

Alicia G. Harley, Ph.D.

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SCHOLARLY PROFILE

I study how institutions (rules, norms, culture and beliefs) shape development pathways in the Anthropocene System and how actors can reorient institutions to meet sustainable development goals. I am particularly interested in the consequences of inequality and maldistributions of power for sustainable development outcomes. My empirical research focuses on agriculture and food systems, specifically why the poorest farmers often fail to benefit from the fruits of technological innovation, and how to support agriculture systems that improve inclusive well-being.

RESEARCH EXPERIENCE

2018 **Giorgio Ruffolo Post-Doctoral Fellow in Sustainability Science**, Harvard Kennedy School of Government, Cambridge MA.

EDUCATION

2018 **Ph.D. in Public Policy**, Harvard University.
Fields: Sustainable Development; Science and Technology Studies; Agricultural Systems
Dissertation: Why does technology fail to benefit the poorest farmers? A sociotechnical approach to the study of innovation and poverty
Primary Advisor: William Clark, Harvey Brooks Professor of International Science, Public Policy and Human Development

2010 **Fulbright Scholar**, Egyptian National Fulbright Commission.

2008 **A.B. magna cum laud in Environmental Science and Public Policy**, Harvard University.
Honors Thesis: "Sustainability and Land-Use Planning: A Decision Support Tool for Rapidly Developing Urban Areas: A Case Study of Cairo."

PUBLICATIONS & WORKING PAPERS

Publications

Anadon, Laura Diaz, Gabriel Chan, **Alicia G. Harley**, Kira Matus, Suerie Moon, Sharmila L. Murthy, and William C. Clark. 2016. [Making Technological Innovation Work for Sustainable Development](#). *PNAS* 113 (35): 9682-9690.

Under Review

Harley, Alicia G. 2019. Why Does Technology Fail to Benefit the Poorest Farmers? The Case of the System of Rice Intensification. *Under Review*.

Working Papers

Clark, William C. and Alicia G. Harley. Sustainability Science: The State of the Field. *Invited paper for January 2020 Issue of Annual Review in Environment and Resources.*

Binz, Christian, **Alicia G. Harley** and William Clark. 2019. Transition pathways toward Sustainable Development – An Analytical Framework and a Case Study. *Prepared for presentation at University of Michigan Sustainability and Development Conference, November 2018.*

Mukherji, A., D. Roy Chowdhury, **A. G. Harley**, A. Hussain and V. Khadgi, 2018. Solar powered irrigation pumps in South Asia: Are policies adequately informed by science? *Prepared for presentation to the INOGO Workshop at the Graduate Institute, Geneva Switzerland, May 2016.*

Anadon, Laura Diaz, Kira Matus, Suerie Moon, Gabriel Chan, **Alicia G. Harley**, Sharmila Murthy, Vanessa Timmer, Ahmed Abdel Latif, Kathleen Araujo, Kayje Booker, Hyundo Choi, Kristian Dubrawski, Lonia Friedlander, Christina Ingersoll, Erin Kempster, Laura Pereira, Jennie Stephens, Lee Vinsel, and William C. Clark. 2014. [Innovation and Access to Technologies for Sustainable Development: Diagnosing Weaknesses and Identifying Interventions in the Transnational Arena](#). Sustainability Science Program Working Paper 2014-01. Sustainability Science Program and Belfer Center for Science and International Affairs, Kennedy School of Government, Harvard University, Cambridge, MA.

Workshop Reports

Harley, Alicia G, N Michele Holbrook and William C. Clark. 2015. [Innovation for Vulnerable Farmers: Drought and Water Scarcity Adaptation Technologies](#). Report of a Workshop conducted at the Sustainability Science Program, Harvard University, September 11–12, 2014. Sustainability Science Program Working Paper 2015-01. Sustainability Science Program, Kennedy School of Government, Harvard University, Cambridge, MA.

Harley, Alicia G, Sharmila Murthy, Laura Diaz Anadon, Gabriel Chan, Kira Matus, Suerie Moon, Vanessa Timmer, and William C. Clark. 2014. [Innovation and Access to Technologies for Sustainable Development: A Global Systems Perspective](#). Report of a Workshop conducted at the Weatherhead Center for International Affairs, Harvard University, April 24, 2014. Sustainability Science Program Working Paper 2014-02. Sustainability Science Program and Belfer Center for Science and International Affairs, Kennedy School of Government, Harvard University, Cambridge, MA.

Murthy, Sharmila, Laura Pereira, Alicia Harley, Daniel Shemie, Eunjee Lee, Patricia Guardabassi, Chao Zhang, and Scott Moore. 2013. [The Role of Information and Communications Technology \(ICT\) in Helping Decision-Makers Meet Food, Energy and Water \(FEW\) Needs](#). Sustainability Science Program Working Paper No. 2013-02, November. Sustainability Science Program, Kennedy School of Government, Harvard University, Cambridge, MA.

CURRENT PROJECTS

Conceptualizing Power in Sustainability Science: Sustainable development is a massively redistributive agenda. Achieving sustainable development goals asks nothing less than for the world to improve the well-being of people within and across generations, particularly for the poorest and most marginalized. I argue that this agenda cannot be accomplished without changes in configurations of power governing the

Anthropocene system, including configuration of power over who has access to capital assets and control over production and consumption systems. This project draws on a wide literature on power and agency in sociology, anthropology, philosophy and economics to create a framework for conceptualizing power in Sustainability Science. The framework is applied to a case study of Appalachian Coal Country covering a 200-year period of the co-evolving social-environmental system in the region.

Transitions Pathways for Sustainable Development: This project addresses the challenge of how current unsustainable patterns in human use of the earth can be transformed toward trajectories of sustainable development. We address this challenge by integrating theoretical contributions from study of “sustainability science” on the one hand, and “socio-technical transitions” on the other, to propose a conceptual framework for understanding transitions toward sustainable development. This conceptual framework is being used by an international and interdisciplinary team to study sustainability transitions.

Case Studies in Sustainability Science: Together with co-authors Michaela Thompson and William Clark, I am co-editing a volume of case studies specifically for teaching in sustainability science. My own contributions to the volume include cases on Appalachian coal country and Cairo and its peri-urban fringe.

SELECTED TALKS & PRESENTATIONS

Invited Lectures

- 2019 Development Indicators & Inclusive Wealth, Distributional Impacts of Resource Efficiency, *United Nations Nairobi Kenya*
- 2018 Innovation and Access to Technology for the Poorest Farmers, Global Food+ Symposium, *Tufts University*, [Video Link](#)
- 2018 Making Innovation Work for Sustainable Development, Green Living Seminar Series, *Massachusetts College of Liberal Arts*
- 2016 Technology & Poverty, Weatherhead Center for International Affairs Director’s Lunch Seminar Series, *Harvard University*

Selected Conference Talks

- 2019 Challenges of Technology Selection: The Case of The System of Rice Intensification, Association of American Geographers (AAG) Annual Meeting, *Washington DC*
- 2018 Why Does Technology Fail to Benefit the Poorest Farmers, Sustainability and Development Conference, *University of Michigan, Ann Arbor Michigan*
- 2018 Transitions Studies and Sustainability Science: Promising Intersections Ahead? International Sustainability Transitions Conference, *Manchester UK*
- 2016 Powering Agriculture with Sunshine in South Asia, Climate Policy Innovation and Access to Clean Energy Technology Conference, *Graduate Institute, Geneva Switzerland*
- 2016 Making Technological Innovation Work for Sustainable Development, *University College London, London UK*

SELECTED FELLOWSHIPS & AWARDS

- Switzer Environmental Fellowship, 2015 – 2016
- Weatherhead Center for International Affairs Dissertation Completion Fellowship, 2015 –2016
- Inaugural Ray Goldberg Fellowship for research in global food systems, 2015
- Frederick Sheldon Traveling Fellowship, 2014 – 2015

- Giorgio Ruffolo Pre-Doctoral Research Fellow in Sustainability Science, 2012 – 2013
- Vicki Norberg-Bohm Fellowship in Sustainability Science, 2011 – 2012
- Fulbright Fellowship, 2010 – 2011
- Detur Book Prize for Outstanding Scholars in their first year at Harvard College, 2004 – 2005

TEACHING & ADVISING EXPERIENCE

Harvard College

Received the Derek Bok Certificate for Distinction in Teaching based on excellent student evaluations in all courses for which I served as a teaching fellow in Harvard College. For the course Sustainable Development (ESPP 11) I played a large role in design of the syllabus and teaching material over multiple iterations of the course.

- Guest Lecturer for Sustainable Development (ESPP 11) with Professor William Clark, Fall 2017
- Head Teaching Fellow for Sustainable Development (ESPP 11) with Professor William Clark, Spring 2014
- Head Teaching Fellow for Environmental Politics (ESPP 78) with Professor Sheila Jasanoff, Fall 2011 & Fall 2012
- Head Teaching Fellow for Environmental Policy Analysis (ESPP 10) with Professor John Briscoe, Spring 2011

Harvard Kennedy School

- Guest Lecturer for Innovation for Global Development (IGA 523) with Professor Calestous Juma, Fall 2016
- Head Teaching Fellow for Sustainability Science (IGA 944) with Professor William Clark, Fall 2014
- Head Teaching Fellow for Agribusiness (BGP 204) with Professor Ray Goldberg, Spring 2013

Other Teaching Experience

- Co-led three 8-day field courses for ESPP students in Florida and New Mexico, January 2013, 2014, 2015
- Head Teaching Fellow for a 10-day short course in Sustainability Science for PhD Students and Postdoctoral Fellows at Venice International University, May 2014

PROFESSIONAL SERVICE

Committee Experience

- Executive Committee Weatherhead Center for International Affairs, Graduate Student Representative, 2015-16
- Harvard Sustainability Plan Review Committee, Student Representative, 2014-15

Conferences Organized

- Transformation of coupled social-ecological and socio-technical systems: Defining the contours of an integrative research agenda, Switzerland, May 2019
- Reviving springs and providing access to solar powered irrigation pumps (SPIP) through community based water use planning Launch Workshop [Link](#); Nepal, November 2015

- Innovation for Vulnerable Farmers: Drought and Water Scarcity Adaptation Technologies [Link](#), Harvard, September 2014
- Politics & Development in an Emerging State: The Political Economy of Bihar, Harvard, March 2014
- The Role of Information and Communications Technology (ICT) in Helping Decision-Makers Meet Food, Energy and Water (FEW) Needs; Harvard, May 2013

Journal Reviewer

- Climate and Development
- Environmental Innovation and Societal Transitions
- Proceedings of the National Academy of Sciences (PNAS)
- Water International
- World Development

Professional Memberships

- American Association for the Advancement of Science (AAAS), 2016 –
- American Association of Geographers (AAG), 2018 –
- American Political Science Association (APSA), 2018 –
- Chicago Council on Global Affairs, 2017 –
- International Public Policy Association (IPPA), 2019 –
- Society for Social Studies of Science (4S), 2018 –
- Sustainability Transitions Research Network (STRN), 2017 –

WORK & LEADERSHIP EXPERIENCE

Board Member (Special Invitee) PRAN, 2013 –

Special Invitee Board Member for PRAN, Gaya, which is a small NGO (~20 staff) working in rural Bihar to promote knowledge and technology adoption by small and marginal women farmers. As a board member, I advise PRAN's executive director on growth strategy and support PRAN in discussions with funders and international organizations.

Mather House Resident Tutor, 2011 – 2014

Served as residential tutor in Harvard undergraduate dorm. Responsibilities included fellowships advising, LGBT community support and sophomore advising.

Project Coordinator, Harvard Office For Sustainability, 2008 – 2009

Worked with the director to design and implement multi-stakeholder strategy to achieve Harvard University's greenhouse gas reduction goal: facilitated meetings of Executive Committee consisting of several deans, professors and senior administrators, prepared briefs and talking points for the Executive Vice President and President of Harvard University and played a key role in organizing the greenhouse gas reduction commitment kick-off event attended by 15,000 people.

SKILLS

Languages: Arabic (Advanced Spoken); German (Advanced Spoken, intermediate written); Hindi (Intermediate Spoken); Spanish (Intermediate spoken).

Fieldwork: Field survey design; field survey management; qualitative interviews and ethnographic fieldwork.

Research Software: Atlas.ti; Microsoft Excel; R Statistical Software.