

Agriculture, Food and the Environment

8:00 – 9:40 AM at Cornell, Ithaca

20:00 - 21:40 PM at CAU, Beijing

Wednesdays, Sept 1-Dec 1, 2021

Co-coordinators: Terry W. Tucker, tw2@cornell.edu

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Instructed in English, CAU and Cornell will be connected via Zoom

Course Description

This joint course is designed to acquaint you with major issues and problems around agriculture, food and the environment, with a focus on China, particularly its rural development and agrarian change in the past decades. Lectures and discussions will establish the global and regional contexts for sustainable agri-food systems and rural development. The course includes 4 themes: 1) Major Global Agricultural Systems; 2) Issues and Innovations in Food Systems; 3) Rural Development and Agrarian Change; 4) Approaches Towards Sustainability.

The course may be taken as a stand-alone survey course; however, it is a preparatory course for students selected to participate in the spring or summer semester course *Development and Change*, which includes a concurrent field trip to China during the January intersession for Cornell students (estimated earliest trip dates, January 2023), or to the US before the autumn semester for CAU students (estimated earliest trip dates, August 2022).

The Cornell 2021 registration will open to its undergraduates of the 2018 batch, the 2019 batch and the 2020 batch, students from the Department of Global Development are the main participants; the CAU 2021 registration will also open to its undergraduates of the 2018 batch, the 2019 batch and the 2020 batch, and all the postgraduates including international students.

Course Structure

Session	Date	Topic	Lecturer
1	Sept 1, 2021	Overview of the course	<p style="text-align: center;">Terry W. Tucker <i>Professor, Co-director of MPS in Global Development</i></p> <p style="text-align: center;">Juan Liu <i>Associate Professor, Development Studies and Social Policy</i></p>
1 Major Global Agricultural Systems			
2	Sept 1, 2021	1.1 Differing approaches to agricultural resource management and governance across the world	<p style="text-align: center;">Mario Herrero <i>Chief research scientist of agriculture and food at the Commonwealth Scientific and Industrial Research Organization (CSIRO)</i> <i>Professor, Department of Global Development</i></p>
3	Sept 8, 2021	1.2 Integrated crop-livestock systems; Animal husbandry in different agriculture systems	
4	Sept 15, 2021	1.3 Comparative agricultural knowledge and innovation systems	<p style="text-align: center;">Terry W. Tucker <i>Professor, Co-director of MPS in Global Development</i></p>
5	Sept 22, 2021	1.4 Crops and horticulture	Knowledge sharing by students from CAU and CU, grouping in the first session.
2 Issues and Innovations in Food Systems			
6	Sept 29, 2021	2.1 Competing perspectives on the state of the Global Agriculture and Food System	<p style="text-align: center;">Prabhu Pingali <i>Professor, Charles H. Dyson School of Applied Economics and Management</i> <i>Professor, Department of Global Development</i></p>
7	Oct 6, 2021	2.2 New directions and trends in the Agri-food Systems in China	<p style="text-align: center;">Juan Liu <i>Associate Professor, Development Studies and Social Policy</i></p>

3. Rural Development and Agrarian Change			
8	Oct 13, 2021	3.1 From Poverty Alleviation to Rural Vitalization: a case of small famer household-based village development	Jingzhong Ye <i>Professor and Dean, College of Humanities and Development Studies, CAU</i>
9	Oct 20, 2021	3.2 Internal migration and the left-behind populations: changing dynamics	Chunyu Wang <i>Associate Professor, Development Studies and Social Policy</i>
10	Oct 27, 2021	3.3 Land regime and land politics in China	
4. Approaches Towards Sustainability			
11	Nov 3, 2021	4.1 Cropping Systems Management with Attention to Climate Change Adaptation and Mitigation	Andrew McDonald <i>Associate Professor, School of Integrative Plant Science Soil and Crop Sciences Section, Department of Global Development, Cornell</i>
12	Nov 10, 2021	4.2 Issues and Innovations Related to Food Waste	Lori Leonard <i>Professor and Chair, Department of Global Development</i>
13	Nov 17, 2021	4.3 The Concept of Circular Economy: Potential Innovations and Relevance for Food and Agriculture Systems	Rebecca Nelson <i>Professor, School of Integrative Plant Science Professor, Department of Global Development</i>
5. Wrap-up and Discussions			
14	Dec 1, 2021	5.1 Creation work: what we could imagine for climate smart agriculture and transformative agri-food systems?	Terry W. Tucker Juan Liu

Course Instructors

Mario Herrero is a leading global expert in sustainable food systems, Herrero currently serves as chief research scientist of agriculture and food at the Commonwealth Scientific and Industrial Research Organization (CSIRO), and he will be a professor of sustainable food systems and global change in the Department of Global Development at Cornell University. His research focuses on increasing the sustainability of food systems for the benefit of humans and ecosystems. He works in the areas of sustainable intensification of agriculture, climate mitigation and adaptation, livestock systems, and healthy and sustainable diets. Herrero has more than 20 years' experience working on strategic agricultural Research for Development projects in Africa, Latin America, Asia and Europe.

Lori Leonard is professor and chair in the Department of Global Development at Cornell University. Her current research focuses on the social and environmental implications of consumption, disposability, and the global circulation of used and secondhand things. She is involved in research projects on the recycling of food waste in upstate New York and on the repair and recycling of used cars in West and Central Africa. She also carries out research on the extractive industries, including a long-term study of a pipeline project in Chad that was supposed to be a model oil-as-development project and studies of Chad's energy transitions. Gender is a crosscutting theme in her research. Her research has also been supported by the NSF, the NIH, the WHO, the Council of American Overseas Research Centers (CAORC), amfAR, state agencies and private foundations. She is a member of the graduate fields of Global Development, Development Sociology, and Feminist, Gender and Sexuality Studies at Cornell.

Juan Liu is associate professor of political ecology and agrarian studies at the College of Humanities and Development Studies, China Agricultural University (COHD-CAU) and a researcher at the Institute of Environmental Science and Technology, Universitat Autònoma de Barcelona

(ICTA-UAB). Her research interests include energy transitions, migration and the left-behind population, land politics, and the political ecology of agriculture, food and environment, etc. She is the co-editor of *Rural Transformations and Agro-Food Systems* (Routledge, 2018) and *Beyond the Global Land Grab* (Routledge, 2022).

Andrew McDonald is a cropping systems ecologist who addresses global challenges to agricultural sustainability and food security through process-based agronomy, integrated systems analysis, development of decision frameworks, and by fostering alliances for technology scaling. Andrew research interests include Cropping systems ecology, Agricultural sustainability and international agriculture, policy and applied social sciences. Much of Andrew's current research program is anchored in South Asia where he previously led CIMMYT's sustainable intensification program.

Rebecca Nelson's laboratory works on disease resistance in crops with a focus on maize, with broader interests and activities relating to agroecology and food systems. Her laboratory is analyzing the genetic architecture of quantitative disease resistance and dissecting mechanisms that impair pathogen development, with a special interest in mycotoxin resistance and management. Through the McKnight CCRP, she supports a portfolio of research projects aimed at improving food security in developing countries in Africa and Latin America. She co-teaches courses in international development and public health. She worked at the International Potato Center (CIP) in Lima, Peru from 1996-2001 and at the International Rice Research Institute in the Philippines from 1988-1996.

Prabhu Pingali is a Professor in the Charles H. Dyson School of Applied Economics and Management at Cornell University, with a joint appointment in both the Division of Nutritional Sciences and Department of Global Development, as well as the Founding Director of the Tata-Cornell Institute for Agriculture and Nutrition (TCI). Prabhu has four decades of experience working on food and agricultural policy,

technology change and impact assessment across the developing world. He has had on-the-ground research experience in South and Southeast Asia, Sub-Saharan Africa and Latin America. His current research is focused on the nexus of agriculture, food systems and nutrition. As Director of TCI, Prabhu has been charged with developing and managing a multidisciplinary action-research program that is focused on the chronic problems of rural poverty and malnutrition and the role of agriculture in alleviating the problems.

Terry Tucker is a Professor of the Practice in the Department of Global Development. He serves as Co-Director of Graduate Studies for the MPS – Global Development program. His teaching and outreach work focuses on smallholder agriculture, especially farmers’ adaptation to change, as well as their roles in research, innovation and social learning processes. He also collaborates on institution strengthening initiatives with universities and other post-secondary educational institutions in South and Southeast Asia, Africa and Latin America, particularly initiatives related to outreach and multi-institution development partnerships.

Chunyu Wang is an associate professor of Development Studies at College of Humanities and Development Studies (COHD), China Agricultural University. Her research interests include rural left-behind population, agrarian change and land politics.

Jingzhong Ye is professor of development studies and Dean at the College of Humanities and Development Studies (COHD), China Agricultural University. His research interests include development intervention and rural transformation, rural ‘left behind’ populations, rural education, land politics and sociology of agriculture.

Course Evaluation (for CAU participants)

Below is a list of course requirements upon which you will be evaluated in the course.

Attendance and participation (20% of total mark)

Attendance and participation during class is mandatory. Students will be allowed one unexcused absence. Students are required to read the assigned readings before coming to class and must be ready to discuss the readings. Participation is not only about attending class; it is about actively listening and engaging with the material and instructor. Students will be asked to answer questions in class, discuss various issues and participate in various class activities.

Group presentation (20% of total mark)

Students will be required to work in groups to deliver a presentation or the creation works. Each member's contribution has to be displayed throughout the presentation. The specific reporting time will be determined during the course.

Final essay (60% of total mark, in English)

Students will be required to write a paper based on a topic related to the course. Your topic will require one of the co-coordinators' approval. This paper will require you to formulate an argument about a specific issue. As such, it is not sufficient to describe a topic, you will have to take a stance, develop an argument and defend your stance throughout the paper.

Additional information

A Cornell-CAU joint certificate will be awarded to students who completed all the assignments as required. The completion of the course is also a ticket to join the organized field visit at Cornell and its neighboring communities and regions in August 2022 or April 2023. The Chinese students from CAU who perform the best in this course will be eligible to apply partial scholarships for their Cornell/US visit.

Suggested Readings

Useful references will also be shared through an accessible online platform.