

Keith Douglass Warner, *Agroecology in Action: Extending Alternative Agriculture Through Social Networks*

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In *Agroecology in Action*, Keith Douglass Warner describes and analyzes a number of important agroecological partnerships in the United States, with a focus on partnerships in California. The work examines the actors involved in these partnerships, along with the networks formed, the practices espoused, and the successes achieved over the years of their development and existence. The book also provides an account of how a variety of new, ecologically based farming and pest control methods have been developed as a result of farmers, scientists, public agencies, and nongovernmental organizations working together to address the environmental impact of conventional, chemical intensive farming methods.

Warner defines agroecological partnerships as “initia-tives using alternative extension practices at the field scale” (5), highlighting how these partnerships rely heavily on nontraditional modes of generating and sharing knowledge and how the local knowledge of farmers, and considerations for local ecologies, form the backbone of these partnerships. Warner argues that agroecology “must be facilitated by social learning” (3), defined as a process whereby groups of varied stakeholders engage in experiential research and knowledge exchange to protect and enhance shared resources. Agroecological partnerships, and their methods of generating and sharing knowledge, are contrasted with traditional extension practices that have tended to utilize transfer of technology or adoption/diffusion paradigms.

Citing Carson’s *Silent Spring* (1962), Warner sets the stage for examining agroecological partnerships by outlining not only the failures of industrial agriculture but the

influence that *Silent Spring* had on reshaping farming practices and political and scientific institutions. Warner credits Carson for laying the foundation for modern day agroecological partnerships and for inspiring students of the 1960s and 1970s who later went on to develop the sub-disciplines of agroecology and conservation biology.

With this backdrop, Warner utilizes the works of Latour (1987, 1999) and FitzSimmons (2003) in the field of Science and Technology Studies to examine the critique of *Silent Spring* and the dynamics of both agroecology and science in general. As proposed by Latour, and later adapted by FitzSimmons, science can be viewed as a circulatory system, with a beating heart at its center, creating and pumping knowledge through four different loops. These loops represent nature, scientists, end-users, and the public, and are all bound together by scientific knowledge at the center. As Warner points out, *Silent Spring* critiqued the science of its time for only engaging scientists and end-user and neglecting the ecological and social consequences of the scientific knowledge it created and diffused. In contrast, agroecological partnerships, as examined throughout *Agroecology in Action*, repeatedly and consistently attempt to engage many actors in the farming and scientific system to produce appropriate knowledge to reduce environmental harm, manage risk, maintain profits for growers and address public concerns about pollution and pesticides in agriculture.

The bulk of *Agroecology in Action* examines the intricacies of a number of commodity specific agroecological partnerships in California and beyond. These examinations, in turn, lead to analyses of the institutional opportunities and constraints for agroecological partnership development, factors that influence the reduction of pesticide use, the characteristics and roles of actors who participate in partnerships, the various agroecological practices promoted

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through partnership activities, and the configuration of social networks within partnerships.

The final two chapters of the book examine two highly successful partnership initiatives—the Lodi Woodbridge Winegrape Commission and the Wisconsin Healthy Grown potato project—to illustrate a working model of Latour’s circulatory conception of science and to further examine the power that economic incentives, social learning, public perception, and public policy have in shaping alternative agricultural practices. Notably, Warner describes a number of characteristics that made these particular partnerships successful and highlights the significance of their achievements, and the manner in which those achievements were made, under predominant economic, regulatory and cultural constraints. Warner concludes by offering a few policy recommendations aimed at “reforming and re-directing” (227) both the land grant university system and the federal crop subsidy program.

Agroecology in Action has a number of strengths. First, Warner does an excellent job of weaving together accounts of a number of important agroecological partnerships with social science analyses of partnership activities, actors and networks. This approach situates the hands-on work of partnership participants within the broader context of agricultural science and extension activities and Science and Technology Studies.

The stories and partnership histories that Warner documents serve another purpose. They provide a rich history of the development of strands of alternative agriculture since the publication of Carson’s *Silent Spring*. Warner takes readers through the early days of alternative agriculture, highlighting not only the public’s response to *Silent Spring*, but how growers, commodity groups, nongovernmental organizations, universities and government agencies have responded to its criticisms over the years. Within these accounts, Warner also details specific production practices, pest life cycles, and pest monitoring and control methods that all serve to educate the reader about the challenges of growing food and the incredibly sophisticated and innovative approaches being used to reduce pesticide use.

Overall, *Agroecology in Action* is well written, well organized and well researched. The book could be strengthened by including a glossary for the plethora of

organizational, occupational and project related acronyms found throughout the text. However, the book is timely and compliments other works that examine social relations in agriculture such as Hassanein’s *Changing the Way America Farms* (1999) and Bell’s *Farming for Us All* (2004).

Agroecology in Action is appropriate for graduate and upper level undergraduate courses. It is also appropriate for extension professionals and scientists engaged in applied research. Because of the book’s critique of traditional means of generating and extending knowledge within the land grant university system, and the promise conveyed through Warner’s accounts and analyses of a variety of alternative, collaborative, and participatory approaches to creating a more sustainable, ecologically-based agriculture, the book could serve as an inspiration and model for professionals seeking new ways to conduct their work.

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