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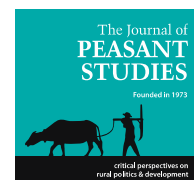
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Trade and the Sustainability Challenge for Global Food Governance

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Abstract

This paper examines the ways in which the norms of environmental sustainability and trade liberalization interact in global food governance arrangements. It shows that these two norms are often presented as mutually supportive goals. The paper unpacks the underlying rationale of this dominant narrative and shows that it draws on long-standing trade theories and links efficiency gains from trade to environmental benefits. The paper then examines the weaknesses of this narrative, outlining the ways in which critics have identified internal inconsistencies within the trade-based argument and have presented alternative models for sustainability that do not require trade. Finally, the paper seeks to explain the persistence of the dominant narrative despite its weaknesses. It makes the case that sustainability and trade continue to be linked in global governance arrangements for several interrelated reasons, including institutional fragmentation in global food governance, the carryover of previous normative compromises regarding trade and environment in other settings, and the influence of powerful interests. Overall, the paper argues that despite the rise of sustainability as a guiding norm for global food governance across a range of initiatives, the norm of trade liberalization ultimately determines the shape of sustainability initiatives in the sector, and constrains its transformative potential.

Introduction

Food system sustainability has risen high on the global governance agenda in recent years. Following the 2007-08 food price spikes, policymakers turned their attention to the question of how to feed an expanding world population expected to reach 9 billion by 2050 with limited available land and resources. Climate change is expected to affect agricultural productivity, particularly in certain parts of the world such as sub-Saharan Africa where levels of hunger remain high (Godfray 2010). At the same time, there is growing awareness of the fact that the global industrial food system, as it is currently organized, is not environmentally sustainable. The agricultural sector is responsible for a significant proportion of greenhouse gases and contributes to biodiversity loss, water depletion, and deforestation, among other environmental impacts (Foley 2011; Garnett 2013). For these reasons, it is widely understood that the world must transition to more sustainable food systems on a global scale if we are to improve food security over the long run. This recognition of the importance of sustainability in the global food system is stressed in a range of global governance initiatives that sets the rules and norms of behaviour for food and agriculture.

This shift toward a wider embrace of sustainability as a guiding norm in global food governance is welcomed as a positive sign by most observers. But at the same time, it is important to unpack the way in which the sustainability norm is understood and articulated into policy if we are to fully grasp its potential to bring transformative change toward more environmentally sound food provision. Governance frameworks are rarely guided by just a single normative idea, and often it is the interaction of different norms that determines the shape of policy outcomes. Sustainability has risen on the agenda for international governance initiatives, but it is forced to share the stage with another powerful norm that had already settled into this governance space: the norm of trade liberalization. Both norms now feature prominently in a variety of formal governance arrangements that are important for food and agriculture, from the Sustainable Development Goals (SDGs), to the World Trade Organization (WTO), to the Committee on World Food Security (CFS), to the Group of Twenty (G20), among others. At the same time, increasingly popular voluntary sustainability initiatives for agricultural and food commodities, including for soy, beef, and palm oil, are predicated on an open, liberal global trade regime. The norms of trade liberalization and sustainability are often presented side by side in these various governance settings, in an unproblematic fashion. Indeed, the global governance arenas that espouse both of these norms typically stress not only the compatibility of these norms, but also promote a liberalized trade regime as a central means by which to achieve sustainability in the sector.

In order to assess the likely effectiveness of sustainability initiatives in global food governance, it is important to unpack the ways in which the norms of trade liberalization and sustainability interact, and how this interaction shapes policy outcomes. Such an exercise begs important questions: What is the underlying rationale within the dominant narrative for presenting trade liberalization and sustainability as mutually supporting norms? What are the limitations of this dominant narrative? How can the persistent influence of the dominant narrative be explained?

This paper seeks to address these questions. First, it shows that the dominant narrative draws on long-standing trade theory to argue that trade liberalization enhances efficiencies that in turn are essential for sustainability in the food sector. Second, it demonstrates that there are important weaknesses in the dominant narrative, including the existence of viable alternatives that do not require trade, as well as inconsistencies within the trade model itself. Finally, it argues that the persistence of the dominant narrative, despite widespread recognition of its flaws, is the product of several interrelated factors. These include problems related to the fragmented nature of global governance arrangements for food systems, the carry-over of a broader ideational 'compromise' between liberalism and sustainability to the food governance arena, and the ability of powerful interests that benefit from a liberal trade regime to navigate these features of the governance landscape to their advantage. Overall, the paper argues that despite the rise of sustainability as a guiding norm for global food governance across a range of initiatives, the norm of trade liberalization ultimately determines the shape of sustainability initiatives in the sector, and constrains its transformative potential.

1 Trade Liberalization and Sustainability Norms in Global Food Governance: The Dominant Narrative

International norms set out standards of behaviour, and can influence rights and obligations that are set out in international agreements and upheld by international institutions (Krasner 1982, p.186; Finnemore and Sikkink 1998). Trade liberalization has been a dominant norm in the global economy since the advent of the 1947 GATT that seeks to promote a progressively open and liberal trade regime. The norm of trade liberalization is relatively new to food and agriculture governance. Agricultural trade was largely exempted from the GATT agreement until the adoption of the Agreement on Agriculture (AoA) under the Uruguay Round in 1994, as agricultural “exceptionalism” was a dominant norm for much of the 20th century (McCalla 1969; Skogstad 1998). With the adoption of the AoA, the idea of trade liberalization has become a powerful idea that shapes global food governance, despite the fact that it is highly uneven by allowing powerful countries to continue to subsidize their farmers while simultaneously requiring extreme market opening in developing countries (see Bukovansky 2010).

Sustainability concerns have also risen on the agenda in global governance arenas since the late 1980s and early 1990s and were accompanied by the adoption of a growing number of international environmental agreements. It is only more recently, however, that sustainability as a norm has been explicitly articulated into global food system governance frameworks. The norm rose to prominence in the wake of the 2007-08 food price spikes that were accompanied by growing concern with the ability to produce sufficient food supplies without causing irreparable environmental damage (Foley et al. 2011). Over the past decade, the promotion of sustainability in food systems has risen to the top of the agenda in most governance arenas addressing food security, including both formal intergovernmental arrangements as well as voluntary and market-based initiatives.

Trade and Sustainability Norms Placed Side-by-Side

Even as trade liberalization and sustainability norms rose to prominence along different trajectories, they have been placed side by side in global governance arrangements that matter for the food system. Global food system governance is currently spread across a number of institutions and arrangements, spanning economic, food, and environmental governance spheres. Most formal governance arrangements make explicit reference to the compatibility of an open trade system with the goal of more sustainable food systems, or at least to the need to ensure their compatibility. Most voluntary and market-based governance measures for sustainability are built on the premise of a liberal and open trading system. The close articulation of trade liberalization and sustainability in these contexts is outlined briefly below, starting with the trade governance regime, to which other governance arrangements often defer.

The WTO is a central force in the trade governance arena, and this dominance is relevant for how agriculture and food systems are governed in a global context. The WTO has fully embraced the norm of trade liberalization, the promotion of which is the core of its mandate. Matters related to policy space for both food security and environmental protection have been debated at the WTO in recent decades. The 1994 Agreement on Agriculture included language on "nontrade concerns" including food security and environment (WTO 1994; Sakayuma 2005). The preamble of the WTO also stresses its commitment to sustainability (WTO 1995). The Doha Declaration that launched the Doha Round of trade negotiations in 2001 further emphasized that the goal of environmental sustainability is compatible with an open multilateral trade system:

We strongly reaffirm our commitment to the objective of sustainable development... We are convinced that the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive (WTO 2001).

The Doha Declaration also pledged to consider crafting rules to give countries policy space to address non-trade issues such as food security and environment as they relate to agriculture. The negotiations on trade and environment more generally, however, were confined to examining cases where multilateral environmental agreements might conflict with WTO rules (WTO 2001), and as such were not discussed in any detail in the Agreement on Agriculture negotiations. The negotiations on the Agreement on Agriculture in fact stalled over the question of whether food security concerns of developing countries have been adequately taken into account. The WTO is neither a food security organization, nor an environmental one, and as such it is not surprising that the question of whether trade enhances or detracts from the sustainability of food systems has not been subject to any extensive discussion or negotiation.

Global food security governance is coordinated most prominently within the UN Committee on World Food Security (CFS) housed at the Food and Agriculture Organization (FAO) and open to member states of the FAO, World Food Programme and IFAD. The CFS was reformed in 2009 to include non-governmental organizations more fully in its deliberations (albeit non-voting) and is widely seen to be the premier institution for coordinating governance on food security (McKeon 2009, 2015). A prominent mandate of the CFS is to examine issues at intersection of food security and environment, but the body has been explicitly discouraged by its member states from discussing trade issues in relation to food security (Clapp and Murphy 2013, p.134). Although this body is often silent on matters of trade in its deliberations, the norm of trade liberalization shapes it nonetheless. The Global Strategic Framework (CFS 2014), a guidance document for CFS regularly renegotiated by its members, stresses the need for open trade flows and multilateral trade negotiations in numerous places throughout. At the same time, much of its mandate is to address issues of environmental sustainability, especially resilience of food systems in the face of climate change, and the GSF mentions the need for agro-ecological practices. The body is more introspective on the potential tensions, however, when it notes, “it is important to promote consistency of trade and development and environmental policies...” (CFS 2014, p. 19).

The work of the CFS builds on the Rome Declaration of the World Summit on Food Security held in 2009, in the aftermath of the food price crisis. The declaration embraces and outlines the *Five Rome Principles for Sustainable Global Food Security* that countries agreed to adhere to. These include, under Principle 3 (Strive for a comprehensive twin-track approach to food security) a statement (paragraph 22) that: “we support WTO-consistent, non-trade-distorting special measures...” and “We agree to refrain from taking measures that are inconsistent with WTO rules...” Also under Principle 3 (paragraph 25) the document stresses: “We will implement sustainable practices, including responsible fisheries, improved resource use, protection of the environment, conservation of the natural resource base and enhanced use of ecosystem services” (WSFS 2009). There is no mention in the document on how to ensure that these goals are mutually compatible.

Other multilateral governance initiatives that touch on food security have followed a similar approach. The recently adopted Sustainable Development Goals also place these norms side by side. They call for sustainable food systems in Goal #2, but also stress, in Goal #17, the need to “promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda”. The text of the SDGs stresses that these goals are deeply connected and inseparable (UN 2015). The Group of 20 also recently adopted an Action Plan on Food Security and Sustainable Food Systems in Turkey in fall 2015. This plan stresses the importance of “building food systems that are more sustainable and resilient” while at the same time stating: “We reaffirm our commitment to the fundamental role of a rules-based multilateral trading system in global food security and to the on-going WTO negotiations with a view to promptly conclude the Doha Development Agenda” (G20 2015).

Global environmental governance arrangements that are relevant for food and agriculture also follow a similar pattern. Global environmental agreements on climate change and biodiversity, for example, have recognized the importance of the food and agriculture sector as it intersects with environmental

change. At the same time, these agreements make clear that they will abide by the norm of trade liberalization. The UNFCCC states clearly: “The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change” (UNFCCC 1992). The biosafety protocol to the Convention on Biodiversity, which explicitly governs the trade in genetically modified organisms, also positions itself as being mutually supportive of trade agreements, rather than in conflict with it (CPB 2000).

In a context where the pro-trade norm is firmly embedded across formal trade, food security and environmental governance institutions, voluntary, multi-stakeholder initiatives have taken a prominent role in shaping new governance approaches to address sustainability concerns. Voluntary private certification schemes for more sustainable agricultural commodities have emerged and are gaining prominence in debates over sustainability of the global food system (Fuchs and Kalfagianni 2010; Auld 2014). Voluntary initiatives organized with the major corporate players are often cast as a middle ground that seeks to promote both greater food trade and a more sustainable food system. They also fit neatly within broader economic norms guided by neoliberalism that promotes free and open trade and a reduced role for the state. Prominent initiatives in this vein include the Roundtable on Sustainable Palm Oil (RSPO), Roundtable for Responsible Soy (RTRS), Bonsucro (sugar), the Better Cotton Initiative (BCI), the Roundtable on Sustainable Biofuels, and the Global Roundtable on Sustainable Beef (WWF 2012).

The Underlying Rationale for Casting Trade and Sustainability as Mutually Supportive

In order to assess the effectiveness of global governance efforts for food system sustainability, it is important to understand underlying rationale for presenting these norms as mutually supportive. The dominant narrative focuses its analysis within the language of trade and economic theory, focusing on the ways in which trade generates economic efficiency gains that can be harnessed to promote sustainability in the food system. The association of trade with greater efficiency draws on the concept of comparative advantage, which is frequently referenced in both academic and policy documents that take this perspective.

Comparative advantage, first outlined by David Ricardo in 1817, is the idea that gains will arise from international trade even for countries that do not have an absolute advantage in producing any particular good. According to the theory, all countries have different opportunity costs to produce different goods, according to their unique endowments of land, labour, climate, capital, and technology. Because of these differences, all countries have a comparative advantage in producing at least some goods over others. Ricardo showed that if all countries specialize in the goods for which they have the least opportunity costs, and then engage in trade, world welfare would increase because there would be more goods produced globally and thus more available for everyone (see Schumacher 2013; Prasch 1996). The mechanism by which gains are realized is through improved efficiencies in production across all goods (because production is focused on goods for which countries have the least opportunity cost) and efficiencies in allocation of those goods among users (because with international trade all partners should be made better off).

The dominant pro-trade narrative draws liberally on the concept of comparative advantage to make the case that trade supports sustainability (see, for example, Baldos and Hertel 2015; Lamy 2011, 2013; UNEP-WTO 2009). The concept has wide appeal for its logical explanation and mathematical demonstration of the economic efficiency gains from trade. Those who view trade’s role as a positive force for sustainability in the food system typically put forward several types of arguments, all of which refer back to the "efficiency" gains from trade in one way or another.

Perhaps the most common argument for trade supporting sustainable food systems is that trade allows for the capture of efficiency gains on a global scale, minimizing the overall use of natural resources required for agriculture by shifting production to countries best suited to it (Lamy 2011). Trade advocates highlight the fact that some countries are naturally endowed with an appropriate climate for

growing certain crops, enabling them to produce those crops with minimal additional inputs and without practices that could deplete natural resources (Lamy 2012). Some countries, for example, have access to abundant water and fertile soils, and these countries should focus on producing crops that rely heavily on those resources, and export their surplus to other countries that are less able to produce those crops, but which hold comparative advantage in producing other crops (Meridian 2011, p.19). Through trade, countries that face severe natural resource constraints can preserve their natural resources by relying on imported food items rather than expanding production at home. As the OECD pointed out in a recent publication:

“Trade will be essential in order for supply increases to be achieved sustainably. Trade enables production to locate in areas where natural resources, notably land and water, are relatively abundant, and where systems are more resilient to the effects of climate change” (OECD 2013, p. 18).

The dominant narrative also notes that the economic benefits associated with greater production should increase the capacity of farmers to obtain new technologies that support more sustainable agricultural production and enable adaptation to climate change (UNEP-WTO 2009, p. 31). This argument fits with the broader economic arguments that income growth associated with trade will lead to environmental improvements, as shown by the Environmental Kuznets Curve (Gallagher 2009). Trade advocates often stress the need for technological solutions to sustainability challenges, such as the adoption of drought tolerant genetically modified seeds and other technological strategies for ‘sustainable intensification’, alongside their prescription for greater trade liberalization, as the two are seen to positively reinforce one another (e.g. World Bank 2007; OECD 2013; Godfray and Garnett 2014). Trade, for example, is promoted as an important channel for the global spread of environmental technologies (UNEP-WTO 2009, p.31).

The promotion of trade as a delivery mechanism for sustainability in food systems is also often justified on grounds that restrictions to trade introduce inefficiencies that can directly result in environmental degradation (UNEP-WTO 2009). Trade advocates draw on scientific studies regarding agricultural resource constraints (e.g. Fader et al. 2013) argue that restrictive trade policies that implemented in the name of food self-sufficiency are misguided because self-sufficiency is biophysically impossible for a number of countries, in addition to being highly inefficient from an economic perspective (Lamy 2012). Insistence on producing food domestically, they argue, can increase a country’s reliance on irrigation, which puts stress on water resources, and also encourages land clearing, which is associated with deforestation, biodiversity loss, and release of greenhouse gases. Trade distortions, such as subsidies and other restrictions, according to this narrative, only disrupt trade’s contributions to sustainable development (UNEP-WTO 2009; Baldos and Hertel 2015).

These arguments are often utilized in the context of climate change, which is likely to make natural resource constraints more problematic in certain parts of the world. Sub-Saharan Africa, for example, is widely expected to experience productivity declines as a result of a changing global climate (Porter et al. 2012), and climate change is likely to exacerbate existing food production imbalances between rich and poor countries (FAO 2015, p.13). Many import dependent countries are already facing natural resource constraints that prevent them from producing all of their own food (D’Odorico et al 2014). Developing country agricultural imports are expected to double as a result of climate change (Campbell et al. 2011, p.35). More open trade channels, advocates argue, can help to address climate change by cushioning the severity of its impacts in the agricultural sector by enabling countries to access food and agricultural products from trading partners that are less affected (UNEP-WTO 2009, p. 62). Trade is also seen from this perspective to mitigate greenhouse gases by reducing the need to clear more land for agricultural production in countries facing resource constraints.

Trade is also actively promoted as an “economic” adaptation strategy for climate change, because it can enable those countries that are likely to see their agricultural production diminish to still obtain food from other parts of the world without needing to resort to measures that would constrain their natural resource base further. A free and open trading system is also widely seen by promoters of this

narrative to play a role in reducing price volatility that may occur as a result of production disruptions linked to climate change. Further, countries' comparative advantages over the long run are likely shift as a result of climate change, and in this context trade is promoted as a strategy for adapting to climate-related changes in countries' opportunity costs (Baldos and Hertel 2015).

The dominant narrative does not deny that there are environmental challenges associated with the global food system, and even associate some of them with industrial agriculture (e.g. Hertel et al. 2014). But they do not tie these problems to trade, and they do not advocate trade as a way to address them. Economists in the dominant narrative stress that if externalities arise within sector, they can be dealt with through appropriate pricing mechanisms at the domestic level, rather than through the use of trade policy (see Bhagwati 1993). As Pascal Lamy, former Director General of the WTO noted in a 2011 speech:

“: ... no matter how sophisticated our trade policies are, if domestic policies do not themselves incentivize agriculture, and internalize negative social and environmental externalities, we will not be satisfied with our agricultural systems... Trade policy — no doubt — has its place in this picture. But it cannot and does not, by itself, answer each and every challenge in agriculture” (Lamy 2011).

A suite of economic tools for cost internalization in the agricultural sector has been developed in recent decades, from payment for ecosystem services to tax and subsidy programs. The rise of voluntary market – led certification schemes in the agricultural sector are also widely seen to be mechanisms by which environmental externalities associated with the production of certain export crops can be internalized into the price of the goods and this is seen to be more appropriate means by which to address externalities than the restriction of trade. Such schemes do not conflict with WTO trade rules and articulate well with the above arguments regarding the means by which international trade can contribute to sustainability in the food system.

2 Trade and the Ecological Crisis in the Food System: Weak Points in the Dominant Narrative

The theoretical arguments about trade's contributions to sustainability have broad appeal because they promise efficiency that will agriculture's impact on natural resources while increasing production. These aims appeal to many environmentalists who are concerned about capturing efficiencies in a resource-constrained world. But do the arguments on which the dominant narrative's case is made hold up? Many would argue that it does not. One line of critique comes from food sovereignty advocates, who often reject trade liberalization in favour of more locally oriented food systems based on agroecological principles that they argue are more environmentally sound (Holt-Giménez and Altieri 2013). This critique is important, but does not engage with trade theory itself. I argue here that there are further weaknesses with the dominant narrative, in particular that it suffers from its own internal contradictions that highlight the many ways in which the promised efficiency gains are in no way guaranteed. Together, these various lines of critique show that the underlying rationale of the dominant narrative is inherently weak.

A key line of argumentation against organizing food systems around a liberalized trade regime is that the agricultural sector serves multiple functions in society and that it is important to consider those functions that go beyond tradable commodities (Rosset 2006; Desmarais 2007; Witman et al. 2010). Prioritizing economic efficiency over other goals can easily lead to unbalanced outcomes for the sector that have negative environmental and social consequences. Agricultural systems are integral to food security, culture, and environmental quality, and as such are not merely economic in nature (Potter and Tilzey 2007). In environmental terms, agriculture provides essential ecosystem functions, such as carbon absorption and water and air filtration (Altieri 2002; Holt-Giménez and Altieri 2013). These ecological services are threatened by modern industrial farming systems that are promoted by the trade model that encourages specialization and large-scale high-tech farming operations (Altieri and Nichols 2008; Sundkvist et al. 2005).

Ecological resilience in the agricultural sector, increasingly required in a context of climate change, can also benefit from a degree of redundancy. Redundant agricultural practices may be “inefficient” in economic terms, yet it is important for the protection of ecosystem services over the long run (Fuchs and Hoffmann 2013; Puma et al. 2015). More diverse farming systems based on agroecological principles, however, enhance ecological services that in turn strengthen resilience. Scientific research on this type of farming methods shows that it is in fact ‘climate cooling’ because it is on balance carbon absorbing rather than carbon-emitting (Martinez-Alier 2010; Holt-Giménez and Altieri 2013). Ecologically diverse farming systems that may not be profitable in strict economic terms also provide meaningful livelihoods and ensure the preservation of plant genetic diversity, providing enormous social benefits for a large segment of humanity and strengthening the resilience of food systems further by creating positive synergies (Sachs et al. 2007). Small-scale producers provide around 70 percent of the world’s food production, and the preservation of their diverse farming systems is a vital component of both food security and sustainability (ETC Group 2013). Recognition of these dynamics have led to calls for greater assessment of the balance between efficiency and resilience in global food production and trade (Puma et al. 2015, p. 12).

These ideas have been embraced by the food sovereignty movement, which has promoted agroecology as key component of its vision for more sustainable food systems, on both ecological and social grounds. The critiques of the dominant narrative that focus on the ecological benefits of small-scale and local agricultural systems do not tend to engage directly with economic trade theory. Rather, they typically draw on social and ecological traditions point out the association of trade with large-scale industrial production that contribute to ecological risks, and present an alternative that does not require international trade to deliver sustainability. This critique is important and has wide appeal among critics. At the same time, it is useful to note that trade theory has weaknesses even on its own terms. Drawing on the work of critical economists, I outline below the ways in which the problems these scholars have identified with trade theory is relevant to understanding the links between trade and sustainability outcomes in the food and agriculture sector.

A number of critical economists have pointed out that the assumptions that underlie the theory of comparative advantage more broadly – the basis on which the dominant narrative builds its case in linking trade to sustainability as outlined above – simply do not hold in today's world (Daly 1993; Prasch 1996; Chang 2009; Fletcher 2010; Moon 2011). All economic models are built on assumptions, but if those assumptions are unrealistic, then the predicted results that arise from those models become less reliable in practice. Comparative advantage rests on the idea that only goods are mobile across borders, and that labour and capital are not. In the primary example Ricardo gave to demonstrate the gains from trade – Britain and Portugal trading wine and cloth – these goods were the only items that crossed borders. The assumption that only goods are mobile across borders is indispensable to the theory because otherwise capital would seek out investments where absolute advantage, rather than comparative advantage, holds, negating the gains from trade for all partners (Schumacher 2013). The original model also referred to exchange of goods by barter in perfectly competitive markets that did not take transportation costs or externalities into account (Daly 1993). These critics point out that these are unrealistic assumptions that do not hold in today’s world, and when these conditions do not hold, environmental quality is at risk when trade is increased without appropriate safeguards built into trade policies.

These critiques of comparative advantage were not originally advanced with specific reference to the food system, but the ideas can easily be extended to it. Even a cursory look at the global food system today reveals that the assumptions on which Ricardo built his theory are not applicable in today’s context. To start with, trade within the global food system is much more complex in the current era than it was 200 years ago. Today, most of the world’s food trade takes place within complex global supply chains that are controlled by a handful of large transnational corporations whose operations span the world (Murphy 2008). The ability of transnational corporations to invest in multiple locations around the world, and at numerous points along global supply chains, undermines the most basic assumption of comparative advantage, which is that capital is not mobile between countries (Clapp

2014a). In cases where agricultural markets are dominated by transnational corporate actors operating in several countries, any gains from trade are likely to accrue to the owners of the capital, who typically reside in other countries, rather than to the local farmers that supply those firms or work as paid labour on large-scale foreign-owned farms (McMichael 2013). Such an outcome would undermine the dominant narrative's arguments that increased income from trade will encourage farmers to adopt more sustainable farming practices.

Corporate concentration is also rampant in the food system, demonstrating that perfect competition is merely a notion that is rarely achieved in practice. Economists consider situations where the top 4 firms control 40 percent or less of the market as generally constituting a competitive market. Ratios higher than that imply some degree of market control, which in economic terms is considered inefficient. Concentration ratios in the food and agriculture sector, however, often exceed that percentage, indicating very high levels of concentration that lead to uncompetitive and distorted markets (Murphy 2006). Just four firms dominate the global grain market, for example, accounting for over 70 percent of the world's grain trade (Murphy et al. 2012, p.9). Market power of this sort enables firms to manipulate prices in ways that result in inefficient outcomes (Gonzalez 2011, p.771). Competition is also undermined by the highly financialized nature of global agricultural value chains. Following the food crisis of 2007-08, large volumes of transnational financial capital moved into the agricultural sector, sparking widespread concern about the impact of speculative financial capital driving agricultural production decisions and their ecological consequences (Isakson 2014; Clapp 2014b).

The original formulation of comparative advantage also did not take externalities into account. Instead, it assumed that all costs of production are paid for by producers of goods, and as such are incorporated into market prices. This assumption is important, as internalized costs are important for determining comparative advantage and ensuring the efficient allocation of resources. This assumption has been widely critiqued for being unrealistic, and in particular for ignoring environmental costs of production (Daly 1993; Fletcher 2010; Prasch 1996). Some economists have recently calculated that if external costs were incorporated into prices of food, that these costs would outweigh any possible gains from trade. Schmitz et al. (2012), for example, have calculated that although trade liberalization in the period to 2045 will likely result in efficiency gains of around US\$9 trillion, these gains will be accompanied by an increase in carbon emissions of around 75 giga tons. The increased CO₂ emissions are largely due to land use change to accommodate comparative advantages, with the result that tropical forests, particularly in Latin America, are likely to be converted to production of agricultural crops for export (Schmitz et al. 2012). The transportation required for trade also emits carbon and other forms of pollution, as does the storage and processing infrastructure required for the industrial food system to function (Garnett 2013). These costs are rarely considered within the dominant narrative. But with growing levels of international food trade, including the widespread practice of re-exporting agricultural goods, the environmental consequences of these transportation – related externalities can be significant.

As noted in the previous section, most mainstream economists today see externalities as unfortunate but relatively rare occurrences due to inefficiencies and a failure to price nature correctly in the marketplace through a variety of policies. Critics, however, argue that those externalities are inextricably linked to the operation of the trade-based food system and that simple valuation exercises will not reduce them. The organization of agricultural production and trade into complex supply chains, as noted above, encourages more industrial forms of agricultural production, which come with enormous external costs for the environment. Policies to improve efficiencies on the margins of this system ignore the ecological costs associated with the system as a whole (Weis 2010; Moon 2011). Many of the food items that are central to today's industrial food system and whose trade has grown remarkably in recent decades – palm oil, soy, maize, sugar, meat and processed and packaged foods - are the very food items with some of the highest ecological impacts in terms of land degradation, water depletion, biodiversity loss, carbon emissions and chemical pollution (e.g. Foley 2011; Garnett 2013; Nepstad et al. 2006).

Beyond direct critiques of the inapplicability of comparative advantage in the contemporary context, other critical economic studies have stressed the need to examine not just economic indicators, but also biophysical indicators, in assessing the ecological impact of trade. Taking such an approach reveals the uneven distribution of ecological effects of food production in a globalized food system. Some have pointed to ecological ‘hot spots’ where certain countries become stuck producing crops with high ecological impact for the export market. Just five countries account for over 95 percent of soy and palm oil production, for example, and it is these countries that pay the highest environmental costs in the form of deforestation, carbon emissions, and biodiversity loss (MacDonald et al. 2015, p. 283). It is difficult to see how trade in this scenario contributes to sustainability. These are the kinds of scenarios that voluntary sustainability initiatives aim to correct for market failures, but critics have shown that these measures are patchy in their coverage and overall weak in their requirements (e.g. Fortin 2013). Others have stressed the need to consider efficiency in socio-metabolic terms – that is, in physical terms as measured by use of energy, water, and land per unit of output – rather than simply in monetary terms. Doing so reveals that industrial agricultural models that the trade system is organized around are in fact highly inefficient in terms of energy (Martinez-Alier 2011) and water use (D’Odorico et al. 2014).

These various critiques of the trade-oriented model of sustainable food systems are important because they point out the ways in which the conditions required for comparative advantage to deliver gains for all participants do not hold, which undermines the claims that efficiency gains will result from trade. And because the mainstream, pro-trade narrative relies on the delivery of efficiency gains for its argument that trade promotes sustainability, there is no guarantee for this claim, either. But it is not just the failure of comparative advantage to deliver that is the problem for critics. They also make the case that economic efficiency should not be the driving factor determining decisions in the food sector in any case, especially when it comes to questions of ecological sustainability that are not measured in economic terms. It is important to point out that critics of trade liberalization are not calling for an end to food trade and complete self-sufficiency. Rather, they are questioning full-scale liberalization of trade and investment in the sector that constrains the ability of states to promote more sustainable food systems, including measures that foster more diverse, small-scale and agroecological production at the local and national scale.

3 Implications for Sustainability Initiatives in Global Food Governance

As outlined above, critics have made a powerful case that trade liberalization is unlikely to deliver ecological sustainability in the food system. At the same time, they have put forward alternative models - based on local, small-scale, agroecological farming methods - that offer a greater chance of delivering ecological resilience than a fully liberalized trading system. These alternative models have been shown to be more efficient in biophysical terms, and contribute to the mitigation of climate change. To be clear, these critics are not arguing that all trade is necessarily always problematic, but they do make the case that the promised economic gains coming from the dominant narrative are in no way guaranteed, and in many cases are actually counterproductive in ecological terms. Yet despite these serious weaknesses, the dominant narrative has prevailed in global governance arrangements, with little policy space for the promotion of these alternative food system models on sustainability grounds.

What explains the persistent influence of the dominant narrative in these settings? Three types of explanations for outcomes in global environmental and food governance are frequently referenced in the literature, which also have relevance for the case of food governance and questions of sustainability. These include the ability of powerful material interests to influence governance arrangements in ways that serve global capital, the influence of norms and ideas that have previously gained legitimacy in global governance settings, and the fragmentation of the institutional landscape that weakens some approaches to issues and favours others. As I argue below, each of these explanations is important in explaining the continued dominance of the narrative that views trade liberalization as essential for sustainability. These forces interact with and reinforce each other in ways that lock in the dominant approach, with important consequences for the transformative capacity of

sustainability initiatives within global food governance.

Critical scholars have highlighted the ways in which power and interests play important roles in determining global food and environmental governance outcomes. Rules and institutions in these governance arenas tend to take shape in ways that serve the interests of powerful states and transnational corporations (Clapp 2012; McKeon 2015). These governance structures are seen by many scholars to be mechanisms that reinforce opportunities for the accumulation of capital, thus reinforcing the power of certain players in the international system (McMichael 2009, 2011; Newell 2012). This work highlights ways in which powerful actors ensure that rules that serve their own interests are the ones that dominate the agenda (e.g. Fuchs 2005). These strategies include the exercise of their structural power in the broader economic system, which can be made apparent through threats to exit governance arenas if the rules do not suit them appropriately. The exercise of structural power often takes place at the time of agenda-setting in new governance arrangements, but can also take the form of ‘forum shifting’ where powerful actors seek out new governance arrangements that better suit their needs (Margulis 2015). Powerful actors also employ tools such as lobbying in rules-setting arenas, as well as the use of discursive framing around key issues (Clapp and Fuchs 2009).

Ideas are also important forces in explaining the shape of global governance outcomes (Finnemore and Sikkink 1998 Bernstein 2000), including global food and agriculture governance (Margulis 2013; Clapp 2015). As noted above, powerful actors often use discursive framings as a strategy to give legitimacy to their own ideas about how to address global problems. Ideas and discourses also shape political processes in broader ways that lock in certain approaches to governing issue areas that can preclude different ways of conceptualizing issues. The notion of ‘sustainable development’, for example, was a powerful idea that emerged out of the Brundtland Commission in the late 1980s, and in effect was a ‘merger’ of what were previously seen as competing ideas of economic growth and environmental protection. This ‘compromise of liberal environmentalism’ (Bernstein 2000), for example, has since become institutionalized in governance frameworks for addressing major environmental issues, from climate change, to biodiversity, to voluntary sustainability initiatives. The mechanism by which this idea came to be so prominent was tied to the ways in which new norms and ideas articulate with broader or longer-standing norms that have already gained legitimacy in the international system, such as trade liberalization (Bernstein 2001, p. 8). Although linking new norms to existing ones can raise the profile of the new norms and move them up the agenda in global governance arenas, it also influences the ways in which new norms are interpreted and operationalized (Bernstein 2001). Different norms have also been connected in the food governance arena, including the linkage of food security and the right to food, affecting how both are interpreted (Margulis 2013).

Institutional dynamics also provide important insights to outcomes in global food governance (Young 2002, 2010). Many issue areas in the global arena lack a singular governing body, and instead are governed by a range of institutions in a ‘regime complex’, that is often characterized by fragmentation among the different governance arrangements on that issue area (Biermann et al. 2009; Zelli and Van Asselt 2013). Complex and fragmented governance arenas can have diverse effects, depending on their dynamics. Fragmented governance within a given issue area can promote positive synergies, can lead to greater cooperation, or they can lead to conflict and dysfunction when those arrangements contradict one another (Biermann et al. 2009). The WTO is often identified as an institution that conflicts with those in the environmental sphere, which overshadows others due to its institutional structure that includes binding rules and a dispute resolution mechanism (Biermann 2000). Other governance arenas are often portrayed as being “in the shadow” of the WTO as a result (Newell and Mackenzie 2004). Global food governance is unusual in that it is characterized by a regime complex that spans not just food oriented institutions such as the FAO and CFS, but also trade and human rights governance arrangements (Margulis 2013). It also includes informal and voluntary industry-led governance arrangements that have emerged in recent years, creating tensions between private and state based initiatives (Barling and Duncan 2015). The internal decision-making processes of institutions also matter, where organizations that are closed and driven by power politics, such as the WTO, are less open to new ideas and approaches than institutions that are more open and participatory, including a role for civil society input, such as the CFS (McKeon 2015).

My intention here is not to privilege any one of these approaches in explaining why trade liberalization is consistently presented as source of sustainability in food system governance. Rather, my aim is to illustrate the dynamics between institutional settings, ideational norms and material interests within governance arenas draws. Each of these forces offers important insights into political outcomes, and they interact with one another in important ways in arenas of global governance and political economy (e.g. Cox 1981; Williams 2005; Clapp 2012; Margulis and Porter 2013). Examining Together, they can help to explain why it is that the dominant narrative persists in governance frameworks, despite its inherent weaknesses.

To begin with the institutional setting, there is a complex range of governance institutions and arrangements that are relevant for setting rules regarding sustainability in the global food system. These include not just the governance arrangements that are prominent in the food sphere (FAO and CFS), but also include those in the economic sphere (the WTO, G20, and private market-based voluntary measures), as well as environmental sphere (e.g. the UNFCCC and the Biosafety Protocol). It is not just that these institutions are fragmented because they are spread across ostensibly different 'issues areas' and that food systems are integral to each. But there is there is an imbalance *across* this institutional landscape where governance institutions in the economic sphere have more clout than others in global governance more broadly, largely due to the strong internal institutional coherence and legal weight of the WTO.

These institutions in the economic sphere also have a a tighter fit with each other in ideational terms, while the ideas that form the basis of the institutions in the other spheres are more diverse. This is because the ideas that underpin the economic institutions are concentrated in neoclassical economic theory that is not challenged internally, whereas food and environmental governance spheres are more interdisciplinary in their approach to the issues and constantly bringing in new ways of approaching complex problems that challenge previous understandings of those problems. The existence of pre-existing norms of trade liberalization and liberal environmentalism in the WTO, as well as in international environmental agreements, also set the ground for a transfer of the norm of 'liberal environmentalism' to new food governance arrangements in an unproblematic way. In other words, the compromise had already been worked out between trade liberalization and environmental sustainability in other institutional settings, and it was simply overlaid onto the newly reformed CFS and at the World Summit on Food Security that adopted the Rome Principles for Sustainable Food Security.

In this context, it has been relatively easy for powerful interests to ensure that sustainability norms in food governance arenas are articulated in ways that support trade liberalization. Indeed, the text of each of these governance arenas reinforces the WTO's legitimacy and authority on the issue, despite the fact that the WTO is not an environmental organization, nor a food security organization. This situation leaves little room for maneuver to suggest new governance approaches that challenge the dominant norms or institutions within the regime complex.

Conclusion

This paper has shown that trade liberalization is promoted across a range of governance forums as central ingredient to achieving a more sustainable and resilient food systems. The norms of both trade liberalization and food system sustainability have been effectively linked in global governance arenas that matter for the food sector and have formed a dominant narrative that food system sustainability requires liberal and open international trade. The rationale behind this norm-linkage draws on long-standing economic trade theory and economic notions of efficiency. Critics have effectively challenged the dominant narrative, not only providing alternative models for food system sustainability that do not rely extensively on trade, but also by demonstrating that the narrative itself suffers from internal inconsistencies that raise questions about its ability to deliver what it promises. Although many of these governance settings have adopted some of the key terms and concepts of the critics, such as resilience, ecosystem services, and agroecology, these ideas have now been embedded

in the dominant narrative that is locked in a framework of a liberal and open trade regime. The persistence of the dominant narrative, even in the face of its weaknesses, is the product of dynamics around ideas, institutions, material interests in governance arenas.

In this context, it is not surprising that global governance for sustainability in the food system has tended to come in the form of broad aspirational statements and voluntary measures, since these initiatives do not challenge the dominant norm of trade liberalization. As such, the transformative potential of for sustainability initiatives in the food sector has been seriously curtailed, as the environmental problems associated with the operation of the globalized food system are not easily dealt with by measures that do not confront that system directly. Measures that provide greater flexibility to deal with trade-related market failures that result in environmental degradation, for example, could be useful tools for states that are particularly affected by the ecological hot spots linked to a concentration in export crop production. A border tax for carbon adjustments could also be useful in encouraging more sustainable food trade. A more thorough examination of the potential to use the general exceptions rule of the GATT, Article XX, for environmental problems associated with food trade, could prove useful.

The current situation, and the hurdles that must be gotten past to bring change, present a dilemma for advocates of food systems sustainability. Some have opted focus on building sustainable food systems from the ground up, at the local scale (e.g. Blay-Palmer et al. 2015). The food sovereignty movement, for example, has rejected the legitimacy of the WTO and has opted not to engage with it, instead focusing on local responses instead (Desmarais 2007). This is important work, but building sustainable food systems at the local level will continued to face challenges if the structures of the global economy are pushing in the other direction. And as Burnett and Murphy have pointed out, there are many small farmers in the world whose livelihoods depend on agricultural exports, for whom local food system work may not include consideration of their needs (Burnett and Murphy 2014).

Sustainability advocates can also pursue change in the structures of global governance. Such efforts can help to reshape the interpretation of norms and rules in ways that unlock their potential to bring transformative change that can support sustainable food systems, even those that involved trade. As this analysis has shown, the WTO is a key location where a change in the rules could influence the rules structures in a host of other governance arenas working on food sustainability issues. The WTO has been deadlocked for 15 years over questions of policy space for food security, and pressuring it to open further policy space for food sustainability measures could take decades before any change along these lines is realized. But it is important to remember that the norm of agricultural trade liberalization, although dominant in food system governance today, has only really been dominant in the past 20-30 years. Advocating for ‘food exceptionalism’ on sustainability grounds may gain currency as climate change challenges the resilience of the sector.

International norms are constantly evolving, shifting, and colliding (Halliday and Shaffer 2015). Norm change can seem to take place at a glacial pace, and then it can change all at once in a global cascade (Finnemore and Sikkink 1998). A strong ideational articulation of the need for change is a crucial part of advocacy campaigns for norm changes, along with a willingness to engage with global institutions that implement those ideas, and convincing powerful actors that adopting new norms is in their interest. This is no small task, but then again, perhaps worth taking when the stakes are so high.

References

- Altieri, Miguel A. 2002. “Agroecology: The Science of Natural Resource Management for Poor Farmers in Marginal Environments.” *Agriculture, Ecosystems & Environment* 93 (1–3): 1–24.
- Altieri, Miguel A., and Clara I. Nicholls. 2008. “Scaling up Agroecological Approaches for Food Sovereignty in Latin America.” *Development* 51 (4): 472–80.
- Baldos, Uris Lantz C., and Thomas W. Hertel. 2015. “The Role of International Trade in Managing Food Security Risks from Climate Change.” *Food Security* 7 (2): 275–90.
- Bernstein, Steven. 2001. *The Compromise of Liberal Environmentalism*. New York: Columbia University Press

- Bernstein, Steven. 2002. "Liberal Environmentalism and Global Environmental Governance." *Global Environmental Politics* 2 (3): 1–16.
- Bhagwati, Jagdish N. 1993. "The Case for Free Trade." *Scientific American* 269 (5): 42–47.
- Biermann, F., 2001. The emerging debate on the need for a world environment organization: A commentary. *Global Environmental Politics*, 1(1), pp.45-55.
- Biermann, Frank, Philipp Pattberg, Harro van Asselt and Fariborz Zelli. 2009. "The Fragmentation of Global Governance Architectures: A Framework for Analysis." *Global Environmental Politics* 9 (4): 14–40.
- Blay-Palmer, Alison, Roberta Sonnino and Julien Custot. 2015. A Food Politics of the Possible? Growing Sustainable Food Systems through Networks of Knowledge, *Agriculture and Human Values*. February.
- Bukovansky, Mlada. 2010. Institutionalized Hypocrisy and the Politics of Agricultural Trade. In *Constructing the International Economy*, edited by Rawi Abdelal, Mark Blyth, and Craig Parsons, 68-89. Ithaca, NY: Cornell University Press.
- Burnett, Kim, and Sophia Murphy. 2014. "What Place for International Trade in Food Sovereignty?" *The Journal of Peasant Studies* 41 (6): 1065–84.
- Campbell, Bruce, Wendy Mann, Ricardo Melendez-Ortiz, Charlotte Streck, and Timm Tennigkeit. 2011. Agriculture and Climate Change: A Scoping Report. Meridian Institute. At: <http://www.climatefocus.com/sites/default/files/Agriculture%20and%20Climate%20Change%20Scoping%20Report.pdf>
- Cartagena Protocol on Biosafety (CPB). 2000. <https://www.cbd.int/doc/legal/cartagena-protocol-en.pdf>
- Chang, Ha-Joon. 2009. *Rethinking Public Policy in Agriculture: Lessons from Distant and Recent History*. Rome: FAO.
- Clapp, Jennifer, and Doris Fuchs, eds. 2009. *Corporate Power in Global Agrifood Governance*. Cambridge, MA: MIT Press.
- Clapp, Jennifer, and Sophia Murphy. 2013. The G20 and Food Security: A Mismatch in Global Governance? *Global Policy* 4 (2): 129-138.
- Clapp, Jennifer. 2012. *Hunger in the Balance: The New Politics of International Food Aid*. Ithaca: Cornell University Press.
- Clapp, Jennifer. 2014a. "Trade Liberalization and Food Security: Examining the Linkages" Quaker UN Office: http://www.quno.org/sites/default/files/resources/QUNO_Food%20Security_Clapp.pdf
- Clapp, Jennifer. 2014b. "Financialization, Distance and Global Food Politics." *The Journal of Peasant Studies* 41 (5): 797–814.
- Clapp, Jennifer. 2015. Food Security and Contested Agricultural Trade Norms. *Journal of International Law and International Relations*. Details..
- Committee on World Food Security. 2014. Global Strategic Framework for Food Security & Nutrition (GSF). Online at: <http://www.fao.org/3/a-av031e.pdf>
- Cox, R. W. 1981. "Social Forces, States and World Orders: Beyond International Relations Theory." *Millennium - Journal of International Studies* 10 (2): 126–55.
- D'Odorico, Paolo, Joel A. Carr, Francesco Laio, Luca Ridolfi, and Stefano Vandoni. 2014. "Feeding Humanity through Global Food Trade: D'ODORICO ET AL." *Earth's Future* 2 (9): 458–69.
- Daly, Herman E. 1993. The Perils of Free Trade. *Scientific American* 269 (5): 50-57.
- Desmarais, Annette. 2007. *La Vía Campesina: Globalization and the Power of Peasants*. Halifax, NS: Fernwood Publishing.
- ETC Group. 2013. "With Climate Change, Who Will Feed Us?" At: http://www.etcgroup.org/sites/www.etcgroup.org/files/Food%20Poster_Design-Sept042013.pdf
- Fader, Marianela, Dieter Gerten, Michael Krause, Wolfgang Lucht, and Wolfgang Cramer. 2013. "Spatial Decoupling of Agricultural Production and Consumption: Quantifying Dependences of Countries on Food Imports due to Domestic Land and Water Constraints." *Environmental Research Letters* 8 (1): 014046.
- Finnemore, Martha and Kathryn Sikkink. 1998. International Norm Dynamics and Political Change. *International Organization* 52 (4): 887–917.
- Fletcher, Ian. 2010. "Dubious Assumptions of the Theory of Comparative Advantage." *Real World Economics Review*, no. 54: 94–105.
- Foley, Jonathan A, Navin Ramankutty, Kate A Brauman, Emily S Cassidy, James S Gerber, Matt Johnston, Nathaniel D Mueller, et al. 2011. "Solutions for a Cultivated Planet." *Nature* 478 (7369): 337–42.

- Fortin, Elizabeth. 2013. "Transnational Multi-Stakeholder Sustainability Standards and Biofuels: Understanding Standards Processes." *Journal of Peasant Studies* 40 (3): 563–87.
- Fuchs, D., 2005. Commanding heights? The strength and fragility of business power in global politics. *Millennium-Journal of International Studies*, 33(3), pp.771-801.
- Fuchs, Doris, and Agni Kalfagianni. 2010. "The Causes and Consequences of Private Food Governance." *Business and Politics* 12 (3).
- Fuchs, Nikolai and Ulrich Hoffmann. 2013. Ensuring Food Security and Environmental Resilience – the Need for Supportive Agricultural Trade Rules. *UNCTAD Trade and Environment Review*, 266-275. Geneva: UNCTAD.
- G20. 2015. G20 Action Plan on Food Security and Sustainable Food Systems. Online at: <http://www.mofa.go.jp/files/000111212.pdf>
- Gallagher, Kevin P. 2009. "Economic Globalization and the Environment." *Annual Review of Environment and Resources* 34 (1): 279–304.
- Garnett, Tara. 2013. "Food Sustainability: Problems, Perspectives and Solutions." *The Proceedings of the Nutrition Society* 72 (1): 29–39.
- Godfray, H. C. J., and T. Garnett. 2014. "Food Security and Sustainable Intensification." *Philosophical Transactions of the Royal Society B: Biological Sciences* 369 (1639): 20120273–20120273.
- Godfray, H. Charles J., John R. Beddington, Ian R. Crute, Lawrence Haddad, David Lawrence, James F. Muir, Jules Pretty, Sherman Robinson, Sandy M. Thomas, and Camilla Toulmin. 2010. "Food Security: The Challenge of Feeding 9 Billion People." *Science* 327 (5967): 812–18.
- Gonzalez, Carmen G. 2011. "An Environmental Justice Critique of Comparative Advantage: Indigenous Peoples, Trade Policy, and the Mexican Neoliberal Economic Reforms." *University of Pennsylvania Journal of International Law* 32 (2): 723–803.
- Halliday, Terence and Gregory Shaffer. 2015. *Transnational Legal Orders*. Cambridge University Press.
- Hertel, Thomas W., Navin Ramankutty, and Uris Lantz C. Baldos. 2014. Global Market Integration Increases Likelihood That a Future African Green Revolution Could Increase Crop Land Use and CO2 Emissions. *Proceedings of the National Academy of Sciences* 111 (38): 13799-13804.
- Holt-Giménez, Eric, and Miguel A. Altieri. 2013. "Agroecology, Food Sovereignty, and the New Green Revolution." *Agroecology and Sustainable Food Systems* 37 (1): 90–102.
- Isakson, S. Ryan. 2013. "The Financialization of Food: A Political Economy of the Transformation of Agro-Food Supply Chains." http://www.iss.nl/fileadmin/ASSETS/iss/Research_and_projects/Research_networks/ICAS/ICAS_Review_Paper_5_Isakson.pdf.
- Krasner, Stephen. (1982). Structural causes and regime consequences: regimes as intervening variables. *International organization*, 36(02), 185-205.
- Lamy, Pascal. 2011. Trade is Vital for Food Security, Lamy tells Agricultural Economists. Speech to XIIIth Congress of the European Association of Agricultural Economists, August 30. Zurich. Available at https://www.wto.org/english/news_e/sppl_e/sppl203_e.htm, accessed March 25, 2015.
- Lamy, Pascal. 2012. Pascal Lamy Speaks on the Challenge of Feeding 9 Billion People. Speech at The Economist Conference "Feeding the World", February 8. Geneva. Available at http://www.wto.org/english/news_e/sppl_e/sppl216_e.htm, accessed March 25, 2015.
- Lamy, Pascal. 2013. *The Geneva Consensus: Making Trade Work for Us All*. Cambridge, UK: Cambridge University Press.
- MacDonald, Graham K., Kate A. Brauman, Shipeng Sun, Kimberly M. Carlson, Emily S. Cassidy, James S. Gerber, and Paul C. West. 2015. "Rethinking Agricultural Trade Relationships in an Era of Globalization." *BioScience*.
- Margulis, Matias E. 2013. "The Regime Complex for Food Security: Implications for the Global Hunger Challenge." *Global Governance: A Review of Multilateralism and International Organizations* 19 (1): 53–67.
- Margulis, Matias E., and Tony Porter. 2013. "Governing the Global Land Grab: Multipolarity, Ideas, and Complexity in Transnational Governance." *Globalizations* 10 (1): 65–86.
- Martinez-Alier, Joan. 2011. "The EROI of Agriculture and Its Use by the Via Campesina." *Journal of Peasant Studies* 38 (1): 145–60.

- McCalla, Alex F. 1969. Protectionism in International Agricultural Trade, 1850-1968. *Agricultural History* 43 (3): 329-344.
- McKeon, Nora. 2009. *The United Nations and Civil Society: Legitimizing Global Governance – Whose Voice?* London: Zed.
- McKeon, Nora. 2015. *Food Security Governance: Empowering Communities, Regulating Corporations.* London: Routledge.
- McMichael, Philip. 2009. “A Food Regime Genealogy.” *Journal of Peasant Studies* 36 (1): 139–69.
- McMichael, Philip. 2011. “Food System Sustainability: Questions of Environmental Governance in the New World (dis)order.” *Global Environmental Change* 21 (3): 804–12.
- McMichael, Philip. 2013. “Value-Chain Agriculture and Debt Relations: Contradictory Outcomes.” *Third World Quarterly* 34 (4): 671–90.
- Meridian Institute. 2011. Agriculture and Climate Change Policy Brief: Main Issues for UNFCCC and Beyond. At https://ccafs.cgiar.org/sites/default/files/assets/docs/accpolicy_english.pdf
- Moon, Wanki. 2011. Is Agriculture Compatible with Free Trade? *Ecological Economics* 71 (November): 13-24.
- Murphy, Sophia, David Burch and Jennifer Clapp. 2012. *Cereal Secrets.* Oxfam.
<http://blogs.oxfam.ca/sites/blogs.oxfam.ca/files/rr-cereal-secrets-grain-traders-agriculture-03082012-en.pdf>.
- Murphy, Sophia. 2006. “Concentrated Market Power and Agricultural Trade.” *Ecofair Trade Dialogue, Discussion Papers*, no. 1. http://iatp-web.us/iatp/files/451_2_89014.pdf.
- Murphy, Sophia. 2008. “Globalization and Corporate Concentration in the Food and Agriculture Sector.” *Development* 51 (4): 527–33.
- Nepstad, Daniel C., Claudia M. Stickler, and Oriana T. Almeida. 2006. “Globalization of the Amazon Soy and Beef Industries: Opportunities for Conservation.” *Conservation Biology* 20 (6): 1595–1603.
- Newell, Peter, and Ruth Mackenzie. 2004. “Whose Rules Rule? Development and the Global Governance of Biotechnology.” *IDS Bulletin* 35 (1): 82–91.
- Newell, Peter. 2012. *Globalization and the Environment: Capitalism, Ecology and Power.* Cambridge: Polity.
- OECD. 2013. The Role of Food and Agricultural Trade in Ensuring Domestic Food Availability, in *Global Food Security: Challenges for the Food and Agricultural System.* Paris: OECD. Available at <http://dx.doi.org/10.1787/9789264195363-en>, accessed June 2, 2015.
- Porter, J.R., L. Xie, A.J. Challinor, K. Cochrane, S.M. Howden, M.M. Iqbal, D.B. Lobell, and M.I. Travasso, 2014. Food Security and Food Production Systems. In *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by Christopher B. Field, Vincente R. Barros, David Jon Dokken, Katharine J. Mach, Michael D. Mastrandrea, et al., 485-534. New York, NY: Cambridge University Press.
- Potter, Clive, and Mark Tilzey. 2007. Agricultural Multifunctionality, Environmental Sustainability and the WTO: Resistance or Accommodation to the Neoliberal Project for Agriculture? *Geoforum* 38 (6): 1290–1303.
- Prasch, Robert E. 1996. “Reassessing the Theory of Comparative Advantage.” *Review of Political Economy* 8 (1): 37–56.
- Prasch, Robert. 1996. Reassessing the Theory of Comparative Advantage. *Review of Political Economy* 8 (1): 37-56.
- Puma, Michael J, Satyajit Bose, So Young Chon, and Benjamin I Cook. 2015. “Assessing the Evolving Fragility of the Global Food System.” *Environmental Research Letters* 10 (2): 024007.
- Rosset, Peter M. 2006. *Food Is Different: Why We Must Get the WTO Out of Agriculture.* Halifax, NS: Fernwood Publishing.
- Sachs, Wolfgang, and Tilman Santarius, et al. 2007. *Slow Trade - Sound Farming: A Multilateral Framework for Sustainable Markets in Agriculture.* Ecofair Trade Dialogue. Available at http://www.misereor.org/fileadmin/redaktion/slow_trade_sound_farming.pdf, accessed March 25, 2015.
- Sakuyama, Takumi. 2005. “A Decade of Debate over Non-Trade Concerns and Agricultural Trade Liberalisation: Convergences, Remaining Conflicts and a Way Forward.” *International Journal of Agricultural Resources, Governance and Ecology* 4 (3): 203–15.

- Schmitz, Christoph, Anne Biewald, Hermann Lotze-Campen, Alexander Popp, Jan Philipp Dietrich, Benjamin Bodirsky, Michael Krause, and Isabelle Weindl. 2012. Trading More Food: Implications for Land Use, Greenhouse Gas Emissions, and the Food System. *Global Environmental Change* 22 (1): 189-209.
- Schumacher, Reinhard. 2013. "Deconstructing the Theory of Comparative Advantage." *World Economic Review* 2: 83-105.
- Schumacher, Reinhard. 2013. Deconstructing the Theory of Comparative Advantage. *World Economic Review* 2: 83-105.
- Skogstad, Grace D. 1998. Ideas, Paradigms and Institutions: Agricultural Exceptionalism in the European Union and the United States. *Governance* 11 (4): 463-490.
- Sundkvist, Åsa, Rebecka Milestad, and AnnMari Jansson. 2005. "On the Importance of Tightening Feedback Loops for Sustainable Development of Food Systems." *Food Policy* 30 (2): 224-39.
- United Nations Environment Programme (UNEP) and World Trade Organization (WTO). 2009. Trade and Climate Change. At: https://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf
- United Nations Framework Convention on Climate Change (UNFCCC). 1992. http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
- United Nations. 2015. Sustainable Development Goals. Online at: <https://sustainabledevelopment.un.org/?menu=1300>
- Weis, Tony. 2010. "The Accelerating Biophysical Contradictions of Industrial Capitalist Agriculture." *Journal of Agrarian Change* 10 (3): 315-41.
- Williams, Marc. 2005. "The Third World and Global Environmental Negotiations: Interests, Institutions and Ideas." *Global Environmental Politics* 5 (3): 48-69.
- Wittman, Hannah, Annette Aurlie Desmaris, and Nettie Wiebe, eds. 2010. *Food Sovereignty: Reconnecting Food, Nature and Community*, Halifax, NS: Fernwood Publishing.
- World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington, DC: World Bank. Available at http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf, accessed March 25, 2015
- World Summit on Food Security. 2009. "Declaration of the Rome Summit on World Food Security" (Rome Principles on Sustainable Food Security). Online at: <http://www.mofa.go.jp/policy/economy/fishery/wsfs0911-2.pdf>
- Young, Oran R., 2002. *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. Cambridge, MA: MIT press.
- Young, Oran R., 2010. Institutional Dynamics: Resilience, Vulnerability and Adaptation in Environmental and Resource Regimes. *Global Environmental Change*, 20(3), pp.378-385.
- Zelli, Fariborz, and Harro van Asselt. 2013. "Introduction: The Institutional Fragmentation of Global Environmental Governance: Causes, Consequences, and Responses." *Global Environmental Politics* 13 (3): 1-13.

**Global governance/politics,
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