

Agroecology: Foundations in Agrarian Social Thought and Sociological Theory

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This article examines the origins and impacts of agricultural modernization to reveal the social foundations of agroecology as both scientific discipline and agrarian social movement. The impacts of capitalism on rural societies have provided a focus for social thought and mobilization since the 1800s and so we consider some of the competing discourses that have accompanied the development of industrial agriculture. We also reflect on the emergence of modern environmental concern and how growing preoccupation with the negative impacts of industrialization has prompted radical proposals for the reformulation of longstanding sociological assumptions and approaches to agricultural and rural development.

KEYWORDS *agrarian question, agroecology, constructionism, industrial agriculture, La Via Campesina*

INTRODUCTION

In a recent review, Wezel et al. (2009) claim that “agroecology” refers to “either a scientific discipline, agricultural practice or . . . social movement,” arguing that these varied meanings cause confusion and recommending that “those who publish using this term be explicit in their interpretation” (503). Of course, this assumes that the science of agroecology can be separated from its politics and practice: an idea that we wish to challenge. For us, agroecology has its foundations in agrarian social thought and movements that emerged in opposition to early processes of agricultural industrialization and has developed in an ongoing dialectic between capitalist modernization

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and resistance to it (Sevilla Guzmán and Woodgate 1997). Furthermore, we believe that attempts to define agroecology as an applied science without a social context, without problematizing capitalist relations of production or allying itself with agrarian social movements, will significantly limit its ability to contribute to more sustainable systems of food production, distribution and consumption. For us, agroecology:

promotes the ecological management of biological systems through collective forms of social action, which redirect the course of coevolution between nature and society in order to address the “crisis of modernity.” This is to be achieved by systemic strategies . . . to change [the] modes of human production and consumption that have produced this crisis. Central to such strategies is the local dimension where we encounter endogenous potential encoded within knowledge systems . . . that demonstrate and promote both ecological and cultural diversity. Such diversity should form the starting point of alternative agricultures and the establishment of dynamic yet sustainable rural societies. (Sevilla Guzmán and Woodgate 1997, 93–94)

For research purposes, we distinguish three core dimensions: productive/ecological, socioeconomic, and sociocultural/political. All three dimensions build from critiques of globalized, industrial systems of food and fiber production, distribution and consumption (see Kimbrell [2002] for a collection of critical essays), and seek to contribute to ecologically and culturally appropriate food systems and food sovereignty. This complexity demands a transdisciplinary approach, drawing on insights from the natural and social sciences, the politics of agrarian social thought and action, and the culturally rooted knowledge of farmers. Here, however, we confine our attention to some of the most relevant contributions of sociologists (*sensu lato*) and to identifying key social movements that have arisen in opposition to the industrialization and homogenization of agrarian life. To facilitate this endeavor, Table 1 offers a schematic of our interpretation of the historical pathway of social thought and action that has led to the emergence of contemporary agroecology.

SOCIOLOGY: COMPETING VISIONS OF SOCIETY

In order to understand the origins of sociological thinking, we must consider the changes that created the modern world. These have their roots in the Industrial Revolution and associated enclosure of the commons and mass migration of labor to the cities and the secular ideals of universal liberty and equality proclaimed during the French Revolution. The changes wrought by these two revolutions prompted reflection on their origins and the likely consequences of the emerging modern world order.

TABLE 1 From Narodnism to agroecology

Marx, Marxism, Narodnism, and anarchism (1850–1900)	
Narodnism: “The backward march” “uniting with the people,”	A. Herzen, N. Chernishevsky, P. Lavrov, A. Mikhailov
Classical Anarchism: “mutual support as the motor of history,” “the peasantry as revolutionary agents”	P. Kropotkin, N. Bakunin
Capitalism produces an “irreparable rift in the interdependent process of socioecological metabolism”	K. Marx
Marxism: “differentiation of the peasantry”	V. Lenin, Kautsky
Neo-Narodnism and Heterodox Marxism (1900–1940)	
Vertical cooperation	N. Bukharin
Social agronomy	A. Chayanov
Dependency and underdevelopment (1940–1980)	
Center-periphery/world economy	A. Gunder Frank, I. Wallerstein
Internal colonialism	P. Casanova González, A. Gunder Frank, A. Gorz
Ethnodevelopment	G. Bonfil Batalla, R. Stavenhagen
Peasant studies (1940–1990)	
Moral economy	K. Polanyi, E. P. Thompson
Cultural ecology	E. Wolf, K. Wittfogel, S. Mintz
Marxist neo-Narodnism	T. Shanin
Peasant and indigenous knowledge and technologies (ethnoscience)	A. Palerm, Hernández Xolocotzi
Post-development (1980–present)	
Development and environment as historically produced discourse	A.o Escobar
Co-motion rather than promotion	G. Esteva
Environmental social theory and agroecology (1980)	
Origins of agroecology in Marxist and libertarian social thought.	E. Sevilla Guzmán
Marx’s Ecology (esp. the metabolic rift).	J. B. Foster
Appropriation and substitution of nature	D. Goodman
Coevolution	R. B. Norgaard
Ecological debt	J. Martínez Alier
Food sovereignty	La Via Campesina
New peasantries and the peasants’ response	J. D. van der Ploeg, S. Pérez Vitoria
Historical socioecological transition & agroecological transition	M. González de Molina, S. Gliessman

Since its inception, two key issues have characterized sociological enquiry: how social order is maintained and how social change is generated. With great simplification, we can say that order is maintained by social norms and institutions (*structures*) that define options for human behavior. Social

change, on the other hand, is brought about by social action or *agency*, which can be understood by interpreting how individuals subjectively relate to each other and construct the world around them. While much of sociology can be characterized by divisions related to whether structure or agency or is the focus of analysis, it is important to note that it also shares a common assumption: human society represents an *exceptional* case in nature because humans have developed culture. According to this view, human culture changes more rapidly than nature's biology and thus progress can continue unchecked because, ultimately, all social problems can be resolved through cultural adaptation and technological innovation.

Among his many contributions to sociological thought, Marx pointed out that social structures tend to favor the interests of elite classes—feudal lords or capitalist entrepreneurs, over the interests of the masses—the peasantry or proletariat, thus constraining progress toward more egalitarian societies. For Marx, social change required the active intervention of enlightened social actors in what he termed *class struggle*.

EARLY CONCERNS OVER THE IMPACTS OF CAPITALISM ON NATURE AND RURAL LIFE

An early example of agrarian class struggle was the Peasants' Revolt of 1381, which is often cited as the beginning of the end of feudalism in England while, in the seventeenth century, the Diggers challenged one of the foundational elements of capitalism—private property. “When men take to buying and selling the land . . . they restrain other fellow creatures from seeking nourishment from Mother Earth . . . so that he that had no land was to work for those . . . that called the Land theirs; and thereby some are lifted up into the chair of tyranny and others trod under the footstool of misery, as if the Earth were made for a few and not for all” (Winstanley, 1649, as cited in Berens 1906, 70).

In the nineteenth century, as Britain's industrial revolution gathered pace, agricultural production grew rapidly. Yet, in his text on agricultural chemistry, von Liebig criticized Britain's success, pointing out that yield increases depended on imported nutrients, while none of the organic residues from food consumed in urban centers was recycled to the soil (1862, cited in Foster 2000). Drawing on Liebig's work, Marx developed one of the central concepts of his critique of industrial agriculture. As Britain transitioned from agrarian to industrial society, capitalist agriculture provoked “an irreparable rift in the interdependent process of *socioecological metabolism*” (Marx 1981, 949; emphasis added).

Kautsky's *Agrarian Question* (1899) employs Marx's notion of *metabolic rift* (Foster 2000) in an analysis of the exploitation of the countryside by the cities. The “agrarian question” refers to the debate initiated in the second

half of the nineteenth century between Narodniks and Russian Marxists (see Table 1), following the emancipation of Russian peasants in 1861. The Narodniks viewed the peasants as a revolutionary force that could develop cooperative production utilizing the resources of the old feudal estates. The Narodnik movement involved members of the intelligentsia working with the peasants to constrain the development of capitalist agriculture.

Lenin's 1899 work, *The Development of Capitalism in Russia*, begins with a chapter "The Theoretical Mistakes of the Narodnik Economists" The subsequent chapter, "The Differentiation of the Peasantry," describes how the development of capitalism necessitated the dissolution of the peasantry and the emergence of small-scale entrepreneurs and associated rural working classes (Lenin 1986). The idea that peasant modes of production were doomed was challenged by another Russian commentator, Alexander Chayanov (1989), who developed what he called *social agronomy*—a form of natural resource management based on the social institutions and knowledge of peasant society—and explained how the peasant economy could continue to exist alongside capitalism. Thus, we might consider both the Narodniks and Chayanov as a proto-agroecologists.

THE LIMITS OF AGRICULTURAL MODERNIZATION IN THE TWENTIETH CENTURY AND THE "REDISCOVERY" OF PEASANT STUDIES

Following the death of Lenin in 1924, Stalin had Chayanov sentenced to the labor camps for his anti-revolutionary ideas and set about modernizing Soviet agriculture through forced collectivization: a process met by fierce, but ultimately futile, peasant resistance. Pitirim Sorokin, another fugitive from the Russian Revolution, took up residence in the United States, where together with Zimmerman and Galpin he produced the three-volume *Systematic Source Book in Rural Sociology* (1930–1932). The historical role of rural sociology within the framework of the U.S. Land Grant Colleges was not, however, to defend pre-capitalist agrarian structures, but to foster the creation of an efficient, scientific civilization in the countryside (see Christy and Williamson 1992).

In the second half of the twentieth century, the influence of rural sociology was felt in both the United States and Europe. In the United States, the Farm Population and Rural Life Division was established within the Department of Agriculture and, under the leadership of Galpin, generated sociological understanding of the farm sector in order to influence New Deal policies and ameliorate the worst impacts of industrialization on disadvantaged sectors of the rural economy. In post-War Europe the Common Agricultural Policy, directed chiefly at achieving food self-sufficiency, also included social payments aimed at maintaining vibrant rural communities.

Yet, while agricultural modernization in the North included elements of social support to farming communities, in the South peasants were seen as anachronistic obstacles to development. Inspired by modernization theory, Green Revolution strategies were promoted without any consideration of local cultural or ecological contexts, while their implementation required dependable supplies of inputs and the expansion of global commodity markets and created farmer dependency on both backward and forward linkages.

If modernization theorists viewed underdevelopment as an original condition of “backward peasant farmers,” “dependency theorists” (Table 1) characterized it as an active process generated by structural inequalities between rich and poor nations. For the more radical dependency theorists, such as Gunder Frank and Wallerstein, the greatest winners of development were the industrial nations, which enjoyed cheap food supplies imported from the Global South and expanding markets for their agricultural input industries and commodity trading corporations. While rural development initiatives sought to modernize rural societies, agricultural industrialization also had the effect of robbing people of their identities and negating local knowledge and institutions. Industrial agriculture also degraded soil structure and fertility and eroded agrobiodiversity. In short, capitalist agricultural industrialization represented a new form of colonialism which impoverished everything that did not follow the norms and rules that modernity dictated. These exploitative relations operated within as well as between nations as described by González Casanova (1965) in the concept of *internal colonialism*, which he used to refer to the situation in Mexico in the 1960s. One of the first southern nations to implement Green Revolution technologies, Mexico was also among the first places where peasant technologies and institutions were studied and presented as valid alternatives to industrial agriculture (c.f. Xolocotzi, Table 1).

Some of the most important contributions of peasant studies to contemporary agroecology emanate from the works of Theodor Shanin, which include his researches into the history of the agrarian question and the debate among the orthodox Marxists and Narodniki in nineteenth century Russia. In Latin America in the 1970s and 1980s, the agrarian question was reignited, and a fierce debate ensued between *descampesinistas* who, like Lenin and Kautsky, foresaw the eventual disappearance of the peasantry (*campesinado*) and those who believed that the peasantry could continue to reproduce themselves at the margins of the capitalist economy: the *campesinistas*. Despite the negative impacts of modernization on peasant agriculture and social organization, *campesinistas* such as Angel Palerm held that while peasants might participate in the market economy to generate cash, peasant life is organized through membership of kinship groups and participation in the community, by access to the land, and by reciprocity, rather than the simple logic of capitalism.

The relevance of peasant studies to contemporary agroecology is significant and well summarized in the following short quote from Angel Palerm's last book *Anthropology and Marxism* (1980, 197 [our translation]): "The future of the organization of agricultural production appears to depend on a new technology based on the intelligent management of . . . [natural] resources by means of human labor, utilizing minimal capital, land and fossil energy. This model . . . has its prototype in peasant farming systems." As Palerm suggests, and innumerable studies of peasant communities and their use of natural resources confirm, the sustainability of peasant agriculture depends on distinctive social relationships as well as ecological processes and these relationships and processes differ markedly from those associated with capitalist production. The peasant economy is a 'moral economy' and while peasants may interact with commercial markets, as Polanyi (1944) claimed, the negative impacts of economic incorporation can foster moral indignation and resistance. While ecology and agronomy may reveal important ecological and agronomic features of agricultural sustainability, in order to understand adequately the social relationships that underpin sound agricultural practice and the agrarian social movements that have arisen in defense of the peasant way of life, we need to make recourse to sociology.

THE CRISIS OF MODERNITY AND THE BIRTH OF ENVIRONMENTAL SOCIOLOGY

By the 1960s, disturbing evidence had started to emerge that challenged the predictions of modernization theory and the wisdom of modernization itself. On the one hand, far from trickling down to the poorest members of society, the wealth created by capitalist industrialization was being siphoned off by the richest, exacerbating rather than ameliorating global inequalities. At the same time, industrial production was beginning to impact on nature and society in unintended ways. Raw materials were becoming scarcer and more expensive, while the ecological status of both rural and urban environments was being degraded. In short, the promise of modernization was rapidly transforming into the crisis of modernity and, in the process, challenging many of the longstanding assumptions of social theory.

In the second half of the twentieth century, the validity of both the structure/agency debate and the human exceptionalist view of society were brought into question. Aware of the limitations imposed by adopting positions that favored either structure or agency, social theorists have sought to bring them together within an integrated social ontology. Giddens' (1984) structuration theory, for example, focuses on "social practices ordered across space and time" (2). From this starting point, agency is understood as the capacity of knowledgeable individuals to intervene in situations and change the course of events. Echoing Marx, however, Giddens suggests that while

people may make society, they do not do so under conditions of their own choosing: the daily activities of people in society are enabled and constrained by the social structures that they contribute to creating.

Environmental sociology portrays a growing consensus surrounding what Giddens (1984) termed *the duality of structure*, with structuralists incorporating human agency and social discourse into their analytical frameworks and constructivists seeking to understand how structures emerge and are changed by agency. Political ecology, for example, while having structuralist roots, incorporated a constructivist element during the 1990s, and began to investigate the ways in which nature is socially constructed in discourses such as “sustainable development” and “biodiversity conservation,” considering language to be constitutive of reality, rather than simply reflecting it (Escobar 1996). With development theory at an impasse, post-development promoted a more radical collective imagining of alternative future, to be generated through with the projects of Third World social movements (see Table 1). Similarly, while Hannigan’s (1995) foundational text *Environmental Sociology* was subtitled: *A Social Constructionist Perspective*, the second edition (2006) dropped the subtitle and proposed that social order and social change can occur simultaneously. Such integrated socioenvironmental theory provides agroecology with ways into understanding both the social processes that maintain peasant agriculture and the emergence of agrarian social movements.

In 1978, Catton and Dunlap (1978) published a paper in *The American Sociologist* claiming that recognition of ecological limits implied that the exceptional characteristics of the human species could no longer be viewed as exempting societies from ecological constraints, as classical social theory had implied. They defined environmental sociology as the study of interactions between the environment and society stressing that human beings are biologically constituted and ecologically embedded as well as socially constituted and culturally embedded. Norgaard (1987) explains social and environmental change as the outcome of coevolution between social systems (values, knowledge, technologies, and forms of organization) and environmental systems (climate, soils, biodiversity, etc.). The coevolutionary model of society-environment interaction, thus, focuses on interdependence and is neither environmentally nor culturally deterministic.

ENVIRONMENTAL SOCIOLOGY: CONCEPTUAL FOOD FOR AGROECOLOGICAL THOUGHT

Much environmental sociology has tended to focus on environmental degradation. Of particular relevance to agroecology, is the idea of “ecological debt” (Martinez Alier 2002), which refers to the historical debt incurred by the advanced capitalist countries through their excessive and disproportionate

use of the Earth's resources. In the context of ecological limits, ecological debt raises concerns about global environmental justice: concerns that are central to agroecology. Other branches of environmental sociology, especially ecological modernization (EM) theory, have developed close links with policymakers and focused on the ecological restructuring of modern society rather than its worst environmental excesses. This more optimistic view sees producers responding to market signals and instruments of policy by developing green technologies and improving the energy and material efficiency of production. At the same time, one of the founders of EM theory, Joseph Huber (2000), has cautioned that industry's efforts to increase productive efficiency, even when combined with a shift in consumer behavior away from excess and toward sufficiency, are unlikely to address adequately our current environmental and human predicament. For Huber, a third discourse is required, consistency, which from the agroecological perspective entails collective action to bring society's metabolism back into line with that of nature and repair the metabolic rift between production and consumption.

Socioecological metabolic consistency, where human resource use and waste production are consistent with nature's capacity to replenish resources and assimilate wastes, is a core principle of agroecology. We can theorize the transition to consistency by returning to Norgaard's coevolutionary understanding of change and integrating it with Giddens' structuration theory, with its notion of social practices ordered across time-space. If people are both socially and biologically constituted, then our actions are better defined as socioecological practices, enabled and constrained by socioecological structures. In a study of agricultural industrialization in nineteenth century Europe, Gonzalez de Molina (2010) characterizes change as socioecological transition driven by not just by human population growth, social inequality, technological developments, and competing ideas about nature but by complex interactions between social and ecological dynamics.

AGROECOLOGY TODAY AND THE ROAD AHEAD

Understanding nature as an active participant in processes of change is central to the agroecological perspective. Whether viewed with despondency or optimism, it is clear that mitigation of negative anthropogenic environmental impacts and adaptation to novel environmental conditions will depend on more than good science and good governance. Part of what is needed is an expanded imagination, as reflected in social movements like *La Via Campesina's* (LVC) struggle for peasant's agriculture and food sovereignty. The resurgence of peasant politics and social movements provoked by the return of economic liberalism in the 1980s has provided a focus for agroecological research (see Pérez Vitoria 2005; van der Ploeg 2009). Continuing in the tradition of the Narodniks of nineteenth century Russia,

peasant studies groups since the 1970s and post-development protagonists in the 1990s, agroecologists are engaging with the struggles of movements such as LVC.

In the 1970s, following several years working in Costa Rica and Mexico, Stephen Gliessman took up a post at the University of Tabasco. During his time in Central America, Gliessman had been intrigued by the agricultural practices of his peasant neighbors and it became clear to him that rather than trying to override natural processes, the local peasant farmers worked with them. He took these insights to Tabasco, where he delivered what was probably the first university course in agroecology. In 1981, Gliessman moved back to the United States and a post at the University of California, Santa Cruz, where he established the first agroecology program and began building a team of colleagues and students that have subsequently established enduring links with agroecological producers and communities, including the award-winning Community Agroecology Network (<http://www.canunite.org/>).

During the 1980s, a multitude of development nongovernmental organizations (NGOs) sprang-up throughout Latin America as public spending was cut in IMF-imposed structural adjustment programs. In 1989, NGOs from 11 Latin American nations established the Latin American Consortium on Agroecology and Development (CLADES). One of CLADES's technical advisors was Miguel Altieri, an agroecologist from University of California, Berkeley. CLADES developed important relationships with rural social movements and development NGOs, providing agroecological advice and training. Since 1991 CLADES has published *Agroecología y Desarrollo*, a journal dedicated to making agroecological knowledge and experience available to institutions promoting rural development and to providing a forum for debating the institutional challenges of sustainability. (www.clades.cl)

Following the 1975 International Working Party for Peasant Studies at the University of Manchester in the United Kingdom, where he had met and been encouraged by Teodor Shanin, Angel Palerm, Joan Martinez Alier, and Eric Wolf, Eduardo Sevilla Guzman returned to Spain in 1978 to found the Institute of Sociology and Peasant Studies (ISEC) at the University of Cordoba. ISEC became involved with the Andalusian landless workers movement (SOC), working together with SOC members as they occupied and began to cultivate abandoned haciendas, using agroecological techniques learnt from local peasant farmers. The relationship between ISEC and SOC fostered important linkages with Latin American agrarian social movements and made a significant contribution to the militant perspective that characterizes agroecological research and teaching at ISEC to this day (Sevilla Guzmán and Martinez Alier 2006).

Interactions among UC Santa Cruz, CLADES, and ISEC led to the establishment of the first doctoral program in agroecology at ISEC in 1991, followed shortly after by a co-taught postgraduate program at the

International University of Andalucía. Many of the contributors to this special issue of *Agroecology and Sustainable Food Sources* (formerly, the *Journal of Sustainable Agriculture*) have lectured or studied on these programs, and the personal and institutional relationships that they have developed have facilitated the training and worldwide diffusion of agroecology practitioners, social movement activists, academics, and state functionaries. These agroecological actors have contributed to the establishment and work of numerous associations, movements and institutions including the Brazilian Agroecology Association (ABA) and Landless Workers Movement (MST), the Latin American Agroecology Movement (MAELA), the Agroecology Scientific Society of Latin America (SOCLA), and the Agroecology University in Cochabamba (AGRUCO), Bolivia. Indeed, the adoption of the agroecological paradigm has become so extensive and profound in Latin America, that Altieri and Toledo (2011) have recently called it nothing less than an ‘agroecological revolution.’

At the same time as agroecology has been institutionalized within academic institutions and development NGOs, it has also become an important element in agrarian social movements. LVC, established in 1993, has become one of world’s most significant social movements (Martínez Torres and Rosset 2010). In less than 20 years it has grown to encompass around 150 local and national organizations in 70 countries, representing about 200 million small-scale farmers in their struggle to ‘defend community-based agroecological farming as a cornerstone in the construction of food sovereignty.’ LVC has established the Paulo Freire Latin American Institute of Agroecology (IALA) in Venezuela and a cadre of agroecology trainers that organize continental-scale encounters in the Americas, Asia, and Africa, to share and develop the agroecological approach. In the face of global capital’s relentless pursuit of profit through land-grabbing, displacement of small-scale producers, and the patenting of seeds, knowledge, and technologies developed over generations of farming practice, the second Americas continental encounter in 2011 issued a declaration: “Agroecology is Ours and is Not For Sale. Peasant agriculture is part of the solution to the current crisis of the system. In this context we reaffirm that indigenous, peasant and family farm agroecology [can] feed the world and cool the planet” (La Via Campesina 2011).

This declaration is an unequivocal statement proclaiming the indivisibility of science, movement and practice. Today, agroecologists, whether farmers or scientists, are working together to defend rural communities and agroecological cultures against the negative impacts of capitalist industrialization. While this struggle is a global one, human experience of such impacts remains place-based, and the local values, knowledges, institutions, and cultures of socioecologically situated people must be core elements in the construction of ecological sustainability and social justice. If the science of agroecology is separated from the agrarian social thought and movements with which it has grown up, we would argue that its transformative potential

will be lost and agroecology will become just another instrumental discipline in the continuing saga of capitalism's struggle to overcome its own internal contradictions.

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