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The dynamics of the contemporary governance of the world's food supply and the challenges of policy redirection.

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Abstract

This paper identifies the governance dynamics and the international policy architecture that frame contemporary policy actions in relation to the food supply and elaborates on key governance tensions that policy makers need to address to feed the world's growing population by the mid-21st century. Two main dimensions of governance are examined: the international policy space, composed of nation states collaborating through international regimes with other international actors; and the private corporate led governance of the food supply. At the international levels, policy discontinuities and gaps are identified, for example between international environmental regimes and food security institutions. The so-called Washington Consensus has given way to a post Washington divergence of policy approaches amongst states, reflecting the "varieties of capitalism" thesis, and a more multi-polar international policy space over food and agriculture. In the past decade, policy makers have engaged industry in the international pursuit of sustainability, with a focus on policy actions around achieving sustainable consumption and production of food. The resulting contemporary governance trajectories are providing a disjointed but widespread set of policy guidelines with some evidence of convergence. These governance forms are helping to shape the terms of debate but the reliance on industry mediated food sustainability will need to be augmented by stronger political leadership from the individual nation states. Policy advances will need to build on the more collaborative and inclusive forms of governance that are being put in place, and continue to improve the balance of sustainable production and consumption of food.

Keywords

Governance; food supply; food policy; food sustainability

1. Introduction

Scientific and policy platforms have identified the challenges of feeding an estimated world population of 9 billion people by 2050. Yet, today while enough food is produced to feed the world's 7 billion people, close to 1 billion people remain hungry and undernourished, and over 1.4 billion adults, and rising, are obese and over-fed with the wrong diets (WHO 2012). In short, the contemporary food supply and its provisioning are failing to meet a substantial proportion of the world's nutritional consumption needs. This points to market failures in the food production-consumption supply relationship but also raises questions about the ways that public policy and public and private sector governance are intervening in and managing the food supply. Moreover, maintenance of the current supply, as well as its expansion, faces a range of well-elaborated production and consumption challenges. These "new fundamental" challenges refer to pressures on land¹ and ecosystems, natural resource depletion (including carbon based energy, phosphorous, soil, water aquifers, fisheries) and societal pressures, such as urbanisation, population growth and diet-related diseases, that impact upon both the supply of and demand for food (UNEP 2012; Foresight 2011).

Achieving a balance of sustainable consumption and production (SCP) has been a particular focus for some international and national policy-making institutions since the World Summit for Sustainable Development in 2002. For the past decade, policy strategies for achieving more sustainable consumption and production of food have been pursued. Public policy relies increasingly upon mobilising multiple actors from the private and civil society sectors as well as governmental actors to achieve policy goals. The public-private interface of governance is of great significance in the provision of food, which is heightened in the face of the contemporary and projected challenges. The ways that policy makers intervene in the food supply merit attention, as the ways that these approaches are developing and the forms that they are taking will shape the management of the food supply in the next decades (Eriksen et al. 2010; Obersteiner et al. 2010).

The aim, here, is to assess the main trends in the contemporary governance of the world's food supply and to identify the challenges that policy makers face in directing, or redirecting, the food system to meet the needs of the world by 2050. The term food supply covers not just policies concerning food security, but also trade, and international environmental regimes that govern important aspects of the sustainability of the natural resource base and ecosystems upon which that food supply depends. This definition encompasses the need for policy-makers to harness collaborative modes of governance to address the problems of not only feeding a growing population, but for food consumption to be ecologically sustainable and to promote better health (Lang and Barling 2012; UNEP 2012).

¹ The focus, here, is on the governance of the food supply, and while we acknowledge the impact of biofuel production and policy supports on land availability for food production and nutrition (Pimentel et al. 2009), a more detailed examination of pressures on agricultural land use is outside the scope of this paper.

2. Policy and governance of the food supply: key dimensions and methods

Three main areas have been identified as central to the evaluation of key dynamics of the contemporary governance of the food supply, their relation to public policy making and how they may evolve in the coming decades (Ingram et al. 2013). Firstly, nation states are key policy decision-makers at international and regional levels over the governance of the food supply. States make strategic policy decisions based on their conceptions of their national interests over their food supply. These decisions see food supply as a goal to be achieved, but also may use food as a tool to achieve other policy goals, for example in relation to foreign policy. Secondly, at the global level of policy-making, the systems of international multi-lateral agreements that have evolved in relation to the food supply are important. Here, a review of the agendas of the main international multi-lateral regimes identifies the degree to which such actions are coordinated or disjointed across the areas of food security, trade and the international environmental agreements that relate to food. Finally, in many ways the supply of food today is determined by private forms of governance, as food supply chains are undergoing increasing corporate concentration and the international reach of these corporations is extended through foreign direct investment (FDI) in different national and regional markets (Regmi and Gehlhar 2005). The role of private governance is recognised by governments which seek to meet policy ends through soft law, involving governance modes of voluntary and cooperative public-private actions. For example, over the past decade sustainable consumption-production policy initiatives for food have deployed some of these governance modes, as is explained in more detail below. The explosion in the number and variety of food and beverage product certification schemes has been a feature of governance trends in the food sector, moving rapidly beyond food safety assurance to embrace sustainability criteria from fair trade to natural resource protection, such as the catch from sustainable fisheries or sustainable palm oil production. Global consumption-production networks are linking developed world consumers with developing world producers, led by the work of development and environmental NGOs, sometimes in tandem with industry (e.g. Marine Stewardship Council), and widening the range of actors involved in private governance (Oosterveer 2007).

In an era of globalisation, the rules that impact upon the supply of food are negotiated and/or determined by the interaction of the three governance areas of international, national, and private sector. While the primary location of public policy decision-making is at the level of the nation state, national governments operate in a contemporary policy environment of multilevel governance (Marks et al. 1996; Scharpf 1997), with governing authority existing both below, devolved to federal, state and local government levels, and above, as national governments have pooled sovereignty over past decades in international multi-lateral agreements and regimes (Florini and Jairaj 2014; Sassen 2003). There are international regimes that address trade and standards for agricultural and food commodities and products, as well as agreements targeting environmental challenges which impact upon the food supply, such as climate change and maintenance of biodiversity and other natural resources. These regimes do not necessarily produce harmonious outcomes; rather, they are diplomatically negotiated agreements and instruments that contain ambiguities and discontinuities in their legal outputs (as with the World Trade Organisation's Agreement on Agriculture). They reflect the *realpolitik* resulting from the asymmetries of power amongst states and between alliances of states (Coleman et al.

2004). The Agreement on Agriculture's rules reflected the dominant position of the US (and Canada) and the European Union and its member states at the time of the Uruguay Round of negotiations. Importantly, the nation state is a key broker of interests from the industrial and commercial sectors, and civil society organisations and public opinion at the country level. The state takes its interpretation of these interests into international negotiations. In international regimes, states interact with other actors such as international organisations, international trade associations, NGOs and epistemic communities, as well as individual corporations able to attend and lobby in such international arenas, sacrificing some autonomy and authority, while remaining the key decision-makers in the voting processes. The future of the world's food supply and its policy trajectories are determined at and through the interactions of these multi-levels of governance.

In the late twentieth century, scholars and policy-makers declared the existence of a dominant model of governance. The so-called Washington Consensus was propagated as the template for economic development to less developed countries (Stiglitz 2001). International development actors (e.g. the World Bank) directed developing countries to liberalise state-organised agricultural and food production and their support systems such as national commodity boards and marketing and extension services and price supports. These changes were rationalised on the basis of their capacity to generate economic growth from earnings and investment of foreign capital, partly through exporting food commodities and fresh produce which, in turn, impacted upon established national and local food provisioning systems.

The focus on this "model" tended to mask the fact that substantial "varieties of capitalism" existed between countries in the relationship of the role of the state to the market and economic liberalisation (Hall and Soskice 2001). For example, the Development State model of East Asian countries, such as Japan and South Korea, pursued national state-directed strategies for economic growth, deploying protectionist tariffs. These were deemed to be in the national interest and led to economic growth (Stiglitz 2001). Far from consensus, the food policies of individual states reflect differing institutional pathways and political cultural developments (Hall and Soskice 2001). Nor is such policy-making a linear process, as state governments respond to both domestic and international lobbying and changing terms of public discourse in their decision-making.

In the second decade of the 21st century the Washington Consensus has passed, but no international policy consensus has come in to supplant it. Despite attempts at a revival in 2013, the WTO-based trade liberalisation project has failed to develop since the breakdown of talks in 2008. Revising the international trade rules for food and agriculture remains a seemingly insurmountable diplomatic hurdle. We are now in a period of post-Washington divergence, with the emergence of important players, such as the so-called BRIC nations of Brazil, India, Russia and China, in the global political economy and on the diplomatic stage. These countries are engaging in South-South models of co-operation over food trade and development. In food supply terms, these countries are increasingly important players both individually and as a group. By 2010, it was estimated that these countries generated over 40% of agricultural value added in the world economy (Brosig et al. 2013) as well having a combined consumption market of close to 3 billion people. The BRIC(S) countries (South Africa was included from 2010) instituted joint diplomatic summits to mark a more

multi-polar landscape in international political economy. The first summit strongly critiqued the existing international efforts on food security and the rules and operation of the international trade regimes, as well as identifying the environmental dimensions that need addressing: “Global climate change and natural disasters have direct implications on food security through changes in agro-ecological conditions” (President of Russia 2009). The BRICS’ summits mark an important step in international economic diplomacy and development policy and are a good example of the increase in South-South international cooperation, offering a potential separate channel for development and agriculture policy from the avenues pursued by the advanced capitalist economies which are infused with the vestiges of colonial heritage. The BRICS launched the New Development Bank, combining features of the World Bank and International Monetary Fund. Later that year, China and India, along with 19 other countries, backed a USD\$100 billion Asian Infrastructure Investment Bank (AIIB) to challenge the World Bank and Asian Development Bank (The Economist 2014). These developments illustrate that the global economic order is increasingly marked by increasing multi-polarity, rather than upon a shared consensus. Consensus needs to be worked at and negotiated in more collaborative (and inclusive) international agreements.

Results

3. International regimes and the food supply: Fragmented governance

In global policy-making the governance challenges of the current and future food supply are debated across different international institutions and regimes. They rotate around specific multilateral rules-based agreements, from trade to climate change, and more informal meetings of self-selected economic groupings of states, such as the G7 or G8 and the G20, and the Organisation of Economic Cooperation and Development (OECD). This constellation of international agreements and regimes can be conceptualised as a transnational policy space for agriculture and food, with international regimes addressing different areas of activity acting as nodal points for policy (Coleman et al. 2004). In seeking to achieve particular goals, key international players engage in “forum shifting” across these different policy settings (Barling 2008). In what follows, we map out some of the main international regimes around food and agricultural trade, food security, climate change, biodiversity and sustainable development to illustrate the fragmented nature of the governance of the global food supply.

Few of these regimes take the food supply as their primary focus, but all have an impact on the governance of the food supply. Correspondingly, questions arise as to how integrated this transnational policy space is, and the extent to which the contemporary international arrangements are able to meet the need for “joined up” policy responses to the environmental, demographic and consumption challenges facing the supply of food, and access to this food in ways that are culturally and nutritionally appropriate. The WTO trade rules relating to agriculture cover food, plant safety and animal health and diseases, and state support for food production to the extent that such actions are non or minimally trade distorting. The WTO does not address environmental impacts of food production and trade.

In addition, the WTO fails to address more recent concerns about national food security, such as the amount of subsidisation allowed for national food stocks (Margulis 2014). Indeed, the WTO's Development Round of trade liberalisation negotiations had been stalled since 2008 on attempts to revise the terms of the Agreement on Agriculture, reflecting the importance of food and agriculture policy to national governments until late 2013. Subsequently, consensus to proceed with a trade facilitation agreement under the Development Round was vetoed by India, in the vanguard of the G33 of developing nations, over the failure to amend the rules on levels of subsidy of national food stocks (Miles 2014). It is not surprising that as a result international trade liberalisation agreements are being negotiated at bilateral and regional levels rather than at a global level.

At the same time, trade policies and standards are in some cases harming poor countries' capacity to develop their own agricultural systems (Braun and Islam 2008). Recognising the role of market failures in the food price spikes of 2007/8, in 2011, the Agricultural Ministers of the G20 called for the establishment of the Agricultural Market Information System (AMIS) as an inter-Agency Platform to enhance food market transparency and encourage coordination of policy action in response to market uncertainty situated in the FAO.

Calls for greater investment in agriculture (G8 2009; HLPE 2013; HLTF 2010) are increasingly attractive to investors. At a time of convergence of multiple crises (food, energy/fuel, climate change, financial crisis), agriculture and land presents opportunities for seemingly more secure investment opportunities (McMichael 2012). Proponents argue such investments will improve infrastructure and provide jobs but such claims have been contested but research undertaken by the FAO (2012a: 7) shows that "investors are targeting countries with weak land tenure security" and that investors tend to focus on the "poorest countries, and those that are also less involved in world food exchanges". Efforts to address these investments have taken many forms, including: the Voluntary Guidelines for the Responsible Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO 2012b); the Principles for Responsible Investment in Agriculture and Food Systems (CFS 2014); and the Principles for Responsible Agricultural Investment (FAO et al. 2010). The various principles are non-binding.

The governance frameworks for global food systems are, in many ways, based on past conditions, practices and understandings of how best to promote global food security (Clapp and Cohen 2009:6). Global organisations addressing food and agriculture (i.e., the so-called Rome-based UN Agencies, including the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD)) serve important but individual functions. There is a need both to assess and re-imagine the role of these organisations with respect to their capacity to comprehensively address emerging challenges related to food security and to effectively support related policy processes.

At the height of the 2007/8 food crisis there was "a unified call to define a new (form of) governance in the fight against world hunger" (Viatte et al. 2009: 2). This lent further support to efforts to reform the UN's Committee on World Food Security (CFS) "with the aim to become the central United Nations political platform dealing

with food security and nutrition” (CFS 2009: para. 2). The reformed CFS was tasked with six key roles: coordination at global level; policy convergence; support and advice to countries and regions; coordination at national and regional levels; promotion of accountability and best practices at all levels; and, development of a Global Strategic Framework (CFS 2009: paras. 5–6).

While not without challenges and limitations, the reformed CFS has arguably emerged as the most legitimate policy body capable of providing guidance and leadership on the development of sustainable food security policies. The endorsement by member states of the Voluntary Guidelines for the Responsible Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO 2012b), the Global Strategic Framework (CFS 2012a), and the Principles for Responsible Investment in Agriculture and Food Systems (CFS 2014) are examples of CFS output that can help guide food system actors and enhance policy coherence, despite the lack of implementation or enforcement capacity (Seufert 2013).

Conversely, the CFS role in integrating environmental concerns into food security policy remains weak. The CFS acknowledged the impact of climate change on small-scale producers and recognised the responsibility of governments to ensure that all policies and actions around food and climate change were consistent with the right to food (CFS 2012b). However, in this case, the Committee failed to live up to its mandate. Instead of serving as a platform for policy convergence and coherence, it simply offered support for other regimes, including the UN Framework for Climate Change Convention (UNFCCC) and the UN Convention on Biodiversity’s (CBD), effectively passing the responsibility back to these regimes. This is not to undermine the achievements of the CFS but, rather, to highlight the challenges it faces in fulfilling its own mandate within an environment of policy silos and “turf wars”.

Negotiations addressing food and climate change in negotiations of the UNFCCC have also been marginalised. Governments were meant to take a decision on how to integrate agriculture into the UNFCCC COP18 in 2012 but made limited progress, though the Kyoto Carbon reduction targets have arguably had some impact on food industries at national levels. The efficacy of global governance arrangements depends to a large degree on the related reactions of national-level policymakers (Benson et al. 2013). The CBD Nagoya Protocol obligates parties to consider the importance of genetic resources for food and agriculture for food security, again illustrating a failure of international bodies to articulate clear policy directives across food systems and the environment.

Global governance initiatives concerning the food supply are showing strong trends towards Private-Public Partnerships (PPPs). These partnerships are often hosted and coordinated by global-level institutions. They are used by the private sector and states to develop policies and programmes of mutual benefit. One example of such an arrangement is the New Alliance for Global Food Security Governance. The New Alliance is a partnership programme between African governments, members of the G8, and the private sector. The aim is to work together to accelerate investments in agriculture so as to improve productivity, livelihoods and food security for smallholder farmers. This New Alliance aims to transition 50 million people out of poverty over the next 10 years through sustained and inclusive agricultural growth. While such a transition is a necessary global policy objective, the organisational

structure of the New Alliance undermines previous commitments of Alliance members to coordinate action through the development of a Global Partnership housed within the UN and including of a wide range of stakeholders (CFS 2009; République Française 2010). By working outside of these partnership structures, the New Alliance can be seen as undermining efforts at improving policy coordination and coherence. Furthermore, in October 2014, Oxfam International left the leadership council of the New Alliance for Food Security and Nutrition, explaining that the Alliance was endorsing “large-scale models of investment, which have the potential to fundamentally change the landscape of African farming and exacerbate land dispossession for local communities, worsen inequality and damage the environment” (Gore 2014).

Despite almost unanimous agreement amongst key actors on the need to address environmental considerations and increasing calls to move away from “business as usual” (IAASTD 2009; UNCTAD 2013; UNEP 2012) in global food policies, and calls for increased coherence, global food governance institutions remain fragmented. While international institutions play a role in the governance of the food supply, they have proven inadequate and ineffective in supporting necessary transition towards sustainable policies. In many respects, this is due to sector-focused policy silos, heavy bureaucracy, overlapping mandates, a lack of implementation and enforcement capacity, and burdensome decision-making processes (Biermann et al. 2012). On the plus side, these regimes do have important roles to play including a normative function of providing a space for knowledge sharing; the coordination of policies and programmes so as to limit fragmentation and space for actors, including civil society actors, to engage and shape the international discourse, or to raise national grievances.

At the UN Conference on Sustainable Development (Rio+20), countries agreed to establish an intergovernmental process to develop “action-oriented, concise and easy to communicate” sustainable development goals (SDGs) to help drive the implementation of sustainable development (UN General Assembly 2012). Of the 17 goals proposed by the Open Working Group for Sustainable Development Goals (2014), Goal 2 is to “end hunger, achieve food security and improve nutrition and promote sustainable agriculture” by 2030, with a set of related actions attached. Similar targets have been negotiated and endorsed by states in the past (e.g., Millennium Development Goals (MDGs) and the World Food Summit Plan of Action) with little success. Yet the aspirational component of such goals should not be overlooked. While many of the MDGs will not be met by the 2015 deadline, they have been used to frame aspirational policy objective across scales of policy-making and have provided coherence for donors. Furthermore, they have been used effectively by international organisations, academics and civil society to pressure governments to take action around food, and other pressing social issues.

Indeed, the nature of multinational food regimes have structural implications and indirect effects on social norms and discourses (Pattberg 2012:103). It is therefore important to recognise that multinational regimes can play a key role in raising issues of equity, fairness, and accountability (Pattberg 2012: 103). The power of the CFS, for example, lies in its ability both to change the discourse of global food security policy by way of participatory governance processes, and to integrate environmental sustainability therein.

4. Private governance, corporations and the contemporary food supply

The governance of the food supply is also marked by increasing degrees of corporate concentration at different stages of the supply chain from farm-level input suppliers (for example, seeds and pesticides) to commodity traders and manufacturing, to retailing and food service. In many stages this increase in corporate concentration sits next to the existence of many small and medium enterprises, as in farming, manufacturing and retail. The majority of the world's food producers are subsistence and small scale. In developing countries they sit outside the main channels of the industrialised food commerce (FAO 2014). Indeed, food and feed commodities are largely domestically traded with just 15% (by value) of agricultural commodities traded internationally and 6% of processed foods (Regmi and Gehlhar 2005). However, major food manufacturers and retailers have FDI in a large number of countries, where they source ingredients from national suppliers as well as from elsewhere. For example, in the mid-2000s, three of the big four food manufacturers - Kraft, Nestle and Unilever - had a presence in 140 different countries (Regmi and Gehlhar 2005). FDI is a way of gauging the global spread of corporate presence. The spread of FDI has occurred across a wide range of countries, beyond the OECD. From 1998-2008 FDI inflows to developed countries doubled, while those for developing world countries tripled (UNCTAD 2009). In 2013 there was a marked expansion of FDI in the retail sector in less developed countries as well as those with more rapidly expanding urban markets countries (UNCTAD 2014). The standards set by these large corporations, and their products, are increasingly impacting upon the food provision in developing countries. Developing countries' domestic food markets are becoming increasingly formalised as the efficient corporate supply chains aim their products beyond the middle class affluent consumers targeting the bottom of the wealth pyramid (Hammond et al. 2007).

Food supply chains have become more closely managed and integrated with the introduction of modern supply chain logistics, including just-in-time stock controls delivered from regional distribution hubs, and increased traceability and tracking of food products and ingredients (Barling et al. 2009). Corporate retailers are at the forefront of what are characterised as buyer-driven food supply chains as opposed to producer-driven. The positions of control gained by supermarkets, as the buyers with a dominant market position and acting as gatekeepers to the consumer, have altered relationships and changed which entities add value and appropriate profits along the supply chain (Fulponi 2006). The supermarket format and its management practices are spreading rapidly in urban centres in all developing regions and at much faster rates than has occurred in developed countries (Reardon et al. 2003).

Governance in the food sector can occur in the absence of direct state involvement when private and societal interests seek to exert forms of control within the market economy. Examples of such control exerted by buyers include: standards setting and grading of produce; process- and product- based food assurance schemes; contractual specifications from food manufacturers and retailers to growers; and, contractual specifications from retailers to manufacturers through own-brand labelled foods (Barling et al. 2009; Burch and Lawrence 2007;). In addition, private governance forms create new power relationships along supply chains, particularly through the

extraction of economic value. Concepts such as global commodity chain analysis and global value chains (GVCs) have focused on the governance strategies and forms that are deployed by lead firms upon other participants and firms along global food supply chains (Gerreffi et al. 2005). Developing world exporters seeking access to developed country markets are made to conform to these standards. While, technically, these are voluntary standards, compliance is made a contractual necessity (Fulponi 2006). There is evidence that specifications used by buyers in cross-continental food chains have marginalised smaller producers in favour of larger ones more able to raise standards (Dolan and Humphrey 2000; Okello et al. 2011; Tallontire et al. 2014). These modes of governance can impact upon the social and environmental standards of contracted suppliers and their livelihoods, as well as the labour force along these chains.

Some major food manufacturers and retailers are adopting more integrated sustainability measures as they are increasingly aware that resource efficient production will offer resilience to dislocations to their commodity supplies, for example from increased weather volatility affecting harvests (Barling et al. 2008). Two of the largest multi-national food companies, Walmart (retail) and Unilever (manufacture), have pledged in their sustainability plans to increase the number of small-scale producers and to help them improve their agricultural practices. Unilever's aim is to link 500,000 smallholder farmers into their supply network while achieving competitive prices (Unilever 2010). Walmart, by 2015, aims to provide training to one million agricultural producers, half female, in areas such as crop selection and sustainable agriculture techniques (Walmart 2014).

International agencies are attempting to link small producers to growing urban markets within developing countries. The International Centre for Tropical Agriculture (CIAT) and the International Food Policy Research Institute (IFPRI), as part of the CGIAR Consortium, have set up a clearinghouse to exchange best practice work on food value chains. The aim is to "integrate small-scale traders, producers, processors and retailers with consumers and commercial entities" (CIAT 2014). UNEP in partnership with the International Rice Research Institute together with key governments, NGOs and companies in the global rice sector convened the Sustainable Rice Platform. It focuses on a staple crop that is consumed widely in poorer communities in the developed world as well as being a commodity with extremely disparate supply chains. It sets standards for more resource efficient production and links the product to markets (UNEP 2011). However, the emphasis upon entry of small producers into value chains comes with a warning from more mature developed countries' food economies. In Europe, corporate retailers are identified as engaging in unfair trading practices, such as through retrospective changes in contractual agreements terms and category management practices in relation to their suppliers, adversely impacting upon the survival as businesses of those farmers and growers (High Level Group on the Competitiveness of the Agro-Food Industry 2009).

At the global level, the World Summit for Sustainable Development in 2002 led to attempts by the signatory governments to include industry in the drive to greater sustainability, with a focus on sustainable consumption-production links. The food and drink corporations have developed precompetitive platforms for sharing information to improve the sustainability performance of products. For example, the

Sustainable Agriculture Initiative (SAI) is a platform to improve the environmental performance of farm production initiated by the major food manufacturers (SAI 2014). The UK Government's Department for Environment, Food and Rural Affairs (Defra) has sponsored the Product Sustainability Forum through the Waste Resources Action Programme (WRAP), a non-departmental body (WRAP 2014). The Forum comprises the major retailers, and aims to measure, reduce and communicate the environmental performance of grocery and home improvement products, and it collaborates to share information and workload with other similar initiatives, internationally (WRAP 2014). The European Commission has developed its own environmental footprint methodology that it is applying to range of industry products, including food ones, through a set of pilot Product Environmental Footprints (PEFs) (DG Environment 2014).

In these examples, both industry and public officials are utilising and seeking to converge on common methodologies, such as Life Cycle Assessment (LCA), and applications capable of improving the environmental impact of final products and the processes in their production, as well as to communicate this to buyers along the supply chain and to final consumers. States are increasingly targeting food consumption by piggy-backing on corporate products, deploying market based policy instruments. In Europe, national governmental agencies have introduced certification schemes and labels in directing consumers to sustainable food choices (Barling 2011). The past decade of sustainable consumption-production policy focus has relied heavily upon industry involvement and development. Industry has recognised the sustainability challenges it faces, notably as adverse environmental impacts affect the supply of raw food commodities upon which food manufacturers depend for their final products. Simply put, no raw material no profit. State involvement has focused upon ways of measuring the environmental impacts of food products and their production processes and from that knowledge base seeking improvements, such as lower energy inputs, reductions in greenhouse gas emissions and more efficient water utilisation. The governance forms at the public-private policy interface are at the forefront of these cooperative knowledge exchanges. The sustainable consumption-production emphasis is now being recast in policy discourse in terms of resource efficiency both at European and global levels as economic policy since the late 2000s has sought to link environmental efficiencies to new forms of green economic growth (CEC 2014; UNEP 2012).

5. Conclusions

The contemporary governance of the world's food supply takes place, primarily, across three different but interrelated spheres: the international, the national and the private. The state remains the key level for decision-making. While governments operate within and across multiple levels of governance that constrain state autonomy, different states pursue particular politically-mediated self interests with regard to ensuring their food supply. This raises questions as to the role of international agreements. The aspirations of international agreements, such as the Sustainable Development Goals, provide a normative framework for states and private actors in food supply chains, but the lack of legal obligation provides a different, less formal, suite of incentives which can be more easily compromised by more immediate

national economic and policy priorities. Under international multilateral agreements targets can be set that tie international governments to their delivery, such as reduction in greenhouse gas emissions.

The extent to which the Washington Consensus was ever widely subscribed to is questionable. Less questionable is the post-Washington divergence. Future international policy decisions will take place in a multi-polar world, as the economic weight of rapidly developing nations is translated into greater diplomatic impact. In addition to the BRICS countries, other countries such as Indonesia, and Mexico are growing in economic and political influence. In these cases we see quite different political systems, cultures, and social structures. Importantly, they have large populations employed in agriculture. The flow of food commodities through international trade, and food products through FDI is being impacted, not least as regional power balances shift and as trade agreements are becoming more regionally-centred as the WTO framework fails to progress.

The spread of better practice in terms of corporate sharing of environmental measurement methodologies and the market signals accompanying food products are market-directed attempts to make the production and consumption of food fit the planetary limits on which it depends. This approach also asks a great deal of the consumer. Small and marginal food producers, the majority of the world's consumers, have started to secure a voice at the international policy level in recent years. The extension of such alternative dialogues is necessary as is greater state response to the needs of these voices. Policy responses need to be appropriate to their particular cultural and local contexts as sustainability is primarily place-specific. Collaborative and more inclusive modes of governance offer an alternative to inter-state conflict that is the other side of the coin of food and national security. The emerging frameworks currently in place will need to be developed further and will need the firm support of national governments to meet the food supply needs of the nine billion by 2050. The policy dialogues will need to continue to include sustainability right along the food supply chain. That is, not just increasing production to meet predicted consumption figures, but tailoring production, through all its stages, to provide for better and more appropriate consumption of food.

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