

3.4 Sustainable Agriculture and Sustainable Food Systems

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Introduction: Sustainable Agriculture and Sustainable Food Systems

UNIT OVERVIEW

*This unit draws on information presented in Units 3.1–3.3 to help students understand efforts to promote greater sustainability in U.S. food and agriculture systems. The first lecture presents a short history of efforts resisting agriculture’s modernization, a process that has been driven by increasingly capitalist relationships and the application of new technologies in agriculture. The lecture summarizes early U.S. agrarian populism and efforts to resist the “scientization” of agriculture through the authority of expert knowledge associated with the Land Grant University complex. It then presents the origins of the organic agriculture movement, and describes the impact that Rachel Carson’s *Silent Spring* had on society and public policy. The resurgence of U.S. agrarian populism offered by Jim Hightower and Wendell Berry is then covered. The first lecture concludes with an introduction to the concept of “sustainability” in the literature and public discourse.*

The second lecture reviews some of the current initiatives to promote alternative visions of the U.S. food and agriculture system. It first explains various definitions and dimensions of “agricultural sustainability,” and explores the problems associated with this term. Students will be exposed to the criticism of the way that proponents of “sustainable agriculture” have tended to limit discussions of this issue to farms and farmers, ignoring the broader social context of the food system of which the farm is one part. The lecture then introduces the concept of agroecology pioneered by Steve Gliessman and Miguel Altieri, and the application of ecological principles to the design and management of agroecosystems. The definition and requirements of certified organic food production and the growth and development of the “Organic” food industry over the last ten years are then discussed. This section further addresses concerns over the replication of social and environmental problems caused by the introduction of capitalist relations and federal standards to organic production.

The concepts of the “foodshed” and “community food security” are then introduced as examples of how sustainability advocates have both idealized sustainable agriculture as well as actively worked toward localizing food systems and creating more integrated relationships between producers and consumers. The lecture concludes with a discussion of the difficulties and necessity of policy change needed to move toward greater agricultural sustainability.

MODES OF INSTRUCTION

> LECTURES (2 LECTURES, 50 MINUTES EACH)

Two lectures cover the historical populist movements that have attempted to resist the industrialization of agriculture in the U.S., and introduce the contemporary sustainable agriculture movements. References given in the outlines are described in the Resources section.

LEARNING OBJECTIVES

CONCEPTS

- The current food and agriculture system is not inevitable; many people and social movements have been working for decades to promote social justice and resource protection in this system. These efforts contest the direction the food system has taken.
- The outline of U.S. agrarian populism, its influence on U.S. culture, and its limited contemporary purchase
- The importance of knowledge questions in the search for sustainable alternatives
- The history of policy initiatives trying to promote more socially just and environmentally responsible forms of agriculture in the U.S., and the challenges facing any effort to promote sustainability at the national level
- The usefulness and limitations of applying the term “sustainability” to agrofood systems
- The value, complexity, and limitations of the agroecological paradigm
- The growth of organic food production and the role that U.S. government regulations have played in creating opportunities for organic agriculture that betray the original ideals of the organic farming movement
- The “third way” initiatives in promoting ecologically rational use of agrochemicals in conventional systems
- The different efforts to “localize” the food system and the role they play in promoting sustainability

Lecture 1 Outline: A Brief History of Resistance to the “Modernization” of Agriculture

for the instructor and student

A. The Current Food System Is Not Inevitable and Reflects Dominant Social Values — Alternatives Will Need to Be Rooted in the Expression of Alternative Values (see Thompson 1997)

1. The food system in the U.S. is an extreme example of industrialized agriculture (see Unit 3.1)
 - a) The scale of modern U.S. agriculture
 - b) The concentration of ownership in modern U.S. agriculture
 - c) The use of high technology and industrial processes in modern agriculture
2. European countries are farther ahead of the U.S. in developing alternatives to industrial agriculture for a variety of reasons
 - a) European Union (EU) is less export dependent. Europe exports more processed foods and the U.S. more raw agricultural commodities. The U.S. uses proportionally more land to export the same value of goods
 - b) European cultures place more value on locally and regionally produced, culturally specific products (i.e., food is more closely tied with specific cultures and traditions)
 - c) Such social values are reflected in agricultural public policies that counter trends in the industrialization of the food system
 - d) The U.S. by contrast has placed more value on convenience and uniformity of foods
 - e) In the U.S., the need for alternatives is not recognized due to a limited understanding of the food system
 - f) The European subsidy policies appear to be more effective in targeting the money to farmers, including small farmers
 - g) Also, various European government policies favor organic agriculture
 - h) Minimal financial assistance for the adoption of conservation farming practices in the U.S.
3. For more than a century critics have protested problematic trends in U.S. agriculture mentioned in previous lectures
 - a) What kind of food system would we have today if their advice had been heeded?
 - b) Imagination is necessary to create alternatives. You cannot create a food system that you cannot imagine.
 - c) Values other than capitalism and profit will need to be injected into discussions and decisions about agriculture and food to achieve any viable alternatives

B. Early U.S. Agrarian Populism (see Danbom 1997; McConnell 1959)

1. Major periods of struggle: 1866–1890; 1920s–1930s
 - a) Common theme of two periods: Efforts to protect small, independent farmers from predatory practices of capitalism
2. First period took place as capital from the Eastern seaboard began to dictate economic choices to homestead small holders in the Upper Midwest
 - a) Issues included transportation, economic concentration
 - b) Agrarian populist movements that grew out of this resistance
 - i. Grange network: Served as local forums for farmers to meet and discuss cooperative action for the common good of local agriculture

- ii. Farmers Alliance: A political effort to promote farmer-owned cooperatives and policies that supported them
 - iii. Populist Party: A political party that ran candidates; it had a vision of agriculture more in line with Jeffersonian democracy, and resisted the political power of railroads and powerful corporations
3. Second period: Agricultural depression foreshadowed national depression
 - a) New Deal responses included: alternative, communal farms; price supports; acreage reduction programs
 - b) Soil Conservation Service (now Natural Resources Conservation Service, NRCS) grew out of this era also
 4. Today: Is agrarian populism possible with the abolishment of subsistence and small-scale farming?
 - a) Solutions must include cooperative action, but with <2% of the population on farms, it must include more than farmers

C. Resistance to the “Scientization” of U.S. Agriculture (see chapter 2 in Hassanein 1999)

1. Historically, farmers have been the source and guardians of knowledge about agriculture, although this has recently changed
2. The development of the land grant system, experiment station, and agricultural extension system with a technological and production-centered research agenda
 - a) More scientific methods were brought to bear in agriculture, but with them specialized technologies and practices that marginalized farmers. Their “unscientific” knowledge and lack of financial resources left them in an inferior economic and political position.
 - b) Supporters of the land grant system popularized the notion of farmers as stubborn, ignorant, and foolish, “unscientific.” This notion took hold in the popular and political imagination.
 - c) Most agricultural scientists during the middle part of the 20th century saw their work as unquestionably good, advancing the frontiers of modern society. They were by and large blind to the negative impacts of their work.
3. There were three responses by farmers to this development
 - a) Following the program proposed by the land grant complex: Those who had access to land, capital, and technology were able to grow and outcompete their neighbors, often buying them out in the process
 - b) A second group has rejected the entire land-grant/cooperative extension project, creating an alternative knowledge base for agriculture. The organic farming movement is an example of this (see Vos 2000).
 - c) A third approach is that of selectively adopting land-grant/cooperative extension advice, and perhaps working to make this system more responsive to the contemporary needs of growers
4. Criticism of the land grant complex
 - a) What are the worldview assumptions underlying modern agricultural science? Emphasis on technology where existing relationships of political and economic power are not questioned.
 - i. Example: The issue of world hunger is often understood solely as a problem of underproduction and not maldistribution of an already overabundant food supply
 - b) Whose interests has public agricultural science served?
 - i. It has repeatedly served the financial well being of those with the most capital

D. Early Organic Movement (see Vos 2000)

1. In England, Lady Eve Balfour and Sir Albert Howard were early leaders; in the U.S., J.I. Rodale along with Rodale Press
2. They were critics of the industrialization of agriculture, arguing that soil health, food quality, and human health were integrally related
3. Their ideas were fused with a more general critique of agriculture and society by the counter-culture movement during the 1960s and 1970s to create the organic farming movement

E. *Silent Spring* and Widespread Calls for Change

1. Its thesis: Massive, ignorant, needless poisoning of the biosphere
2. Why was *Silent Spring* so powerful?
 - a) It was an irrefutable critique of the chemical paradigm in agriculture
 - b) It was an effective critique of the entire enterprise of modernization and better living through technology
3. Social and political impacts of *Silent Spring*
 - a) People began to question the role of science and technology in agriculture and created a popular concern about the the environmental and human health risks associated with many modern technologies
 - b) EPA was created, in part to provide a more objective agency for evaluating pesticide impacts
 - c) Increased public funding and support for integrated pest management (IPM)
4. Fixed the problems of modern agriculture in the popular imagination. Created political space for alternatives.

F. Critics in the 1970s (see Berry 1977)

1. Jim Hightower and *Hard Tomatoes Hard Times*: Calling for public accountability for public universities and institutions
2. Wendell Berry: A contemporary form of agrarian populism
3. On the margins, a few critics call for land reform in the U.S., especially associated with publicly funded irrigation works, but these arguments never really find much credence in Washington D.C.
4. *A Time to Choose*: The Bergman (President Carter's Secretary of Agriculture) report on problems in American agriculture

G. Alternative Agriculture and the Development of the Concept of Sustainability

1. 1989: The National Research Council publishes *Alternative Agriculture*
 - a) This was a surprising critique of the model agricultural paradigm
 - b) The report was controversial for its message and method
2. The Brundtland Commission of the UN begins to popularize the notion of sustainability
 - a) This UN commission laid the foundation for the 1992 Rio conference on sustainable development and brought this term into general use
 - b) As a result, the term "sustainable agriculture" gains popularity
 - c) "Sustainability" is a powerful, yet almost undefinable term

Lecture 2 Outline: Imagining Alternatives

A. Problematizing the Concept of Sustainable Agriculture: What Does Agricultural Sustainability Mean? What Does It Look Like? (see Allen and Sachs, 1991; www.sarep.ucdavis.edu/concept.htm)

1. Common conceptions of sustainable agriculture and their limitations
 - a) Exclusively production oriented, agronomic in nature and farm-centric in focus
 - b) The problems are inaccurately framed as only technical problems and thus requiring only technological solutions
 - c) Fails to recognize the influence of social institutions on the soundness of farming practices and the food system
 - d) Fails to equally recognize both the social and environmental problems resulting from the dominant agricultural model
2. Questioning objectives of sustainable agriculture: “What is it that we want to sustain, or change?”
 - a) Whose needs should be emphasized?
 - b) Which of their needs should be prioritized?
 - i. Consumers and cheap food prices?
 - ii. Environmental quality?
 - iii. Fair prices to growers?
 - iv. Low pesticide residues in foods?
 - v. Workers: Wages, working conditions, or year-round employment?
3. Sustained over what time frame?
 - a) Long-term versus short-term planning
4. What scale does this term get used at?
 - a) Field?
 - b) Farm?
 - c) Watershed?
 - d) Region?
 - e) Nation?
 - g) Globe?
 - h) The unit of analysis largely determines what needs to be sustained
5. Comprehensive definitions of agricultural sustainability
 - a) Many advocates for sustainable agriculture recognize the need to integrate at least the following indicators: ecological, economic, and social (see www.sarep.ucdavis.edu/concept.htm)
 - b) Environmental quality
 - i. How do we define “environmental quality”?
 - c) Social equity
 - i. How do we define social justice?
 - d) Human health
 - i. How do we define human health?
 - e) Economic viability of small farmers
 - i. How do we define economic viability of small farmers?
 - f) Life quality of rural agricultural communities
 - i. How do we define life quality of rural agricultural communities?
 - g) What we define as goals in sustainable agriculture will influence the means and outcomes

B. Agroecology: Altieri and Gliessman (see www.cnr.berkeley.edu/~agroeco3/)

1. Agroecology defined: Applying the principles of ecology to agricultural ecosystems
2. Altieri defines agroecology as: A scientific discipline that uses ecological theory to study, design, manage, and evaluate agricultural systems that are productive but also resource conserving
3. Strong emphasis on enhancing biological diversity of both the soil ecosystem and terrestrial plant associations in and around agricultural production systems
4. Advantages
 - a) Looks at farms as agroecosystems that are subject to human disturbances
 - b) Encourages returning more autonomy to the farmer through farmer as expert
 - c) Emphasizes understanding, managing, and enhancing ecological processes for soil fertility and pest management in order to reduce reliance on costly and damaging external inputs
5. Problems
 - a) How big is the system? How big an agroecosystem can be measured or managed?
 - b) What happens if the farm is ecologically sustainable, but not commercially viable?

C. Organic Agriculture

1. Organic agriculture today (see www.ams.usda.gov/nop/)
 - a) Defined: A system of agriculture that encourages healthy soil and crops through such practices as nutrient and organic matter recycling, crop rotations, proper tillage, and the strict avoidance of synthetic fertilizers and pesticides for at least three years prior to organic certification
2. Organic agriculture is currently the fastest-growing sector of the food market
 - a) Compounded annual growth (CAG) of 22.74% over last ten years
 - b) Now ~\$9 billion/year industry world wide
 - c) By 2005, sales are expected to reach nearly \$20 billion
3. The development of the organic movement and the National Organic Standards (see Vos 2000)
 - a) The rationale behind organic certification: To assure consumers that food has been produced in accordance with a specific set of conservation farming practices
 - b) The rationale behind the national organic standards: To make the certification standards for export/import agriculture more uniform
4. Shortcomings of organic production and criticisms of the national organic standards (see Pollan 2001)
 - a) Production practices of most organic growers fall far short of the agroecological and the organic ideal (see Guthman 2000)
 - i. Off-farm inputs: Chilean nitrate, guanos, mined materials
 - ii. Energy use: Organic agriculture does not necessarily use less energy, and may in fact use more
 - iii. Weed control measures: Relies heavily on poorly paid hand labor. Which method is more sustainable?
 - b) Who serves to benefit most from the National Organic Program (NOP): Food processors?
 - c) NOP maintains less stringent standards than previous third-party certifying agencies
 - d) NOP places small growers at an economic disadvantage by requiring practices that require expensive equipment
 - i. Example: Compost production requirements
 - e) The effectiveness of the National Organic Standards Board as an advisory council for USDA remains questionable
5. The “organic industrial complex”: The replication of industrial model of agriculture in organics (see Buck et al. 1997)
 - a) The organic commodity chain is identical to that of conventional agriculture

D. Alternative Agriculture: A Third Way? (see Swezey and Broom 2000)

1. Integrated Pest Management and “agricultural partnerships”: Initiatives to develop management systems for industrial agriculture that do not prohibit the use of agrochemical inputs. Systems are based on agroecological principles and the gathering of appropriate local knowledge of a farming system.
2. Agricultural partnerships are based on a critique of the conventional extension system, which tends to treat growers as passive recipients of knowledge. Influenced by the “farmer-to-farmer” approach to knowledge generation practiced in the developing world.
3. In California these partnerships have reduced the environmental impact of agriculture, and show genuine promise of influencing a large number of growers in some cropping systems
4. Shortcomings of approach: Does not raise questions about the social problems resulting from the current organization of the food and agriculture system

E. Re-localizing a Food System (see Clancy 1997; Kloppenburg et al. 1996)

1. Strategic choices: Sustainability advocates balancing their interest in improving the environmental performance of agriculture with other problems in the food system
2. “Localizing” the food system: Connecting local growers with local eaters
 - a) Promoted as a way to reduce hunger and enhance the economic viability of smaller farms that adopt conservation farming practices
3. Criticisms of the modern food system (see Clancy 1997)
 - a) The modern food system as a “dis-integrated” food system
 - i. Consumers have lost a relationship with the production of their foods
 - ii. Growers have lost contact with the eaters that consume the food they grow
 - iii. There are enormous hidden costs associated with the global food system and cheap food
4. Efforts to promote local food systems through a more agriculturally literate society
 - a) Local food initiatives (see www.caff.org)
 - b) Supportive institutions that can facilitate grower-eater relationships mediated by values other than cheap food and markets
 - i. Examples: Food policy councils, which help institutions and individuals recognize the advantages of buying local foods, and facilitate interactions with farmers
 - c) Policies in support of a more integrated food system
 - i. Examples: Farm-to-school salad bars, which allow local growers to sell to supportive institutions
5. “The Foodshed” as an organizing principle for local action (see www.foodshed.wisc.edu). Or a “foodbelt”: A greenbelt around an urban area designated for growing foods for local consumption (which is what Europe has done for centuries, simply because it makes sense).
 - a) Questions posed
 - i. Where does our food come from?
 - ii. How is it produced?
 - iii. Does the production of the food I consume enhance or maintain the health of surrounding social and ecological communities?
6. The emergence of the community food security movement (see www.foodsecurity.org)
 - a) Fundamental assumptions: That all people have a right to access local, nutritious, culturally appropriate, non-emergency food
 - b) Links anti-hunger efforts with sustainable agriculture, economic development, and social justice advocacy

F. Policy Initiatives (see Youngberg et al. 1993; Marshall 2000)

1. Large-scale economic reforms that advocates have not been able to figure out how to implement in the U.S.
 - a) Land reform: Making small-scale production possible for those without access to large amounts of capital
 - b) Market reform: Preventing large growers, large manufacturers, and intermediaries from taking advantage of small-scale producers
2. Sustainability at a national scale: Making policies serve this vision. Identify what some of those policies might look like?
 - a) Greater enforced restrictions on the domestic and international use of pesticides and synthetic fertilizers
 - b) Ban on the use of GMOs until long-term studies provide conclusive evidence on environmental quality and human health risks
 - c) Legislation leading to the eventual elimination of all toxic pesticides
 - d) Increased federal funding for research on organic and sustainable soil fertility and pest management practices
 - e) Increased federal funding for research on the development of economically sustainable regional food systems
 - f) Increased funding for regional and local food security initiatives
 - g) Increased funding for extension work in training farmers in alternative production practices
 - h) Increased access to low-interest credit for farmers to use in transitioning from conventional agriculture to certified organic production practices
 - i) Anti-trust legislation discouraging the concentration of ownership in the food system
 - j) Federal small farm subsidies to increase the adoption of conservation farming practices
 - k) Initiate program to assess the true cost of socially just and environmentally sound production practices: “True cost accounting”
 - l) Identify actors within the food system responsible for the externalized costs of production (e.g., pesticide manufactures, farmers)
 - m) Internalize the true costs of production by readjusting price structure of agricultural products to better represent actual costs of production
3. The U.S. Farm Bill
 - a) The influence of the U.S. Farm Bill in shaping U.S. agricultural policy
 - b) Recent conservation farming policies and language in the U.S. Farm Bill
 - c) Critical perspectives on “agricultural sustainability” in the U.S. Farm Bill
4. Obstacles to these initiatives
 - a) Political forces are deeply invested in the current agricultural model
 - b) The cheap food dilemma
5. Local policies and initiatives: Sometimes local groups can effect small-scale change. Advocates still need to engage national policy, but there are some opportunities at the local level.
 - a) Land use policy: Designating food belts
 - b) Directing public institutions to buy from small or local sources

G. Summary and Conclusion: How Do We Promote Sustainability in the Agriculture and Food System?

1. To be effective, any effort has to understand the complexities of agriculture: It is framed by economic, social, and biological processes. All three need to be taken into account.
2. Effective social change generally includes oppositional and alternative efforts: Evolving reforms and promoting a revolutionary vision at the same time
3. Modern agriculture has been shaped directly by the advance of capitalist social relations and the application of science and technology to production practices. Behind these forces are a whole range of social forces. Policy reform is important, but ultimately, addressing these broader forces must be part of efforts to promote a more sustainable agriculture and food system.

Resources

SUGGESTED READINGS FOR STUDENTS (DESCRIBED BELOW)

- Clancy. 1997.
- Danbom. 1997.
- Kloppenburg et al. 1996.
- Pollan. 2001.

PRINT RESOURCES

Allen, Patricia. 1993. *Food for the Future: Conditions and Contradictions of Sustainability*. New York: Wiley and Sons.

Challenged definitions of sustainable agriculture that did not incorporate social issues, such as justice, gender, ethnicity, or class. If advocates do not heighten their awareness of the social forces pressing on conventional agriculture, they run the risk of reproducing the same social problems in alternative agriculture. This book had a significant impact on academic thinking in the sustainable agriculture movement. The chapter by Allen and Sachs is particularly important and influential.

Allen, Patricia, and Carolyn Sachs. 1991. What Do We Want to Sustain? Developing a Comprehensive Vision of Sustainable Agriculture. Sustainability in the Balance, Issue Paper No. 2. Santa Cruz, CA: Center for Agroecology & Sustainable Food Systems, UC Santa Cruz. Available at www.ucsc.edu/casfs, or from CASFS.

A critique of definitions of sustainable agriculture that are limited only to what happens on the farm. Challenges its readers to reformulate definitions of sustainable agriculture to include gender, race, class, and issues in society at large. More appropriate for lower-division students than Allen 1993 (see above).

Allen, Patricia, and Martin Kovach. 2000. The capitalist composition of organic: The potential of markets in fulfilling the promise of organic agriculture. *Agriculture and Human Values* 17:221-232.

Explores the problems and possibilities associated with the increasing demand for organic agriculture.

Berry, Wendell. 1977. *The Unsettling of America: Culture & Agriculture*. San Francisco: Sierra Club Books.

A classic in contemporary agrarian philosophy written in an accessible style. Berry critiques the dominant industrial agriculture paradigm with his common sense prose, exposing the social, economic and ecological damage it caused. For this course, chapters 3, 4, and 9 are most appropriate. "The Ecological Crisis as a Crisis of Agriculture" describes the way conservationists and capitalists both objectify land and split it off from human culture. "The Agricultural Crisis as a Crisis of Culture" describes the social implications of a culture's alienation from the soil. "Margins" relates several stories of farmers who are intentionally creating alternatives.

Bosso, Christopher J. 1987. *Pesticides and Politics: The Life Cycle of a Public Issue*. Pittsburgh: University of Pittsburgh. Chapter 2, The Pesticides Paradigm, pages 21-45, and chapter 4, The Apotheosis of Pesticides, 61-79.

This book describes the enduring impact Silent Spring had on U.S. agriculture and pesticide policy.

Buck, Daniel, Christina Getz, and Julie Guthman. 1997. From farm to table: The organic vegetable commodity chain of northern California. *Sociologia Ruralis* 37 (1):3-20.

Describes the role that organic certification has had in shaping organic agricultural production and how the distribution of this produce has begun to mimic that of the conventional food system. Places these developments in the broader framework of agrarian political economy.

Carson, Rachel. 1962. *Silent Spring*. New York: Houghton Mifflin Co.

This book probably did more to instigate the environmental movement of the 1960s than any other. Unintentionally, it appears to have contributed to the alienation of the U.S. public from agricultural issues. Chapters 1 and 2 provide an overview of the chemical agriculture mindset, and chapters 3 and 4 introduce toxic agrochemicals and their environmental impacts. Chapter 17 describes alternative trajectories for human-environment relationships.

Clancy, Kate. 1997. Reconnecting farmers and citizens in the food system. In *Visions of American Agriculture*, W. Lockeretz, ed. Ames: Iowa State University Press.

Discusses the major factors that have weakened the links between farmers and the rest of the U.S. population. Clancy then provides criteria that must be met for a more integrated food system, including a more agriculturally literate society, local food security, and supportive institutions and policies. An ideal chapter for a beginning discussion of what needs to happen off the farm to promote social sustainability.

Danbom, David. 1997. Past visions of American agriculture. In *Visions of American Agriculture*, W. Lockeretz, ed. Ames, Iowa: Iowa State University Press.

Introduces the history of conflicting views of U.S. agriculture: Agriculture as enterprise vs. agriculture as social enterprise. Provides a helpful introduction to the history of American agrarian populism.

Guthman, Julie. 2000. Raising organic: Grower practices in California. *Agriculture and Human Values* 17:257-266.

This article is based on Julie Guthman's field work investigating the actual practices of organic growers in California. She discovered that organic farms usually comply with organic regulations, but still fall short of the agroecological ideal, with larger farms and mixed organic/conventional farms least likely to fulfill this ideal. Describes the way in which organic certification has helped the organic farming sector grow and become more like conventional agriculture.

Hassanein, Neva. 1999. *Changing the Way America Farms: Knowledge and Community in the Sustainable Agriculture Movement*. Lincoln, Nebraska: University of Nebraska Press.

Describes the emergence of alternative networks of agricultural knowledge among dairy farmers in Wisconsin, with a special emphasis on issues of gender. Chapter 2, "Knowledge questions in the sustainable agriculture movement," provides an excellent overview of how farmers resisted the hegemony of Land Grant University scientists.

Howard, Sir Albert. 1947. *The Soil and Health*. New York: Schocken Books.

This is an early classic in the organic movement, presenting many of the underlying ecological and philosophical principles still relevant today.

Kloppenborg, Jack, John Hendrickson, and George W. Stevenson. 1996. Coming into the foodshed. *Agriculture and Human Values* 13 (3):33-42.

Explores the conceptual and practical opportunities of organizing agricultural production around "foodsheds." Just as bioregionalists propose watersheds as an organizing framework for activism, so agricultural activists are working for local economies of food. Students often respond with enthusiasm to the imaginary this article proposes.

Marshall, Andrew. 2000. Sustaining sustainable agriculture: The rise and fall of the Fund for Rural America. *Agriculture and Human Values* 17:267-277.

Marshall details the challenges facing any policy initiative in support of sustainable alternatives, and the political and economic obstacles such an initiative must overcome. Helpful complement to Youngberg et al.

National Research Council. 1989. *Alternative Agriculture*. Washington, DC: National Academy Press.

The highest-ranking report up to that time to legitimize alternatives to the high-input, high-chemical-use model.

Pollan, Michael. 2001. Behind the Organic-Industrial Complex. *New York Times Magazine* May 13. www.nytimes.com/2001/05/13/magazine/13ORGANIC.html

This investigative journalism piece reached a wide audience, and brought the disturbing news that the organic ideal in the minds of many alternative consumers is very far from the reality of the contemporary organic food processing and distribution system. Useful to read side by side with the Kloppenburg et al. article.

Rosset, Peter A., and Miguel A. Altieri. 1997. Agroecology versus input substitution: A fundamental contradiction of sustainable agriculture. *Society and Natural Resources* 10 (3):283-295.

Critiques efforts to make conventional agriculture more sustainable, claiming that only a fully integrated agroecological farming system is truly sustainable.

Swezey, Sean L., and Janet C. Broome. 2000. Growth predicted in biologically integrated and organic farming. *California Agriculture* 54 (4):26-36.

Describes the growing interest in promoting biologically integrated farming systems in California, a “third way” farming system that draws from knowledge gained by organic systems, reducing yet not fully abandoning agrochemical usage. A provocative companion to Rosset and Altieri.

Thompson, Paul B. 1997. *Agrarian values: Their future place in U.S. agriculture*. In *Visions of American Agriculture*, W. Lockeretz, ed. Ames, Iowa: Iowa State University Press.

Thompson develops the two main currents in U.S. agriculture proposed by Danbom (see above), describing the values and ethics inherent in each, and how activists might secure a future for more communitarian ethics in the future of U.S. agriculture.

Vos, Timothy. 2000. Visions of the middle landscape: Organic farming and the politics of nature. *Agriculture and Human Values* 17:245-256.

Youngberg, Garth, Neill Schaller, and Kathleen Merrigan. 1993. The sustainable agriculture policy agenda in the United States: Politics and prospects. In *Food for the Future*, P. Allen, ed. New York: John Wiley.

Reviews the impact and implications of sustainability for agricultural policy making. Describes the difficulty of translating the values and visions of sustainable agriculture into concrete policy, and the tendency for political leaders to adopt the discourse of sustainability yet little more. A useful roadmap for charting a course towards improved policy efforts.

WEB RESOURCES

Agroecology in Action

www.agroeco.org/

Miguel Altieri’s website has several useful summary essays about agroecology and agroecological principles. The section titled “Agroecology and Modern Agriculture” has the essays most relevant to this chapter.

California Sustainable Agriculture Working Group

www.calsawg.org

This is a coalition of California organizations working for sustainable agriculture in this state.

National Campaign for Sustainable Agriculture

www.sustainableagriculture.net/index.htm

The National Campaign for Sustainable Agriculture is an umbrella organization for many local groups working for more sustainable agricultural policies in the U.S.

SAREP: What is Sustainable Agriculture?

www.sarep.ucdavis.edu/concept.htm#Top

Provides a nice overview of the key themes in sustainable agriculture, especially as they relate to California. Presents information on natural resources, production practices, and the social and economic context of sustainability issues.

SAREP: Biologically Integrated Farming Systems

www.sarep.ucdavis.edu/bifs/

A portion of the SAREP web page that introduces one form of agricultural partnerships, Biologically Integrated Farming Systems, and provides additional information on them.

Union of Concerned Scientists

www.ucsusa.org/agriculture/index.html

The Union of Concerned Scientists runs a “Food and Environment” Campaign, whose goal is: To create a food system that encourages innovative and environmentally sustainable ways to produce high-quality, safe and affordable food, while ensuring that citizens have a voice in how their food is grown.

VIDEOS

Goodbye Mrs. Ant. 1992. A BBC-TV production in association with Lionheart Television International, Inc. Northbrook, IL: Coronet Film & Video (58 minutes).

An overview of the ecological impact of agricultural chemicals on the environment, and the Silent Spring-inspired efforts to regulate them. A good review of the popularity of DDT and the scientific enterprise that supported it.

My Father’s Garden. 1995. Miranda Productions Inc.; producer, Abigail Wright; director, Miranda Smith; writer, Nathaniel Kahn (58 minutes).

Weaves together the personal stories of the loss of family farms, the role of chemical pesticides in changing the structure of American agriculture, and Fred Kirschmann’s efforts to make his farm ecologically and economically sustainable. Available from:

www.bullfrogfilms.com

The Living Land. 1998. Foundation for Global Community (27 minutes).

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