobell, D., Ermon, S. and Burke, M., 2020. Using publicly available satellite imagery and deep learning to understand economic well-being in Africa. Nature communications, 11(1),

pp.1-11.

Newport, D., Lobell, D.B., Srivastava, A.K., Rao, P., Umashaanker, M., Malik, R.K., McDonald, A. and Jain, M., 2020. Factors Constraining Timely Sowing of Wheat as an Adaptation to Climate Change in Eastern India. Weather, Climate, and Society, 12(3), pp.515-528.

*Wang, S., Di Tommaso, S., Deines, J.M. and Lobell, D.B., 2020. Mapping twenty years of corn and soybean across the US Midwest using the Landsat archive. Scientific Data, 7(1), pp.1-14.

Diffenbaugh, N.S., et al., 2020. The COVID-19 lockdowns: a window into the Earth System. Nature Reviews Earth & Environment, 1(9), pp.470-481.

*Wang, S., Di Tommaso, S., Faulkner, J., Friedel, T., Kennepohl, A., Strey, R. and Lobell, D.B., 2020. Mapping crop types in southeast india with smartphone crowdsourcing and deep learning. Remote Sensing, 12(18), p.2957.

*Lin Aung, H., Uzkent, B., Burke, M., Lobell, D. and Ermon, S., 2020. Farm Parcel Delineation Using Spatio-Temporal Convolutional Networks. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (pp. 76-77).

*Dado, W.T., Deines, J.M., Patel, R., Liang, S.Z. and Lobell, D.B., 2020. High-Resolution Soybean Yield Mapping Across the US Midwest Using Subfield Harvester Data. Remote Sensing, 12(21), p.3471.

Wolski, P., Lobell, D., Stone, D., Pinto, I., Crespo, O. and Johnston, P., 2020. On the role of anthropogenic climate change in the emerging food crisis in southern Africa in the 2019–2020 growing season. Global Change Biology, 26(5), pp.2729-2730.

Lobell, D.B., Deines, J.M. and Di Tommaso, S., 2020. Changes in the drought sensitivity of US maize yields. Nature Food, pp.1-7.

Lobell, D.B., 2020. Principles and priorities for one CGIAR. Food Policy, p.101825.

Lobell, D.B., Di Tommaso, S., You, C., Yacoubou Djima, I., Burke, M. and Kilic, T., 2020. Sight for Sorghums: Comparisons of Satellite-and Ground-Based Sorghum Yield Estimates in Mali. Remote Sensing, 12(1), p.100.

*Wang, S., Chen, W., Xie, S.M., Azzari, G. and Lobell, D.B., 2020. Weakly Supervised Deep Learning for Segmentation of Remote Sensing Imagery. Remote Sensing, 12(2), p.207.

Edreira, J.I.R., Mourtzinis, S., Azzari, G., Andrade, J.F., Conley, S.P., Lobell, D., Specht, J.E. and Grassini, P., 2020. From sunlight to seed: Assessing limits to solar radiation capture and conversion in agro-ecosystems. Agricultural and Forest Meteorology, 280, p.107775.

*Ayush, K., Uzkent, B., Burke, M., Lobell, D. and Ermon, S., 2020. Generating Interpretable Poverty Maps using Object Detection in Satellite Images. arXiv preprint arXiv:2002.01612.

2019

*Deines, J.M., Wang, S. and Lobell, D.B., 2019. Satellites reveal a small positive yield effect from conservation tillage across the US Corn Belt. Environmental Research Letters, 14(12), p.124038.

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