

# Geography 130. Food and the Environment

Prof. Nathan Sayre

Spring 2017

TTh 11:00-12:30, 10 Evans Hall

## INTRODUCTION

The production of food is the single most important arena of human interaction with the environment: it impacts most of the world's land, fresh water, and marine ecosystems; it has profound effects on human health, equity and well-being; and it contributes significantly to—and will be strongly affected by—climate change. How is food produced, distributed and consumed today? How did the world's food system come into being? What are its social and environmental implications? How might it change, or be changed, in the future?

Not surprisingly, the issue of food has long been central to both political economy and environmental activism. Adam Smith and Karl Marx saw strong links between wages and the price of food, and therefore between food and the economy as a whole. In his famous *Essay on the Principle of Population*, Thomas Malthus argued that food production could not increase as fast as population, and that “misery and vice” were therefore inevitable. In the US, concerns about contaminated food and food-borne diseases led to some of nation's earliest federal regulations. Struggles over food—how and where it is produced, by and for whom, and with what consequences—can be found almost everywhere today.

This course begins from the proposition that human-environment relations are always social relations. How food and other natural resources are produced, distributed, valued, consumed, conserved and degraded are historically- and geographically-specific questions whose answers cannot be reduced to simple formulas. To be sure, the world's population has never been larger, and its environmental prospects have never been so dim as at present. But the outcomes of human-environment interactions are neither preordained nor very predictable.

The question is how to understand these relations as simultaneously social and ecological. We will examine food, population and the environment geographically and historically and take a closer look at Malthus's famous essay and its place in classical political economy. We will examine case studies of colonial famines, the Dust Bowl, the Corn Belt, meat production and population control. We will also consider the politics of food, food related social movements, issues of public health and obesity, and the prospects for agriculture in the face of climate change. We will see that issues of food and the environment are always intimately related to political and economic relations—colonialism, capitalism, the state, and scientific knowledge—and that to abstract “the natural” from “the social” is at best naïve and at worst dangerous.

## COURSE REQUIREMENTS AND GRADING CRITERIA

*Discussion section attendance and participation (25% of final grade):* Attendance at discussion sections is required. Students are expected to arrive each week prepared to participate actively in discussion, and to complete homework assignments on time.

*Mid-term exam (20%):* A take-home mid-term exam will be handed out at the end of lecture on March 2<sup>nd</sup> and will be due at the beginning of lecture on March 9<sup>th</sup>. The exam will consist of 3-5 essay questions, of which you will be asked to answer two. Taken together, your essays should total 8-10 pages in length (double-spaced, 12-point font).

*Research paper (20%):* A 5-7 page paper will be due in lecture on April 11<sup>th</sup>. Papers must address the topic of *processed food* through an examination of a specific crop or food product of your choosing. What exactly does “processed” food mean? Why is processed food generally cheaper than unprocessed or “fresh” food?

*Final exam (35%):* The final exam will be given on Thursday, May 11<sup>th</sup>, from 8:00 to 11:00 a.m.

### *Please Note:*

- You must complete all four components to receive a passing grade in the course.
- You are responsible for all material in the assigned readings, *whether or not it is covered in lecture*.

## ACADEMIC INTEGRITY

Any test, paper, report or homework submitted under your name is presumed to be your own original work that has not previously been submitted for credit in another course. All words and ideas written by other people must be properly attributed: fully identified as to source and the extent of your use of their work. Cheating, plagiarism and other academic misconduct will result in a failing grade on the assignment, paper, quiz or exam in question and will be reported to Student Judicial Affairs.

## ASSIGNMENT AND EXAM POLICY

The paper, midterm, and any other assignments are due at the *beginning* of lecture on the assigned date. One letter grade will be deducted for each day past the due date that late work is submitted. If you anticipate a non-negotiable scheduling conflict for a paper or exam, let your GSI know as soon as possible in order to make appropriate alternate arrangements.

## ATTENDANCE POLICY

Success in this class depends on regular attendance and participation. Students will be allowed *one* unexcused absence from discussion section.

## OFFICE HOURS

<i>Name</i>	<i>email address</i>	<i>office hours/location</i>
Nathan Sayre	nsayre@berkeley.edu	TuW 2-3; 599 McCone
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## PODCAST AND WEBSITE

Audio of the course lectures will be available *five days after the lectures are given* from: <http://webcast.berkeley.edu/courses>. Please note that technical problems may cause any given lecture to be unavailable in this way. Powerpoint slides from the lectures will be posted to bcourses; in most cases they will be available the night before the lecture.

## READINGS

Readings marked with an asterisk (\*) below are **recommended**. Unmarked readings are **required**. Two readers are available at Vick's Copy (corner of Hearst and Euclid): reader A contains the required readings, reader B contains the recommended readings. All readings are also available through the "Files" tab on the course website, accessible through [bcourses.berkeley.edu](http://bcourses.berkeley.edu).

## ONLINE RESOURCES

Food is in the news every day, and it is a topic of intense activism and debate locally, nationally and internationally. You are encouraged to follow (and participate in) these debates during the semester, whether through visiting local markets, gardens, and organizations; volunteering; or online. Here are some websites that may be of interest:

<a href="http://www.foodfirst.org/en/blog">http://www.foodfirst.org/en/blog</a>	<a href="http://garynabhan.com">garynabhan.com</a>
<a href="http://viacampesina.org/en/worldpoultry.net">http://viacampesina.org/en/worldpoultry.net</a>	<a href="http://bittman.blogs.nytimes.com/">http://bittman.blogs.nytimes.com/</a>
<a href="http://beefmagazine.com">beefmagazine.com</a>	<a href="http://michaelpollan.com">michaelpollan.com</a>
<a href="http://biofuelsdigest.com">biofuelsdigest.com</a>	<a href="http://www.leopold.iastate.edu/pubs">http://www.leopold.iastate.edu/pubs</a>
<a href="http://cornandsoybeandigest.com">cornandsoybeandigest.com</a>	<a href="http://rodaleinstitute.org/">http://rodaleinstitute.org/</a>
	<a href="http://calclimateag.org/">http://calclimateag.org/</a>

## SCHEDULE AND READINGS

\* = *recommended reading*

### I. INTRODUCTION

#### 19 January: Food and Agriculture—a Global Perspective

Marshall Sahlins. 1972. *Stone Age Economics*, pp. 1-14, 32-39.

Marcel Mazoyer and Laurence Roudart. 2006. *A History of World Agriculture*, pp. 9-16, 52-70.

#### 24 January: Pastoralism, Fire and *Grass: A Nation's Battle for Life* (film in lecture)

Stephen J. Pyne. 1995. *World Fire: The Culture of Fire on Earth*, pp. 299-314

Robin S. Reid, Kathleen A. Galvin and Russell S. Kruska. 2008. Global Significance of Extensive Grazing Lands and Pastoral Societies: An Introduction. In *Fragmentation in Semi-Arid and Arid Landscapes: Consequences for Human and Natural Systems*, pp. 1-13.

\*Tim Ingold. 1980. *Hunters, Pastoralists and Ranchers*, pp. 217-228

\*Carl O. Sauer. 1950. Grassland Climax, Fire, and Man. *Journal of Range Management* 3: 16-21.

#### 26 January: Feeding people or “feeding the world”? Why are so many people hungry, and what can we do about it?

Vaclav Smil. 2000. Introduction. *Feeding the World: A Challenge for the Twenty-First Century*, pp. ix-xxviii.

Raj Patel. 2008. *Stuffed and Starved: the Hidden Battle for the World Food System*, pp. 1-19.

### II. THEORETICAL FOUNDATIONS

#### 31 January: Malthus and “the Dismal Science”

Thomas Robert Malthus. 1798. *Essay on the Principle of Population*. Preface, chs. 1-3, 5-7, & 16, plus selections from chs. 11 and 14 of the revised edition of 1803.

\*John Bellamy Foster. 2002. Malthus's essay on population at age 200. From *Ecology Against Capitalism*, pp. 137-153.

#### 2 February: The Market as the Solution

Adam Smith. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Book 1, chapters 4-8.

#### 7 February: The Market as the Problem

Karl Marx. 1867. *Capital*, vol. 1, ch. 15, section 10: “Large-scale industry and agriculture”; ch. 25, sections 3 and 4: “The Progressive production of a relative surplus

population or industrial reserve army” and “Different forms of existence of the relative surplus population. The general law of capitalist accumulation.”

### III. UNDERSTANDING U.S. AGRICULTURE

#### 9 February: The Columbian Exchange

Alfred Crosby. 2004. *Ecological Imperialism: The Biological Expansion of Europe 900-1900*, New Edition, pp. 2-7.

Judith Carney. 2001. *Black Rice: The African Origins of Rice Cultivation in the Americas*, pp. 1-8, 107-141.

#### 14 February: Commodifying Space and Time

William Cronon. 1991. *Nature's Metropolis: Chicago and the Great West*, pp. 97-147.

\*Michael Pollan. 2006. The Farm. In *The Omnivore's Dilemma: A Natural History of Four Meals*, pp. 32-56.

#### 16 February: Environmental Crisis and the Agricultural Welfare State

Donald Worster. 1979. *Dust Bowl: the Southern Plains in the 1930s*, pp. 9-43, 80-97.

#### 21 February: Hybrid Seeds and Plant Biotechnology

Jack Kloppenburg. 1988 (2<sup>nd</sup> edition 2005). *First the Seed: the Political Economy of Plant Biotechnology*, pp. 50-65, 91-129.

#### 23 February: California—Exception or Rule?

Richard Walker. 2004. *The Conquest of Bread: 150 Years of Agribusiness in California*, pp. 19-47, 66-75.

#### 28 February: Chemicals

Wheeler McMillen. 1939. Chemurgy: Utilization of Farm Products in the American Way. *Industrial & Engineering Chemistry* 31: 540-548.

Adam Romero. 2015. Commercializing chemical warfare: citrus, cyanide, and an endless war. *Agriculture and Human Values*. DOI 10.1007/s10460-015-9591-1.

Adam Romero. 2016. “From Oil Well to Farm”: Industrial Waste, Shell Oil, and the Petrochemical Turn (1927-1947). *Agricultural History* 90: 70-93

#### 2 March: Industrial Animal Production

Jimmy M. Skaggs. 1986. *Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983*, pp. 90-129.

Maureen Ogle. 2013. In *Meat We Trust*, pp. 123-152.

2 MARCH: TAKE HOME MIDTERM EXAM HANDED OUT AT THE END OF LECTURE

## IV. GLOBAL FOOD AND POPULATION

### 7 March: Colonial Famines and the Making of the Third World

Mike Davis. 2002. *Late Victorian Holocausts*, pp. 25-59, 119-121.

\*Michael F. Lofchie. 1975. Political and Economic Origins of African Hunger. *Journal of Modern African Studies* 13: 551-567.

### 9 MARCH: MIDTERM EXAM DUE AT THE BEGINNING OF LECTURE

### 9 March: Neo-Malthusianism and the Cold War

Thomas Robertson. 2012. *The Malthusian Moment*, pp. 85-103.

\*Massimo Livi-Bacci. 2012. *A Concise History of World Population* (5<sup>th</sup> ed.), pp. 114-140.

### 14 March: Fertilizer and the Green Revolution

Marcel Mazoyer and Laurence Roudart. 2006. *A History of World Agriculture*, pp. 375-381, 450-451.

John Bellamy Foster and Fred Magdoff. 2000. Liebig, Marx, and the Depletion of Soil Fertility: Relevance for Today's Agriculture. From *Ecology Against Capitalism*, pp. 154-169.

\*Carl Sauer. Letter to Rockefeller Foundation, June 13, 1952.

\*Thomas Hager. 2008. *The Alchemy of Air*, pp. 77-100.

\*R.E. Evenson and D. Gollin. 2003. Assessing the impact of the Green Revolution, 1960 to 2000. *Science* 300: 758-762.

### 16 March: *Darwin's Nightmare* (film in lecture)

Eric Holt-Gimenez. 2011. Food Security, Food Justice, or Food Sovereignty? Crises, Food Movements, and Regime Change. In *Cultivating Food Justice*, pp. 309-330.

## V. PROBLEMS AND CRITIQUES OF THE FOOD SYSTEM

### 21 March: Agrarian Critiques of Modern Agriculture

Wendell Berry. 1977. *The Unsettling of America: Culture and Agriculture*, pp. 39-48.

Catherine McNicol Stock. 1996. *Rural Radicals: Righteous Rage in the American Grain*, pp. 143-176.

\*David Danbom. 1991. Romantic agrarianism in twentieth century America. *Agricultural History* 65.4: 1-12.

\*Julie Guthman. 2004. *Agrarian Dreams: The Paradox of Organic Farming in California*, pp. 1-22, 172-185.

### **23 March: Obesity and Hunger**

Julie Guthman. 2011. *Weighing In: Obesity, food justice, and the limits of capitalism*, pp. 91-123.

\*Michael Moss. 2013. The Extraordinary Science of Addictive Junk Food. *New York Times Magazine* February 20. (Adapted from *Salt Sugar Fat: How the Food Giants Have Hooked Us.*)

\*Sandy Brown and Christy Getz. 2011. Farmworker food insecurity and the production of hunger in California. In *Cultivating Food Justice*, pp. 121-146.

### **4 April: Agriculture and Climate Change**

Stephen J. Pyne. 1995. *World Fire: The Culture of Fire on Earth*, pp. 315-327.

David Biello. 2009. Farmed out: how will climate change affect global food supplies? *Scientific American*, 30 September 2009.

\*IPCC 5<sup>th</sup> Assessment Report. 2013. Working Group II Report, Part A, Section 7: Food security and food production systems, Executive Summary and Sections 7.1, 7.2, and 7.4, pp. 488-494 and 505-513.

\*David Tilman et al. 2009. Beneficial biofuels—the food, energy, and environment trilemma. *Science* 325: 270-271.

### **6 April: Corporate Consolidation and *Food, Inc.* (film in lecture)**

Wenonah Hauter. 2012. *Foodopoly: The Battle Over the Future of Food and Farming in America*, pp. 62-77.

## **11 APRIL: PAPERS DUE AT THE BEGINNING OF LECTURE**

### **11 April: Race and Labor**

Kari Marie Norgaard, Ron Reed and Carolina Van Horn. 2011. A Continuing Legacy: Institutional Racism, Hunger, and Nutritional Justice on the Klamath. In *Cultivating Food Justice*, pp. 23-46.

Saru Jayaraman. 2014. Shelved: How wages and working conditions for California's food retail workers have declined as the industry has thrived. UC-Berkeley Labor Center Report, pp. 1-16.

\*Nathan McClintock. 2011. From Industrial Garden to Food Desert: Demarcated devaluation in the flatlands of Oakland, California. In *Cultivating Food Justice*, pp. 89-120.

### **13 April: Dangerous Mutations**

Laura B. DeLind and Philip H. Howard. 2008. Safe at any scale? Food scares, food regulation, and scaled alternatives. *Agriculture and Human Values* 25: 301-317.

Rob Wallace. 2016. Did Neoliberalizing West African Forests Produce a New Niche for Ebola? From *Big Farms Make Big Flu*, pp. 324-335.

\*Mary J. Gilchrist, Christina Greko, David B. Wallings, George W. Beran, David G. Riley, and Peter S. Thorne. 2007. The Potential Role of Concentrated Animal

Feeding Operations in Infectious Disease Epidemics and Antibiotic Resistance. *Environmental Health Perspectives* 115: 313-316.

- \*Danny Hakim. 2016. Doubts About the Promised Bounty of Genetically Modified Crops. *The New York Times* 29 October. Available at: <https://www.nytimes.com/2016/10/30/business/gmo-promise-falls-short.html?action=click&contentCollection=Business%20Day&module=RelatedCoverage&region=Marginalia&pgtype=article>
- \*Sylvie Bonny. 2016. Genetically Modified Herbicide-Tolerant Crops, Weeds, and Herbicides: Overview and Impact. *Environmental Management* 57: 31-48.

## VI. WHAT IS TO BE DONE?

### 18 April: Encourage Local/Urban Agriculture

- Jack Kloppenburg, Jr., John Hendrickson and G. W. Stevenson. 1996. Coming in to the Foodshed. *Agriculture and Human Values* 13: 33-42.
- Matthew J. Mariola. 2008. The local industrial complex? Questioning the link between local foods and energy use. *Agriculture and Human Values* 25: 193-196.
- \*Nathan McClintock. 2010. Why farm the city? Theorizing urban agriculture through a lens of metabolic rift. *Cambridge Journal of Regions, Economy, and Society* 3: 191-207.

### 20 April: Encourage Certified/Organic Agriculture

- Sally Eden. 2011. The Politics of certification: consumer knowledge, power, and global governance in ecolabeling. In *Global Political Ecology*, pp. 169-184.
- \*Wenonah Hauter. 2012. *Foodopoly: The Battle Over the Future of Food and Farming in America*, pp. 98-115.

### 25 April: Reform Agricultural Research and Policy

- Marcia Ishii-Eiteman. 2009. Food sovereignty and the International Assessment of Agricultural Knowledge, Science and Technology for Development. *Journal of Peasant Studies* 36: 689-700.
- Geoff Tansey. 2013. Food and thriving people: paradigm shifts for fair and sustainable food systems. *Food and Energy Security* doi: 10.1002/fes3.22.
- \*Julie Guthman. 2011. Excess consumption or over-production? US farm policy, global warming, and the bizarre attribution of obesity. In *Global Political Ecology*, pp. 51-66.

### 27 April: Strengthen Political and Economic Democracy

- Wenonah Hauter. 2012. *Foodopoly: The Battle Over the Future of Food and Farming in America*, pp. 279-310.
- Amartya Sen. 1994. Population: Delusion or Reality. *New York Review of Books* 41.