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Globalisation and sustainable development: a political ecology strategy to realize ecological justice

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Summary

Organic agriculture is, like mainstream agriculture, faced with the challenges of globalisation and sustainable development. Ecological justice, the fair distribution of livelihoods and environments, has emerged as a key concept in efforts, on the one hand, to resist negative consequences of globalisation and ecological modernisation and, on the other to propose new agenda and institutional arrangements. This chapter investigates the role that ecological justice as a political ecology strategy may have in addressing the present problems of organic agriculture in a global political economy. The investigation has two interacting elements, a theoretical analysis of the political, economic and ecological aspects of ecological justice and a discussion of how its key concepts can be put into practice. The political basis of ecological justice is the idea of shared responsibility for livelihoods and environments, or what we have termed commons based governance. Typically, ecological justice positions social and ecological interests ahead of market liberalism and economic growth. Therefore it may suggest ways to resist the pressures of globalisation and associated structural and technological developments. The concepts of commons and ecological justice when joined, define a post-globalist pattern of governance that may facilitate the spread of organic agriculture and other socio-ecological practices that thrive on cooperative, sustainability focused relations.

Introduction

Release of the United Nations Millennium Ecosystem Assessment, in early 2005, revealed the parlous condition of the global environment. In an era when environmental awareness is high and there are unprecedented international efforts to create global environmental governance, nearly all major indicators of the world's ecological health are in decline. Global economic growth and industrialisation, under the influence of the forces of globalisation, are increasing natural resource consumption, drawing down non-renewable resources, stressing ecosystem processes, and generating unprecedented amounts of wasted nature. As Chapter 1 describes, modern agriculture has become part of the problem.

Farming in industrialized nations and increasingly in the developing world bears many of the hallmarks of industrialism and of the goals of modernity. Indeed, the recommended path for feeding the world by globalization's proponents typically features the following elements:

- Greater mechanization, standardization (including production techniques, varieties and breeds, and mono-cultural production), "factory farming" and increasing scale of production;
- Rising inputs of fossil fuel energy, fertilizers, pesticides and GMO; and

- Integration into a network of transnational and transcontinental markets shaped by conglomerate "agribusinesses" and highly complex technology.

Industrial agriculture is inextricably woven onto the modern world through its techniques of production, its market ideology, and its technology. Further, globalization has ensured that the demands, preferences and practices of the developed nations are being diffused throughout the world, connecting developing nations to the markets of the developed world.

Modern agri-food production presents an array of environmental concerns associated with intensive water and fossil energy consumption, rising greenhouse gas emissions, increasing application of artificial fertilizers and biocides, and the uncertain effects of biotechnology. Addressing the goal of global ecological sustainability therefore, necessarily challenges the assumptions and practices of industrial agriculture. In this chapter, the role for ecological justice as a political ecology strategy in developing and guiding organic agriculture along a pathway of sustainable development in a globalised world is explored.

Organic farming and the challenge of sustainability

For several reasons, organic farming is providing a sustainable form of agriculture in this era of globalization, at least for industrial nations. Organic production, processing, distribution and sales have grown immensely in size and efficiency in the past two decades, and the movement can no longer be regarded as merely a niche activity serving the needs of a normatively motivated wealthy few. The International Federation for Organic Agriculture Movements (IFOAM) epitomizes a "coming of age" for the initiative with an adopted worldwide goal of ecologically, socially and economically sound food production (IFOAM, 2004). But, like mainstream agriculture, organic farming is faced with the trends of globalisation and the ensuing challenges of sustainable development (see Byrne and Glover, 2002, for a discussion of the general problem).

Yet the case for promoting organic agriculture as ecologically sustainable is complex. Organic farming cannot be considered entirely free of the grip of industrial agricultural practices. Adhering to the standards of organic farming can secure more sustainable development in specific areas, such as regulation of fertilizer, pesticide use, cautions about genetic engineering, opposition to additives and calls for the protection of animal welfare. But for other aspects of agricultural production, the pathway of organic farming is not as clear and its contribution to sustainability still to be addressed. For example, how will organic farming interface with the following attributes of the modern food regime:

- Large-scale production
- Processing and marketing through large conventional food companies

- Sale through supermarkets, sometimes using supermarket brands
- Trade of feed, seed and other inputs through conventional companies, and
- Global trade.

Successful partnership of the movement with non-organic actors has been an important factor in the recent growth of organic production and expansion of organic food markets. On the other hand, this development can, in itself, lead to unwanted social and environmental impacts, by way of reduced landscape diversity, increases in "food miles", greater distance between producers and consumers, and unfair competition from large players. Further, partnership can and has put pressure on the integrity of the organic agro-ecological production systems by imposing constraints on the selection and diversity of crops, varieties, and breeds.

Globalisation and ecological modernisation together constitute the mainstream approach to sustainable development (Byrne and Glover, 2002). Globalisation is here understood as "the erosion of the barriers of time and space that constrain human activity across the earth and the increasing social awareness of these changes" (Byrne and Glover, 2002). It embodies a normative interest in modernity's technological, economic and political architecture. Specifically, globalization seeks to remove barriers to state- and market- based organization of society. Its politics privileges ideals of rationality, efficiency, objectivity, and competitiveness.

Sustainability was placed on the global agenda in a large consensus-building work under the World Commission on Environment and Development, which gave an often quoted description of sustainable development: "Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 8). The Commission pointed out that sustainable development implies limits — limitations imposed by the existing technological and social development — in the form of environmental resources and the abilities of the biosphere to absorb the effects of human activities. But they also stated that humanity has the ability to create a sustainable future through a marriage of economy and ecology which is today known as "ecological modernisation" — a reform of economics, technologies, and social institutions.

While globalisation and ecological modernisation constitute mainstream approaches today, they have also generated great resistance from many stakeholders, most noticeably developing nations, local communities, advocates of civil society, and environmentalists. Although diverse, there is a general philosophical theme that unites this resistance, that of the cause of "ecological justice" (Low and Gleeson, 1998, Byrne et al., 2002a and b). Ecological justice seeks to promote justice in relation to the environment for both present and future generations. In this sense it extends the more familiar concept of environmental justice through a broadening of the ambit of political concern to

include future generations and to ecological interests (both living beings and ecological processes). To give a first impression of what this means, some examples of ecological injustice are shown in box 2.1.

Box 2.1: Examples of ecological injustice

A large Coca-Cola factory in Plachimada (a hamlet in the state of Kerala, south India) pumps large amounts of ground water daily for use in producing the famed soda. The pumpage has been shown to deplete groundwater in the area, and polluting the local basin (AIPRF, 2002, India Resource Centre, 2004). While urban consumers far from the plant enjoy the beverage at a relatively modest price, the health and livelihoods of people in the local communities who depend on local natural resources are put at risk.

The construction of China's Three Gorges Dam (CNN, 2001) and India's Narmada Dam (Wagle, 2002) has disrupted the lives of millions of peasant farmers, inundating villages, settlements and agricultural lands, causing great social upheavals, and creating great ecological losses through habitat loss, changes to streamflows and other hydrological effects. Distant cities and downstream communities will benefit from the electricity and flood control created by both projects, but at substantial cost to the rural lives and ecologies of the disrupted valleys.

The corporate dominated world banana industry is characterized by ecologically and socially destructive practices. Chiquita and Dole operate huge Latin American plantations, monocropping bananas over thousands of acres using heavy applications of fungicides, insecticides, and other chemicals. This has fueled significant environmental and health problems, including deforestation, soil erosion, water pollution, and pesticide poisonings (Murray and Raynolds, 2000).

Anticipated changes in climate are caused by the industrialised, high-income countries (Byrne and Inniss, 2002). In general, these changes will have their greatest impact on those that have the fewest resources available to respond (Byrne et al., 2004). In particular, rising sea levels will have major consequences for low-income, lowland countries like Bangladesh and many small ocean states (Byrne and Inniss, 2002). Because anthropogenic releases of carbon to the atmosphere will remain for up to 250 years, the inequality wrought by climate change will continue into the 22nd century (Byrne et al., 2002b).

Political ecology as one approach to globalisation and sustainable development

Sustainable development as described by the World Commission emphasises the possibility for a new era of economic growth through better technologies and social organization (WCED, 1987). But the complex and interdependent relationships between globalisation, economic growth, sustainability, and

ecological limits have become contested questions. These relationships lie at the core for the discussion of the role of organic agriculture in a global perspective.

Elsewhere, two of the authors of this chapter (Byrne and Glover, 2002) identify three basic positions with regard to globalisation and sustainable development:

- Growth and free trade without ecological borders (market liberalism)
- Growth and free trade within certain limits (ecological economy)
- Opposition to growth and free trade on the grounds of ecological injustice (political ecology)

Growth without borders

From a neoliberal economic perspective, globalisation does not present a problem. On the contrary, globalisation is seen as an improvement of the possibilities for free market forces to allocate resources, which in this view is economically and socially ideal and a prerequisite for liberal democracy (Byrne and Yun, 1999). The solution to world poverty and environmental problems lies in growth and open markets, according to advocates, because growing wealth will furnish more than enough capital to repair whatever damage the growth may have caused.

This position presupposes an independent, always growing economic system as well as well-distributed benefits from the system. So called "environmental economics"¹ recognizes that there are market failures with respect to the environment and advocates institutions to internalise external costs, so that markets can settle on "optimal" levels of pollution and ecological losses. From the neoliberal perspective, sustainable development is measured by a single economic indicator: growth in the value of society's collected capital. The price for this simplicity is an assumption of substitutability — that all natural resources and environmental goods can be replaced with produced goods or, in other words, that there is no critical natural capital.

Growth within limits

Market liberalism can be characterised as having a "weak" conception of sustainability (e.g., Neumayer, 1999, Ayres et al., 1998). Other economic

¹ Environmental economics is a relatively new extension of neo-classical economics that applies neoclassical principles to environmental problems (see, especially, Coase 1960). Ecological economics is a broader, transdisciplinary field of study that includes contributions from institutional economics and ecology, as well as from several of the social sciences, the humanities, and the natural and engineering sciences. See, e.g., Söderbaum 2000: 9, 19.

perspectives endorse stronger conceptions of sustainability. For example, many believe that the economic system is dependent on a finite, vulnerable, ecological system and that there are only limited possibilities of substituting natural capital with manufactured capital (Daly and Farley, 2003; Hawken et al., 1999).

"Ecological economics" is a pluralistic, transdisciplinary alternative to market liberalism that considers ecological limits and the scale of the material and energy flows to which the economical processes connect². A key argument from the ecological economics perspective is that sustainable scale, just distribution, and an efficient allocation are three distinct, but interdependent, problems requiring different policy instruments (Daly and Farley, 2003). Sustainable scale here implies that the throughput associated with economic activities remains within the natural capacity of the ecosystem to absorb wastes and regenerate resources.

Growth and ecological injustice

As a third position, Byrne and Glover argue for a perspective of political ecology, which does not see development and efficiency as solutions, but as the primary sources of social and ecological problems. Political ecology opposes both globalisation and ecological modernisation because both presume trade is essentially an economic issue. Political ecology, on the other hand, situates trade within a political frame as a contest between resources taken as "commodities" and taken as "commons", a contest, in essence, of ecological justice. From this perspective, sustainable development in the form of ecological modernisation has primarily been the agenda of the wealthy. Relatedly, sustainable development is seen not as a remedy for problems created by globalization, but a reform program that currently tends to advance a globalisation agenda. Together, globalisation and sustainable development spur a replacement of commons valuation with commodity valuation that benefits multinational corporations and exploitive commodity interests, while simultaneously undermining sustainable commons systems and community governance.

Commons as the basis of ecological justice

Ecological justice is founded on the principle that an environment is fundamentally shared. The environment constitutes a "commons" from a societal perspective, since all human interaction depends upon impacts and is impacted by nature.

² On the concept of scale in ecological economics, see, e.g., Gibson et al (2000) and Jordan and Fortin (2002).

For organic farming, an ecological justice perspective highlights a number of distinct issues. Organic agriculture is more dependent on the environmental characteristics of the site of production than conventional industrial agriculture, because it bases agricultural production on a close interaction with natural systems and processes and because it has fewer technological remedies available to counteract depletions of these systems. Organic farming in industrial nations represents an effort to move beyond industrial farming because it strives to align its practices with a set of societal, political and ecological principles that cannot be satisfied by conventional farming. Furthermore, organic agriculture may well have unconventional ideas about what can be considered as commons, due to its integrated ecological view of nature, a matter that will now be explored.

Defining commons in the contemporary era

Commons are long-standing social institutions serving diverse cultures throughout human history in their need to share efforts to sustain daily life and in their need to organize shared resources. In modern life, shared effort and shared resources sometimes seem less compelling concerns as we rely on markets, technology and scientific knowledge to solve problems in ways that make "sharing" apparently unnecessary. Issues of ecological justice, however, can re-establish the importance of commons institutions.

Broadly two conceptually relevant dimensions of commons can be identified; in one depiction, a commons refers to a natural resource ecosystem or spatial area that is regarded as having certain characteristics which enable or encourage common social usage; secondly, a commons can be rendered as a social system or organisation that intends to recognize social and/or natural phenomena, processes or areas as common resources, and leads to the formation of informal and possibly formal institutions that govern social relations in support of the intended commons (see figure 2.1).

Spatial extension

Local: e.g., common lands
Global: e.g., atmosphere
Non-spatial: e.g., knowledge

Usage characteristics

Reusable
Renewable
Concurrent use
Multifunctional

Provided and reproduced by

Nature: natural commons
Society: social/political/economic commons

Ownership and usage regime

Common property: commons regime (no exclusive owner)
State property: state ownership
Private property: individual, exclusive owners

Figure 2.1. Features of commons

Community, political and scholarly interest in commons has increased in recent years in the wealthy and developing nations. In European history, the concept is familiar from the case of medieval "common land", in which local communities had traditional rights to common grazing, planting, etc. Commons, however, have come to be recognised as an indispensable feature of social life, and can be identified across all cultures and peoples and from pre-historic times to the contemporary period (Ostrom, 1990). When we consider commons in the form of language and culture, for example, we find that the institution precedes many of the social formations now considered essential, such as governments, nations and corporations. In the absence of effective commons or when commons fail, individual and community welfare is reduced, and in some cases human survival can be problematic (a contemporary case of this last point might be sudden climate change).

Environmental and natural resource issues are at the centre of much of the current interest in commons and have invigorated inquiries into the wide array of new and ancient commons. Part of this interest has been prompted by the search for commons approaches to novel and emerging environmental issues. The international relations literature has recognised that many environmental challenges supersede controls of specific nations, making various forms of international agreements and policy "regimes" necessary to address them. Byrne and Glover (2002), Volger (1995), and Buck (1998), for example, have explored this new category of international initiatives (known as "global commons") that concern problems such as ozone-depleting emissions, climate change, biodiversity loss, international toxic waste trade, international endangered species trade, and degradation of the high seas and the polar regions. Noteworthy is the number of global commons issues that are essentially environmental problems.

The concept of commons is also used in another sphere of life, the "intellectual commons", which includes art, music, fiction and research. Commons arising in this context encompass rituals, language, culture and the store of knowledge generally. Intellectual commons are recognised in law and norms for public activity, through new forms of copyright that expand usage rights and through commitments to open access of publicly funded science (e.g., Suber, 2004). The recent focus on intellectual commons is due partly to the rise of the Internet, and partly to new technologies of digitalisation that harbour options for unconstrained reproduction of digital resources. In this respect, the Internet itself exemplifies a commons institution.

Generally, commons are created to govern social interactions with resources, processes, services and other phenomena that are potentially reusable, renewable or sustainable in some sense. A condition for the creation of a commons regime is the feasibility of common and continued use — in terms of how a resource, service or process can be used and what is available for use. The availability for common usage, by different social actors can take different forms — successive use (e.g., a well or spring), concurrent use (e.g., common grazing areas, the sea

and the atmosphere) and multifunctional use (e.g., the use of trees for fruit, fodder and firewood). The availability for continued use can depend on inexhaustibility or durability, allowing for re-use of the same resource (such as the physical landscape and space being used for motion and transportation), or on renewability, recycling, reproduction, etc., or processes that replenish the resources. Use is a relation, so the availability for use will not only depend on the resource but also on the users, and the possibilities that different individuals and groups have for using a common resource will depend on their abilities to do so. In the same way, the options for re-use and renewability of a resource will always be relative to the cumulative and technological abilities that are put into the use of the resource. This is why the question of sustainability often comes up in relation to new technological abilities for utilising natural resources.

Considered as social institutions, commons present an ancient and venerable solution to the problems of resources that need to be shared and governed as such. Commons have been an essential feature of human life since the formation of social groups. The provision of food, water, fibre, shelter, and social cohesion has involved commons. Two aspects appear to be critical, firstly, management of the commons resources such that they provide the stream of benefits sought by a community, and secondly, social governance so that shared effort and sharing of resources are sustained. In effect, commons institutions exercise a political role in two senses: 1.) the creation of common resources; and 2.) the evolution of a regime of governance which serves to protect the commons, and also the community's interests that are using the resource. Commons governance of natural resources does not axiomatically result in the protection of environmental values or in the assurance of just access, distribution or disposition of these resources. But a number of reasons make the consideration of environmental issues in a commons context attractive for environmental protection and ecological justice.

As human societies have evolved, new forms and techniques of governance, technology and social institutions have emerged, such as capitalism, mechanisation and liberal democratic governance, which address historic commons problems. Changes in technology and the ever-increasing demand for resources by industrial societies have resulted in a continual expansion of resource harvesting and their inclusion in the global economy of production and consumption. Wastes and by-products from industrial society are also accumulating and resultant pollution problems have continued to worsen. Commons feature prominently in this system, providing many of the resources for consumption and the sinks for waste outputs. Rather than being static, therefore, commons are dynamic – being created and lost, as a result of changing circumstances (see Ostrom et al., 2002).

Regardless of the specific characteristics of the shared resources, commons regimes must address the relation between different aspects of common use — different users and usages can conflict in various ways. Furthermore, commons are multidimensional and the impact of one kind of use for other kinds of use

(multifunctionality) needs also to be considered in connection with ecological justice. Although the allocation of natural resources usually evokes concepts of conflict, the history of commons finds an expression of social cooperation in a multitude of forms for the successful resolution of these problems.

State and corporate solutions to commons protection

Inherent in the concept of commons is the idea that human interaction with natural resources and ecological services can be governed so as to meet human needs in perpetuity, in other words, to provide for their sustainable use. The degradation and depletion of commons through over-use has been the topic of the "tragedy" discourse that followed from the influential article "The tragedy of the commons" by Garrett Hardin (1968). Hardin presumes a state of unrestricted usage of a common grazing area by selfish, rational herdsmen and shows how this will inevitably lead to overgrazing. The tragedy of "the tragedy of the commons" is that it has been taken as a demonstration of the inability of "common property" regimes to manage commons (McCay and Jentoft, 1998). Hardin's argument, however, is hardly about a commons. Rather he conceives a regime of free usage in which private gain is paramount, resembling (in this respect) more a commodity approach found in capitalist systems, than a commons approach in a cooperatively organized economy. This is not a proper commons regime as there is no governing social institution where resource users cooperate and follow instituted rules for resource use (e.g., *The Ecologist*, 1993). Unfortunately, Hardin set in train a widespread misconception through his assumption that commons were open access regimes, thereby promoting the view of the modern impossibility of community governance of commons resources.

Having ignored community governance — historically, one of the most prevalent forms of economic governance (see, e.g., Ostrom et al., 2002), Hardin reduced the question to a choice between two options: privatisation or state regulation (nationalisation). These options are the signature approaches to commons governance by modern industrial societies. Both capitalist and socialist nation states have sought access to natural resources to promote industrial growth, and many of these resources were originally commons – organized before their identification by the state as constituting state or entrepreneurial property. Oftentimes, the role of the state in capitalist societies has been to make these resources available for private ownership. This can be readily identified with regard to many of the major natural resources used during the formative stages of industrialisation (timber from public lands, leases on mining and grazing lands, sale of water rights, sale of transport corridors, sale of broadcast rights and so on). Historically, industrial nations have also used the process of colonisation to extend the realm of commons resources to which access could be gained, a process in which state and corporate interests were often joined.

In socialist nations, commons regimes have often been supplanted by central planning in which natural resources and ecosystem services are conceived as available inputs for meeting collective social needs. Community interests are presumed to be represented by the state planning apparatus. As with their capitalist counterparts, development goals have been the principal forms of socialist regimes, although differences can arise with regard to such concerns as equity and democratic participation.

Overall, the response to commons in the global economic system has been one of commodification³. As manifested by the global environmental crisis and the multitude of local environmental problems besetting contemporary life, the routine functioning of industrial nation states – socialist and capitalist – has produced well-documented patterns of ecological injustice⁴. Industrial societies have lived unsustainably for more than a century with, the effects of their unsustainability being disproportionately borne by the poor and disadvantaged. Moreover, ecological processes have been harmed, and the effects of these changes will be experienced by future generations.

Industrial societies have responded to these crises with strategies of ecological modernisation and sustainable development. These strategies seek solutions to environmental problems from within the array of state and market powers (as described above) and have sought to bring remaining commons into state or market control. In this manner, the polluted commons are now regulated by governments, or by corporations working with governments to devise approaches that accommodate both parties' interests. Accordingly, the environment is protected for economic use, but the extent to which the goals of ecological justice are served is less certain.

Under the rationale that commons are best handled by being converted into private or state property, the modern world has struggled to protect societies and ecosystems from the problems of over-use, degradation, and pollution that accompany industrial development. Under globalisation, the rate of resource consumption and waste generation continues to increase. Ecological modernisation has attempted to use science and state powers to regulate environmental problems without undue disruption to routine industrial activities, but this has emerged as, at most, a partial solution. Governance approaches that conceive of commons as commodity resources are therefore deficient in their

³ Byrne and Rich (1992: 271, footnote 1): "Commodification is defined as a development orientation pursued by societies in which progress is determined by increased social capacities to produce and purchase goods and services. Under this orientation, the physical environment is valued either directly as a commodity in the form of energy, raw materials and resources extracted for social use; or indirectly as a "leas-cost" means of disposing of wastes (thereby improving the efficiency of commodity production and use)".

⁴ The *World Resources* reports regularly issued by the world Resources Institute and the *State of the World* annuals of the Worldwatch Institute record empirical trends of ecological injustice. See, for example, World Resources Institute (2003) and Worldwatch Institute (2004).

ability to protect the environmental and social values sought under ecological justice.

From commons to commodity

The concept of ecological justice includes a systemic, political relation that property regimes such as those classically described by Bromley and Cernea (1989) cannot reproduce. Property rights regimes treat land and other natural resources as commodities whose benefit streams can only be maximized if enforceable rules of exclusive access are imposed (e.g., Coase, 1960). But maximization will itself result in patterns of ecological injustice that cannot be corrected except by extraordinary means; this is the gist of the ecological modernization proposal (Bell, 2003, Brown, 2002). Similarly, collectivization mobilizes natural resources to maximize socialist development, which may differ (or may not) in its distributive efforts, but does not prioritize ecological justice over development. In a "commons regime", humans rely on their environment as a (multifunctional) "lifeworld" for realising livelihoods — they depend on the land, the waters and the atmosphere, as life support systems. In this sense, life and well-being depend upon the environment; no separation or dualism of "nature" and "society" exists (e.g., Byrne et al., 2002b). This is expressed in the social welfare concept of environmental justice and is extended to other living organisms, with the idea of ecological justice.

In the case of global commons, it might seem that there is little use for a broader concept of ownership than the common property regime described above, since the group is basically the whole human population. But there is still the question of who in the group has property rights and the consideration of fairness towards other members, human and non-human. The pre-eminence of property rights in this instance remains a barrier to ecological justice if the challenge is conceived as a problem of political economy (or more extensively, political ecology – see Byrne and Glover, 2002, Byrne et al., 2002b).

Private enclosure or state appropriation effectively operates in two ways. Firstly, as described above, both partition a commons and turn it into a commodity for the purposes of development, often under the rationale that this best serves society's interest (usually meaning efficiency is served, which in turn is conceived as the rational norm for any social allocation). Secondly, enclosure or state appropriation prevents social access into the realm of governance, so that no community institution can exercise its judgements in the governance of the commons. Protecting ecological values becomes difficult because the market or state systems focus on development at the expense of other values (including ecological and social values) and because communities cannot offer an alternative set of views and values.

Commons governance emerges as an activity most likely to protect social and environmental values when commons social institutions are involved, and less

likely when commons are treated only as a resource. Governments frequently realize this fact and often re-introduce community involvement into management of public assets through community advisory committees and the like, but having first established and de-limited the powers and authorities of such groups, making them (i.e., communities) creatures of the market or state. In this respect, enclosure or state appropriation not only alter access and use of heretofore socially organized commons, both also undermine political voice in governance. However badly or incompletely community voices may have been previously recognized in commons regimes, privatisation and collectivisation appear to have caused an acute weakening of community governance. With the ideas of shared resources and common effort in retreat, the ecological justice problems of commodity regimes magnify in the present circumstance.

Ecological commons

Renewed interest in commons governance approaches can be attributed partly to mounting problems of ecological injustice. Discussion of a paradigm shift needed to redress these problems has sparked investigation of existing and earlier commons regimes (Ostrom et al., 2002, Buck, 1998). But there are, as well, empirical reasons since the commons proposition rests on solid ground, as the most highly successful, efficient and long-lived resource management systems are those based on commons (Ostrom, 1990; Ostrom et al., 2002).

Certainly commons governance has shown in practice that approaches can be designed to ensure long-term environmental protection and supply of resources and services in perpetuity. Local resource management practices are able to employ proven, often experience-based knowledge firmly grounded in local cultural norms. Further, we find that historically commons production is typically oriented towards local consumption, rather than for surplus (which is the aim of industrial development), so that the demands made on natural resources tend to be lower than when surpluses are sought. Extraction of resources and waste production are usually conducted with an awareness of local social and environmental implications. Communities exploiting local resources have a vested interest in minimizing the harmful effects of economic activity on local communities and environmental values. From the perspective of creating and maintaining the institutional aspects of local political governance, family and communal relations tend to be reinforced by commons regimes.

It is possible to apply an ecological commons approach to an array of agricultural issues, as can be demonstrated by using the example of soils. Although soils are rarely considered as parts of a global environmental commons, it can be instructive to conceive of them, and their degradation, in this light. Little needs to be said about the role of soil condition for agricultural production, but less well articulated are those connections between the processes

of globalization and the corresponding influences on local soils⁵. Globalization of agriculture can influence local soils through the importation of new organisms, including GMOs, and by diffusing new farming practices and technologies. Socioeconomic influences include those brought about by changes in global markets and the demands for certain products, and (often collaterally) by shifting ownership and management regimes.

Soils are influenced by the spread of modern agriculture under the influence of globalization, and associated effects brought about by mechanization, especially fossil fuel-powered equipment and the application of fertilizers and biocides. Using modern agricultural practices, "feeding the world" has the effect of contributing to the commodification of the earth's mantle. Treating that mantle as an ecological commons, both in the global and local context, can facilitate an understanding of needed policy, institutional and social changes in order to restore values such as nearness, equity and sustainability that would be key to an ecological justice strategy for agricultural practice.

Overcoming commodification

With socialist strategies in decline, globalisation offers an unfettered opportunity for neoliberal design of the international order. Neoliberal economics can be characterised as the art of externalising costs, and private property as a way of internalising social and ecological benefits. By contrast, ecological justice can be seen as a political strategy for reinstating political voice and elevating the interests of sustainability and social justice above those of neoliberal development. This section examines possible linkages between ecological justice and organic agriculture, and how the pressures of globalisation can be resisted.

Reclaiming the commons idea

Social and environmental costs associated with agriculture, such as biodiversity loss and pollution, often stem from practices shaped by the economics of surplus production. That is, modes of agricultural production that require large and continually growing surpluses for sale in markets as the basis for profitable operation can be expected to rely increasingly upon chemical inputs, irrigation, and biocides and to farm by mechanical means large, continuous tracts of land in order to raise yields and lower unit costs. Resulting social and environmental impacts, in principle, are to be externalized as the necessary costs of efficient, high-yield agriculture. The externalisation of costs becomes a key ingredient for

⁵ A foundation for such an approach is the classic work of Blaikie (1985), *The Political Economy of Soil Erosion in Developing Countries*, London, New York: Longman. See also the recent McNeill and Winiwater (2004) article.

success under this model. Ecological modernization proposes to address environment impacts of modern agriculture's progress by regulating the scale and seriousness of these impacts. Its counterpart, social modernization, promises to compensate "losers" from the revenues of the commonwealth or special fees levied against agricultural wealth. In either case, the source of the problem is unaddressed since doing so would undermine modern, "efficient" development.

A commons regime, by contrast, traces the problem to commodification and seeks redress by valorising globalisation's external costs and assigning them in a manner that discourages harmful practices. Of particular interest for organic agriculture, certification procedures and North-South agricultural partnerships can be employed to reveal externalities and to promote nearness, sustainability and equity in agricultural practice. These tools can be readily employed in a commons regime, while they are exceptionally difficult to apply in neoliberal commodification contexts.

Globalisation and trade

Conventional agriculture is indivisible from the global economy. There are a multitude of ways in which conventional agricultural practices and outputs are shaped by external factors, such as technology, markets, international transport and the activities of multinational corporations. Central to these influences is the role of international trade as an agent that promotes commodification of social and environmental values, resources and services.

Alrøe and Kristensen (2005) identify two problematic trade issues relevant to organic products. Firstly, there are trade barriers and other economic impediments that organic products must overcome in order to compete fairly with conventional agriculture. Of particular concern are state subsidies for conventional agriculture which provide products from these nations with a competitive advantage over organic ones. Secondly, conventional agricultural products are offered at prices that do not reflect the local and global environmental and social costs entailed in their production, so that often environments and communities of Southern countries are forced to bear the burdens of unsustainable production while "low-cost" foods are enjoyed in the North.

Global trade has the effect of obscuring or effectively eliminating the connections between production and consumption. Where production and consumption are closely linked, the costs and impacts of production are part of the awareness of most consumers, and the effects of local social values and regulations influence consumption. But when foods are sold at a great distance from their sites of production, the social and environmental costs of production are less likely to be known and less likely to influence choices.

Placing organic products into the global market has a number of implications. Global markets are characterised by the strong role played by corporations in

transport, handling, distribution, marketing and sales. Entering into the same markets as conventional agricultural products is likely to result in organic produce being subject to the same economic conditions that have shaped conventional agriculture and made sustainable practices unattractive. Organic producers competing in existing global markets will face economic incentives likely to erode the principles of organic farming. An emerging issue of potentially great concern are challenges brought against nations whose trading preferences run counter to such groups as the World Trade Organisation. Entry into global markets may offer grounds on which to challenge national subsidies for conventional agriculture, but retaliatory challenges against organic farming are likely. A further concern is that global markets are uncertain and often volatile, which have the effect of reducing the security of farming enterprises and can be added to the economic incentives for larger-scale enterprises.

Free trade versus fair trade

Central to the argument for economic globalization is the advocacy of free trade. Long established as one of the tenets of neo-liberalism, free trade seeks the unencumbered movement of goods, services, labour and capital between markets with minimum state interference, such as in the form of regulations, tariffs and restrictions on capital flows. Free trade is supported by claims that it best produces economic growth and that markets without state restrictions are the most efficient. Neoliberalism's ideal role for government is to provide national security and the rule of law, but intervention in markets is supposed to be minimal. International agencies, notably the Bretton Woods institutions (i.e., the International Monetary Fund and World Bank) and the World Trade Organisation, now promote free trade strongly. National governments, especially those of the OECD, have similarly espoused the principles of free trade⁶. Measured by an array of indices, such as annual global trade or resource consumption, the process of economic globalisation continues to expand (see, e.g., Held et al., 1999).

Free trade has long been controversial on geopolitical, human rights and environmental grounds. While promoted as an economic goal that produces desirable social outcomes, in practice free trade economics cannot be isolated from questions of politics and history. Disputations over the theory and practice of free trade typically entail a broad range of issues. In agriculture, the issues concerning international free trade are especially complicated, but a few stand out. Global markets provide economic advantage to the more powerful economic states and corporations, so that integration into global markets often produces

⁶ However, OECD countries have only sporadically moved national policies toward this ideal, and existing agricultural policies often are defended as requiring exceptions of one kind or another (OECD, 2004).

local hardships for producers as prices are depressed. Production can be guided by global markets, rather than local needs, and as farming communities become increasingly oriented towards "cash crops", they increase their reliance on distant markets and reduce their self-sufficiency. Global commodity markets are frequently unstable, making local producer incomes more uncertain and less secure. Processes of modernisation are accelerated under the influence of the global economy, thereby increasing the use of unsustainable methods of production, expanding energy and resource consumption rates, and causing higher ecological costs.

A high-profile effort to resist globalisation has emerged in the agro-food network's creation of an alternative market system known as "fair trade". This system arose from the alternative trade networks started in the 1960s and 1970s that sought to find and create markets for neglected developing world goods, as sponsored by organisations such as Oxfam in the UK and Equal Exchange in the US. Principally dealing with coffee, tea, and handicrafts, this movement began its own stores, run as co-operatives. In 1990, a collaborative organisation of 11 fair trade organisations in nine European nations was formed: the European Fair Trade Association (EFTA) (see www.eftafairtrade.org). Collectively, EFTA now imports products from some 400 rural communities in Africa, Asia, and Latin America, with a turnover of 150m Euro in 2001 (www.eftafairtrade.org). There is also a network of alternative trade groups, the International Federation for Alternative Trade, comprising around 220 member organisations from 59 nations (see www.ifat.org).

"Fair trade" began as a labelling initiative by an NGO in the late 1980s in the Netherlands for marketing coffee from a Mexican co-operative attempting to break through a strong oligopoly (Renard, 2003). This initiative evolved into several fair trade labels in many nations, 17 of which were eventually brought under an umbrella group, the Fair Trade Labelling Organization (FTLO) (see www.fairtrade.org), responsible for certification, standards and labelling. Dozens of products are covered by fair trade labels, notably coffee, tea, rice, bananas, mangoes, cocoa, sugar, honey and fruit juices.

Renard (2003: 90) summarizes the general fair trade criteria involved. Buyers are to meet these conditions: direct purchase, a price covering the costs of production and a social premium, advance payments to prevent small-holder indebtedness, and contracts that allow for long-term planning. Certification requires of the growers: small-holders can participate in a democratic organization, plantation and factory workers can participate in trade unions, no forced or child labour, and programs to improve environmental sustainability.

Fair trade has been a success, as measured by the growth in sales of its products. FTLO reports that in 2003 it sold 83,480 million tones (a 42% increase over the previous year) (www.fairtrade.net/sites/impact/facts.html). This group represents 389 certified producer organisations and over 800,000 families of farmers and workers in 48 countries and selling to consumers in 19 nations.

Jaffee et al (2004) offer that the concept of fair trade can be applied to initiatives within developed nations, in addition to its well-known North-South usage.

The fair trade movement offers a strategy consistent with the promotion of commons regimes. Political voice and social and environmental values take precedence in this movement over questions of efficiency and economic growth. Linking the two could strengthen the interest of ecological justice while offering effective, practical resistance to globalization.

Traditional and indigenous agriculture in developing nations

In many respects, traditional and indigenous farming practices offer an effective foil against commodification and there are several lessons to be drawn for the organic farming movement. Clear distinctions need to be drawn, however, between (certified) organic agriculture, traditional/ indigenous agriculture and industrial agriculture. Organic farming in many respects draws on and is popularly identified with older farming traditions and practices and may therefore appear radical (i.e., "returning to its roots", as it were). However, it is perhaps more accurately understood as a development of modern agriculture, arising from farmers and consumers in industrial societies disenchanted with conventional industrial farming. "Certification" itself denotes a modern process characterized by objective standards, measurement and assessment, monitoring, performance evaluation, authoritarian control and other activities. Certified organic agriculture in developed nations typically incurs higher costs, which are largely successfully passed onto consumers in the form of premium prices, thereby ensuring economic viability of the organic farming enterprise as a whole. Agricultural products bearing organic certification thereby compete with often lower-priced conventional agricultural products derived from local and distant sources. A relatively small volume of agricultural trade from developing nations is certified organic produce destined for developed nation markets.

Traditional/ indigenous agriculture may well satisfy the requirements of certified organic agriculture (especially where there is an absence of use of artificial fertilizers and biocides), yet farmers relying on these long-established methods may be unable to afford or unwilling to commit the time needed to secure certification. Hence, a category for "non-certified" organic agriculture in developing countries might be warranted in which the organic farming movement promotes smallholder farming in developing nations. We can imagine a scenario where non-certified organic farming of this type is advocated as an alternative response to problems of food security (see chapters 6 and 10 of this volume). This approach can avoid the problematic effects on soil fertility and biodiversity that solutions based on high external inputs cannot promise.

The question of how this might be done is an important issue, however, for organic agriculture in a global perspective. The pursuit of "non-certified" organic agriculture might need to be tempered by an awareness of the frequently negative

experience of integrating traditional and indigenous farming with modern agriculture and the global economy in general. Concern continues to mount that organic agriculture could evolve towards conventional systems or in ways that are similar to conventional systems (particularly, through involvement with supermarketing and lengthy transport of products to serve organic food demand). Such conventionalisation would move organic farming into direct competition with traditional/indigenous agriculture and could result in the organic food movement influencing developing country farming in ways that conventionalise its integration into globalised production, with destructive consequences for rural livelihoods. For this reason, we believe that a note of caution is in order for proposals of this kind (for a detailed discussion of the issues, please consult see chapters 3 and 6 of this volume).

Putting ecological justice into practice: guidelines for policy

There are a wide variety of means to incorporate the principles of ecological justice into practice. Here, a number of suggestions are offered that are intended to address how ecological justice can be operationalised in relation to organic agricultural production and trade.

A role for "fair trade"

As discussed above, the concept of fair trade applies equally to exchanges between North and South nations and within nations of the North and South. Organically grown foods, in the North, have benefited from labelling, standards and marketing systems because the values embodied in the production of these products finds a clear resonance in communities and among individuals who seek to restore a commons idea of food production and consumption. Southern farmers and communities may be less served by these strategies, but efforts to support non-certified organic farming may be applicable. Ecological justice is promoted because the restored sense of commons relations builds social and ecological values into the decision process. Further, the political character of the decision process is explicitly recognized (rather than being muddled by the rhetoric of free trade and efficiency). Unfettered economic globalisation cannot realize these things and this finding suggests that a closer alignment of the organic foods movement, and the social and ecological values it reflects, with that of fair trade will benefit a more systemic process of change.

The "nearness" principle

Globalisation encourages the movements of goods, services and capital and the erosion of local identity where this does not add obvious market value. Throughout the process of globalisation, the global movement of produce has continued to accelerate and the concept of global markets now exists for all major forms of agro-produce. As argued in this chapter, there are a number of ecological and social implications from this trend, including an increasing mechanisation of the food production system, greater transport costs, higher energy inputs, greater application of preservatives and food storage technologies, loss of farmer independence, greater corporate involvement, incentives for unsustainable production and the dominance of cash cropping. Of particular concern to organic farmers is the goal of resisting the global market, wherein the factors influencing market prices become increasingly remote and market relationships become more volatile. Incorporating a principle of "nearness" into the agro-production system could promote the consumption of local and regional produce over goods imported from afar. Confirmation of the principle would aid in the identification of the local and broader commons interests. Coordination with the fair trade movement would be necessary so as not to intentionally harm farmers in developing nations.

Identifying organic production and produce

Identification of organic produce serves several goals simultaneously. A community is established through the system to devise and administer the organic identity of produce, which in turn reinforces a sense of community among identified organic producers. Such an identity allows consumers to express their preferences and can spur the formation of an alternative market for farm produce. Wider educative benefits for the community become possible because markets now express a broader range of social and ecological values, so that communities and individuals can demand specific goals that stand in opposition to those of conventional agriculture. The ascendance of social and ecological values can have the direct effect of reducing the role of the global economy. Establishing such an identity is complex and there is the risk of creating of technocratic system that repeats the same undesirable effects of conventional industrial agriculture. A desirable outcome is a system of identification reflecting both community and farming interests and values and supporting a diversity of political voices.

Sustainability targets

Environmental and social justice goals can be transformed into specific indicators and applied to farming activities in order to assess the extent to which sustainability and justice targets are being met. To some degree, such measures could be an extension of the broad set of environmental and social goals currently found in organic farming and fair trade standards. Sustainability and justice targets could apply to various inputs to the farming process and to overall measures, such as the "ecological footprint" approaches (Wackernagel and Rees, 1996) and measures of socio-ecological performance that are built on interlinked principles of equity and sustainability (see, e.g., Byrne et al., 1998 and 2004).

Targets can ensure that organic food production uses ecologically sustainable and socially equitable tools to reach long-term goals. By communicating to society that organic produce meets "green" and fair objectives, the appeal of organics can be broadened. Further, such identification would highlight the social and environmental failings of conventional agriculture and could lead to increased pressures from civil society on behalf of an agenda of justice and sustainability. Because organic farming focuses on local circumstances, the setting of targets would have to consider the extent to which local (e.g., nutrient inputs) and more global concerns (e.g., greenhouse gas emissions or impacts on Southern farming) are included.

Non-certified organic agriculture

Certification of organic produce is ideally suited to production in the North but poses difficulties for the South, and indeed its application in the developing world is potentially harmful to the interests of smallholder farming communities. Recognition of the organic farming approaches of Southern farmers is needed but operationalised in a manner that avoids imposing the burden of Western-style certification. Here the basic approach could involve local decision-making to promote sustainability and fairness objectives based on local and regional conditions. Consumers and producers in Southern nations should be able to benefit from knowing whether agricultural produce is contributing to the goals of ecological justice. At the same time, a system of imports from the South to the North can ensure the commitment of Northern resources to redress problems created for agriculture by economic globalisation.

Ecological justice assessment

If the preceding initiatives are considered collectively, a nascent assessment strategy on behalf of ecological justice can be defined. The assessment process would involve the creation of a series of social institutions seeking to revitalise

commons-centred agricultural production and consumption. These commons regimes would be capable of taking into consideration not only local assessments of fairness and sustainability, but also would reflect global sustainability and justice goals. To this end, ecological justice goals could be established to assist and guide the organic farming community in this activity. These goals could consider some of the key components of ecological justice, including the extent of sustainability, the effects on future generations, the effects on non-human species, the pursuit of fair trade, the practice of the nearness principle and the extent to which social justice goals are served.

Conclusions

There are potentially strong links between organic farming and explicit strategies to pursue the values of ecological justice. Organic farming already exhibits a commitment to social and ecological values that conform with principles of ecological justice, including protecting the productive capacities of farming systems, meeting local needs, contributing to local community development, and considering the interests of future generations. However, the forces of economic globalisation offer a number of challenges to the spread of organic agriculture and increase the incentives for the organic food systems to become more like conventional food schemes. Alternatives to economic globalisation are available and can be organised around the concept of commons-centered organic agriculture. In this way, organic farming may well play a vital role in the quest for an ecologically just and sustainable future.

References

- AIPRF (All India People's Resistance Forum) (2002). Struggle against Coca Cola in Kerala, ZNet September 10, 2002. Available online at <http://www.zmag.org/content/showarticle.cfm?SectionID=32&ItemID=2316> (accessed 28. September 2004).
- Alrøe, H.F. & Kristensen, E.S. (2005). Organic agriculture in a global perspective. In J.D. Wulffhorst and A.K. Haugestad (eds.) *Building Sustainable Communities: Ecological Justice and Global Citizenship*, Rodopi (forthcoming). Available online at <http://orgprints.org/3855>.
- Ayres, R.U., van den Bergh, J.C.J.M. & Gowdy, J.M. (1998). Viewpoint: Weak versus Strong Sustainability, Tinbergen Institute Discussion Papers no. 98-103/3. Available online at <http://ideas.repec.org/p/dgr/uvatin/19980103.html>.
- Bell, D.R. (2003). Political liberalism and ecological justice. Paper presented at ECPR General conference, Environmental politics section, 19th September 2003. Available online at: http://www.essex.ac.uk/ECPR/events/generalconference/marburg/show_panel.asp?panelID=46
- Blaikie, P. (1985). *The Political Economy of Soil Erosion in Developing Countries*. Longman, London, New York.

- Bromley, Daniel W. & Cernea, Michael M. (1989). *The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies*, World Bank Discussion Paper 57. The World Bank, Washington, DC. Available online at http://www.wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000178830_9810190357252.
- Brown, L.R. (2002). Restructuring the economy for sustainable development. *International Review for Environmental Strategies* 3(1): 73-80.
- Buck, Susan J. (1998). *The Global Commons: An Introduction*. Island Press, Washington DC.
- Byrne, J., Glover, L., Inniss, V., Kulkarni, J., Mun, Y.-M., Toly, N. & Wang, Y.-D. (2004). Reclaiming the atmospheric commons: Beyond Kyoto. In V. Grover (ed.) *Climate Change: Perspectives Five Years After Kyoto*. Science Publishers, Plymouth, UK pp. 429-452.
- Byrne, J. & Glover, L. (2002). A common future or towards a future commons: Globalization and sustainable development since UNCED. *International Review for Environmental Strategies* 3(1): 5-25.
- Byrne, John, Glover, Leigh & Martinez, Cecilia, eds. (2002a). *Environmental Justice: Discourses in International Political Economy*. Transaction Publishers, New Brunswick, NJ and London.
- Byrne, J., Glover, L. & Martinez, C. (2002b). The Production of Unequal Nature. In J. Byrne, L. Glover and C. Martinez (eds.). *Environmental Justice: Discourses in International Political Economy*. Transaction Publishers, New Brunswick, NJ and London pp. 261-291.
- Byrne, J. & Inniss, V. (2002). Island Sustainability and Sustainable Development in the Contest of Climate Change. In M. Hsiao (ed.) *Sustainable Development for Island Societies*. Academia Sinica, Taipei, Taiwan pp. 3-29. Available online at ceep.udel.edu/publications/globalenvironments/publications/2002/ge_island_sustainability.pdf
- Byrne, J. & Yun, S.-J. (1999). Efficient Global Warming: Contradictions in Liberal Democratic Responses to Global Environmental Problems. *Bulletin of Science, Technology and Society* 19/6: 493-500.
- Byrne, J., Wang, Y.-D., Lee, H. & Kim, J.-D. (1998). An Equity- and Sustainability-Based Policy Response to Global Climate Change. *Energy Policy* 26(4): 335-343.
- Byrne, J. & Rich, D. (1992). Toward a Political Economy of Global Change: Energy, Environment and Development in the Greenhouse. In J. Byrne and D. Rich (eds.), *Energy and the Environment: The Policy Challenge*. Transaction Publishers, New Brunswick, NJ and London pp. 269-302.
- CNN (2001). China's Three Gorges Dam (includes interview with this chapter's co-author John Byrne). Available online at <http://www.cnn.com/SPECIALS/1999/China.50/asian.superpower/three.gorges>.
- Coase, Ronald (1960). The Problem of Social Costs, *Journal of Law and Economics* 3: 1-44
- Daly, H. & Farley, J. (2003). *Ecological Economics: Principles and Applications*. Island Press, Washington, DC.
- Gibson, C.C., Ostrom, E. & Ahn, T.K. (2000). The concept of scale and the human dimensions of global change: a survey. *Ecological Economics* 32(2), 217-239. Available online (restricted access) at [http://dx.doi.org/10.1016/S0921-8009\(99\)00092-0](http://dx.doi.org/10.1016/S0921-8009(99)00092-0).

- Hardin, Garrett (1968). The tragedy of the commons. *Science* 162 (December): 1243-48.
- Hawken, P., Lovins, A. & Lovins, L.H. (1999). *Natural Capitalism: Creating the Next Industrial Revolution*. Little, Brown and Co. Boston, MA.
- Held, D., McGrew, A., Goldblatt, D. & Perraton, J. (1999). *Global Transformations: Politics, Economics and Culture*. Stanford University Press, Stanford, CA.
- India Resource Center (2004). Campaign to Hold Coca-Cola Accountable. Available online at <<http://www.indiaresource.org/campaigns/coke>> (accessed 28. September 2004).
- IFOAM (2004). International Federation of Organic Agriculture Movements. Online at <http://ifoam.org> (accessed 30 March 2005).
- Jaffee, Daniel, Kloppenburg, Jack R. & Monroy, Mario B. (2004). Bringing the "moral charge" home: Fair trade within the North and within the South. *Rural Sociology* 69(2): 169-196.
- Jordan, G.J. & Fortin, M.-J. (2002). Scale and topology in the ecological economics sustainability paradigm. *Ecological Economics*, 41(2): 361-366. Available online at <http://www.zoo.utoronto.ca/fortin/Jordan2002.pdf>.
- Low, Nicholas & Gleeson, Brendan (1998). *Justice, Society and Nature: An Exploration of Political Ecology*. Routledge, London and New York.
- McCay, Bonnie J. & Jentoft, Svein (1998). Market or community failure? Critical perspectives on common property research. *Human Organization* 57(1): 21-29.
- McNeill, J.R. & Winiwarter, Verena (2004). Breaking the Sod: Humankind, History and Soil. *Science* 304 (June 11): 1627-1629.
- Murray, Douglas L. & Raynolds, Laura T. (2000). Alternative trade in bananas: Obstacles and opportunities for progressive social change in the global economy. *Agriculture and Human Values* 17: 65-74.
- Neumayer, E. (1999). *Weak versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms*. Edward Elgar, Cheltenham.
- OECD (2004). *Agricultural Policies in OECD Countries: At a Glance – 2004 Edition*. OECD, Paris, France.
- Ostrom, Elinor, Dietz, Thomas, Dolsak, Nives, Stern, Paul C., Stonich, Susan & Weber, Elke U. (eds.) (2002). *The Drama of the Commons*. National Academy Press, Washington, DC.
- Ostrom, Elinor (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, New York.
- Renard, Marie-Christine (2003). Fair trade: quality, market and conventions. *Journal of Rural Studies* 19(1): 87-96.
- Suber, Peter (2004). Creating an intellectual commons through open access. Presented at the Workshop on Scholarly Communication as a Commons, Workshop in Political Theory and Policy Analysis, Indiana University, Bloomington, IN, March 31-April 2, 2004. Available online at <http://dlc.dlib.indiana.edu/archive/00001246>.
- Söderbaum, P. (2000). *Ecological Economics: A Political Economics Approach to Environment and Development*. Earthscan, London.
- The Ecologist (1993). *Whose Common Future? Reclaiming the Commons*. Earthscan Publications, London.
- Volger, J. (1995). *The Global Commons: A Regime Analysis*, Chichester. John Wiley and Sons, UK.
- Wackernagle, M. & Rees, W. (1996). *Our Ecological Footprint: Reducing Human Impact on the Earth*. New Society Publishers, Philadelphia.

- Wagle, Subodh (2002). The Long March for Livelihoods: Struggle Against the Narmada Dam in India. In J. Byrne, L. Glover and C. Martinez (eds.) *Environmental Justice: Discourses in International Political Economy*. Transaction Publishers, New Brunswick, NJ and London pp 71-96.
- WCED (World Commission on Environment and Development) (1987). *Our Common Future*. Oxford University Press, New York.
- Worldwatch Institute (2004). *State of the World 2004 Special Focus: The Consumer Society*. W.W. Norton & Company, New York.
- World Resources Institute (2003). *World Resources 2002-2004: Decisions for the Earth, Balance, Voice, and Power*. World Resources Institute, Washington, DC.