Harmonising the governance of farming risks: agricultural biosecurity and biotechnology in Australia

Abstract

International governmental bodies, such as the World Trade Organisation (WTO), are an increasingly prominent feature of global agri-food governance. They are instrumental not only in the dismantling of trade barriers but also in the promotion of a range of rules and standards. These rules are aimed broadly at harmonising national policies and practices so that differences are reduced and free trade is enhanced. Harmonisation is a crucial aspect of modern practices of governing, yet it has so far been given little critical attention in the agri-food and broader social science literature. Focusing on two contested policy fields with important consequences for Australian rural areas – quarantine regulations and the approval of genetically modified crops for commercial release – this paper examines how global forms of governing relating to risk assessment are constituted, rendered workable, debated and reconfigured at a national level as part of an 'assemblage' of trade liberalisation practices. We argue that the practice of harmonisation at a national scale is a complex process in which sovereignty is increasingly dispersed as national risk assessment processes are contested by corporations, trading partners and domestic political actors. The adoption of international rules may reinforce state sovereignty by legitimising desired policy changes, but it may also undermine domestic social, economic and environmental agendas.

Key words

Assemblage; Australia; biosecurity; biotechnology; governance; harmonisation; SPS Agreement; WTO.

Introduction

Governance has been defined broadly as "a shift in regulatory arrangements where governing is not confined to a single domain such as ... the state" (Higgins & Lawrence 2005, p. 2). This involves not only the sharing of governing activities between state and non-state actors, but also between different scales, with both supra- and sub-national institutions and actors playing an increasingly important role. International and multilateral regulatory bodies have reconstituted national governance regimes in directions which have been seen by critics to favour freer trade and the profit-making interests of multinational corporations over social welfare and the sharing of wealth (see Scholte 2005). In particular, an important central governing role has been attributed to one international organisation, the World Trade Organisation (WTO), which has been viewed as undermining state power and dismantling national regulatory regimes in pursuit of its neoliberal trade liberalisation agenda (Dibden et al. 2009; Peine & McMichael 2005). More recently, others have argued that rather than exerting increased power itself, it is the changes *made possible* by the WTO that have had the greatest potential impact on governance. Thus, as Busch and Bain (2004, p. 322) argue with specific reference to agriculture, a range of private rules, practices and institutions implemented by the WTO are "at the center of transforming social, political, and economic relations throughout the global agrifood system". This transformation is evident, for example, in the push from both transnational retailers and international non-government organisations for the adoption of internationally recognised and accredited standards for food safety and quality.

However, as we argue in this paper, the capacity of international rules and practices to standardise and harmonise agri-food governance should not be taken for granted. Rather than constituting a coherent and established regime of governing trade liberalisation, they form part of an *assemblage* of practices , regulations, institutions and socially situated actors which are involved in an ongoing process of drawing together disparate elements and making them

workable, a point we return to below. Efforts to achieve greater harmonisation involve a great deal of real time work and "emerge from localized processes of negotiations and pre-existing institutional, infrastructural, and material relations" (Timmermans & Berg 1997, p. 275). In addition, harmonising is an ongoing and contested process, rather than an end point, in which new rules and standards emerge at the same time as "new sites and objects of political conflict" (Barry 2001, p. 63). Little scrutiny has so far been given in the agri-food literature to how international rules are aligned with national policies and the existing practices and values of industry sectors, as well as the agents involved in attempts to harmonise international standards and localised practices. Indeed, this is also the case in the social sciences more broadly (Higgins & Larner 2010). Yet harmonisation is a crucial aspect of modern practices of governing (Barry 2001), and greater scrutiny of the work involved in harmonising provides significant insights into how seemingly 'global' forms of governing are rendered workable, contested and reconfigured – or 'assembled' – within national contexts. Such work is particularly evident in national responses to the attempted alignment of agricultural import risk assessment procedures with international trade rules.

International attention has increasingly been brought to bear on 'non-tariff barriers' to trade, including import regulations to protect human, animal and plant health, which fall within the scope of the Sanitary and Phyto-sanitary Agreement (SPSA). This agreement forms part of a suite of WTO measures[1] promoting the harmonisation of domestic policies and regulatory practices, including standards relating to food production and food safety. This paper will examine Australia's adoption of 'scientific assessment of risks' in accordance with the SPSA in relation to two contested policy fields with important consequences for rural areas – agricultural biosecurity, specifically quarantine regulations, and the approval of genetically modified crops for commercial release in farming areas. These risk assessments and approvals have been the subject of intense

[1] The SPS and TBT [Technical Barriers to Trade] Agreements have been categorised by Kalderimis (2004, p.305) as "defensive harmonization agreements, which seek to further restrain non-trade values from interfering with free trade." (See also Wright [2008]'s study of the TBT Agreement in relation to agriculture.)

debate, with opponents pointing to a failure to adopt a precautionary approach or take into account legitimate environmental and public health concerns. For Australia, the dilemma is particularly acute. On the one hand, as a strongly export-oriented country, Australia has been a leading exponent of free trade through both the WTO and bilateral trade agreements. On the other hand, permitting the entry of potentially harmful organisms is seen as threatening the status of Australia as a clean, green and safe food producer, and repeating the mistakes of the past by deliberately introducing plants and animals with the potential to become pests or carriers of disease.

Governance, the WTO and global harmonisation

In research examining the impact of the WTO on agriculture and rural spaces, the focus has been on the Agreement on Agriculture (AoA) and its measures to promote trade liberalisation. This work has considered, *inter alia*, the implications of trade liberalisation for rural livelihoods and environments (McCarthy 2004), for expanding corporate control of the global food chain (Peine & McMichael 2005), and for development of alternative strategies for rural areas under the rubric of multifunctional agriculture (Dibden & Cocklin 2009; Dibden et al. 2009; Wilson 2007). While the WTO may have aimed "to write, in the words of its first director, the constitution for a single global economy" (McCarthy 2004, p.329), the actual effects of WTO-promoted trade liberalisation on particular nations are increasingly seen as far from monolithic, in accordance with now well-accepted understandings of the variability and complexity of neoliberal practices within different policy jurisdictions and historical and geographical contexts (Larner 2003; Peck &Tickell 2002). Such research is consistent with a broader call by some agri-food scholars to examine the 'technologies' and practices of global governing, and how these are enacted and articulated at a national and local scale, rather than focusing primarily on 'global' actors and the power they are assumed to exert (Campbell & Le Heron 2007; Higgins et al. 2010). Nonetheless, the articulation of these practices needs to take into account pre-existing material and social relations at the global

scale (see Timmermans & Berg 1997), not least the differences in economic power between key actors and institutions. For instance, some wealthy regional economies, such as the EU and its member states, have been able to resist actions taken against them through the WTO's disputes-settlement (DS) system (Carlarne 2007), while developing countries may be forced into "defensive harmonisation" to pre-empt the threat of retaliation through the WTO (Kalderimis 2004). Picciotto (2003, p.379) also points to "the deployment of the economic power of some sections of big business to secure the capture of the WTO by sectional interests, and thus to restrict the regulatory powers of states", a power particularly exercised by business interests and actively supported by national governments in the US and EU. This highlights the ongoing importance of sovereign forms of power in shaping modern governance. As Dean (2007, p.157) argues, "while sovereignty has historically been identified with the territorial state as a supreme power within a given domain, it is also able to be dispersed onto different agents in various situations, and for different ends".

Private standards and certification schemes represent one such example of the variability and complex effects of 'neoliberal' practices, at the same time as highlighting how sovereign power is reconfigured in new forms both within as well as beyond the state. Standards have attracted scholarly attention commensurate with their growing role in agri-environmental governance (Busch & Bain 2004; Higgins et al. 2008). Literature on this subject has explored the emergence of standards, the variety of actors involved and the consequences for farmers. Private standards have been seen, on the one hand, as a means of enhancing the power of corporate actors to the detriment of smaller producers and, on the other hand, as providing opportunities for farmers to develop alternative livelihood strategies (Higgins et al. 2008). A more recent field of study is "a particular mode of agri-food governance: international food standard setting" (Lee 2009, p.415) by international organisations such as the CODEX Alimentarius Commission, which develops "food standards to facilitate international trade while protecting consumers" (Bredahl & Forsythe 1989, p.194).

An increasingly important component in this mix is the role of the WTO in harmonising standards and reshaping domestic regulatory regimes. Wright (2008, p.724) argues that:

> … the role of the WTO … points to an emerging transnational regime of rules and new kinds of relationships. Through the WTO, the global is claimed as regulatory space in ways that continue to expand both extensively, as more countries join the WTO, and intensively through the inclusion of new areas of concern … This is a thick regulation converting issues around, for example, food standards and ownership of knowledge from being a matter of personal or group preference to the highest concern of international trade …

Yet, as a number of scholars have argued, harmonisation of practices is a complex and precarious process. For instance, Higgins and Larner (2010, p.10) contend that standards "are not simply imposed by transnational corporations and/or international institutions. Rather they emerge out of complex articulations between actors in multiple locations" and are an intermixture of private and public regulations. Thus, not only must standards and rules be rendered workable across different national and local contexts, but they rely on a range of specific agents "who are prepared to *make* [them] … into a reality" (Barry 2001, p. 75, italics in original). This takes the focus of study away from the actual content of standards and towards the ways in which specific state and non-state actors attempt to use rules and standards "in various situations and for different ends" (Dean 2007, p.157), an issue which we engage with in this paper.

Biosecurity measures – which incorporate biotechnology concerns – provide a particularly poignant illustration of the problems involved in harmonising global rules and standards. A major objective of the Uruguay round of multilateral trade negotiations, leading up to the establishment

of the WTO, was to reduce sanitary and phyto-sanitary[2] regulations and barriers. During the negotiations, "major participants ... called for the harmonization of plant and animal health regulations and ... recognized the roles of existing international agreements and 'standards' organizations" (Bredahl & Forsythe 1989, p. 189). The formation of the WTO in 1996 was accompanied by a Sanitary and Phyto-Sanitary Agreement (SPSA), which aimed to 'harmonise' biosecurity measures between different jurisdictions and prevent them from replacing tariffs as a means of protecting domestic economies against liberalised trade. It attempted "to draw a line of distinction between protectionism and the genuine domestic measures and policies necessary to protect human, animal or plant life or health" (Aginam 2008, p. 667). This was to be achieved through the establishment of internationally accepted agri-food standards and the use of standardised, 'science-based' risk assessment procedures. What Trachtman (2006, p. 480) has referred to as "quasi-legislative authority" was conferred on three international standards organisations – Codex Alimentarius (Codex), the International Office of Epizootics (OIE)[3] and the International Plant Protection Convention (IPPC). Although use of standards developed by these organisations is not mandatory, they provide a 'safe harbour' against attack by other nations through the dispute procedures of the WTO (Trachtman 2006). National SPS regulations which deviate from an international standard must demonstrate that they are based on an acceptable form of 'science-based' risk assessment (Aginam 2008; Zerbe 2007). Thus, while international standard setting predated the formation of the WTO, what was new was the explicit linking of SPS measures with the trade liberalisation agenda and the fact that nations now had the ability to dispute – and penalise – competitors employing SPS measures to protect their own trade and agri-food sectors against (actually or purportedly) risky imports (Atik 2004; Carlarne 2007; Kastner & Pawsey 2002).

[2] *Sanitary* measures relate to the health of animals and *phytosanitary* to plants.
[3] The OIE was later renamed the World Organization for Animal Health but retained its original acronym.

Running counter to the trend promoted by the SPSA is a more precautionary approach, which focuses on non-economic aspects of food security/food production: consumer welfare and health (human, animal, environmental). The emergence of precaution as a major aspect of regulation of food production and trade has been linked with the rise of consumer and health concerns following some significant agricultural and food safety alarms. The SPSA has been criticised for its neglect of these non-trade considerations (Connolly 2009; Kalderimis 2004). Wallach (2002, p. 826) has described application of international commercial rules as "a slow motion coup d'etat against accountable, democratic governance". The effect of international standards agreements on domestic agri-food systems is twofold. Firstly, domestic standards may have to be modified to accord with international requirements. This reinforces existing pressures from importers and retailers in developed countries, and may actually improve national standards, a process referred to as harmonisation *up*. This particularly affects developing countries and has been seen as beneficial – enhancing food safety and improving agricultural practices – by some scholars, but also as posing difficulties for developing countries in meeting the standards set by powerful global actors in international fora which they have limited capacity to influence (Henson & Loader 2001; Mayeda 2004). Secondly, domestic protections may be weakened or undermined by the SPSA's emphasis on providing scientific justification for domestic standards that are stricter than international requirements, a process referred to as harmonisation *down* (Wallach 2002). Attempts to use the precautionary principle in WTO disputes have proved ineffectual (Connolly 2009). As Mayeda (2004, p. 737) points out, "across-the-board harmonization fails to recognize the need for countries to adapt laws and legal institutions to domestic conditions". The result has been struggles within nation states revolving around the new regulatory style based on science and formalised risk assessment procedures which opponents see as exposing public health, consumer preferences, the environment, the reputation of farming, and the economic future of rural areas to unacceptable risks.

These struggles have been seen by some scholars as indicating the emergence of the third and latest in a series of food regimes – "constellations of class relations, geographical specialization, and inter-state power" (Friedmann 2009, p.335). This latest manifestation has been variously referred to as a "financialized food regime" (Burch & Lawrence 2007), "a neoliberal food regime" (Pechlaner & Otero 2008),[4] "a corporate food regime" (McMichael 2009), or an "emerging corporate-environmental food regime" (Friedmann 2005), while Campbell (2009) sees two alternative trajectories emerging and Pritchard (2009, p.297) points to the failure of a posited "WTO-led transformation of global food politics towards unfettered market rule" which could prospectively form the basis of a new food regime. While the notion of food regime highlights the key actors driving changes in agri-food governance arrangements, it does not explore the work they perform in constituting particular regimes and rendering them governable. In addition, it tends to conceptualise the resultant regime of governance in a way that appears coherent, "settled, [and] potentially even complete" (Li 2007, p. 264). We find the notion of the *assemblage* more useful as a tool for understanding processes of change within global and national agri-food systems, since it draws attention to the ongoing work required to achieve a "strategic purpose", in this case the liberalisation of food production and exchange. As Li (2007, p.264) argues:

> Assemblage flags agency, the hard work required to draw heterogeneous elements together, forge connections between them and sustain those connections in the face of tension. It invites analysis of how the elements of an assemblage might – or might not – be made to cohere.

Li (2007) has described an assemblage of community forest management in Indonesia and other countries. She identifies a number of practices through which assemblages are constituted,

[4] For Pechlaner and Otero (2008, p. 366), the 'neoliberal food regime' is "centrally characterised by biotechnology and 'life science' transnational corporations as key economic actors operating in a neoregulated international context".

including: forging alignments between those who aspire to govern and the targets of governing; managing failures and contradictions as well as devising compromises; and, re-working old elements and grafting on new ones (Li 2007, p. 265). In this paper, we delineate the contours of a *trade liberalisation* assemblage centred on Australia but extending beyond its borders. While our study is concerned with one particular trade liberalisation assemblage, we suggest that the WTO could be viewed as surrounded by a multitude of overlapping nation-centred assemblages. This wider constellation of assemblages is what other scholars have seen as constituting an actual or emerging or failed food regime.

In the remainder of this paper, we focus on biosecurity practices and actors as an important aspect of trade liberalisation, and consider the extent to which Australian governance processes in relation to biosecurity have in fact been reconfigured through the influence of the WTO and specifically the SPS agreement. We examine Australia's adoption of 'scientific assessment of risks' in accordance with the SPSA in relation to two contested policy fields with important consequences for rural areas – agricultural biosecurity, particularly quarantine regulations, and the approval of genetically modified (GM) crops for commercial release in farming areas. Although different regulatory systems and population sectors are involved, quarantine and GM crops both raise similar issues for opponents: the risk of unwanted threats; disputed science; the role of experts versus public participation, and pressure from national and transnational interests. Both form part of the same assemblage devoted to advancing the importance of trade liberalisation and shaping the competitive agricultural sector required for success in this endeavour.

The trade liberalisation assemblage in Australia

The trade liberalisation assemblage in Australia could arguably be viewed purely as a *neoliberal* assemblage except that: (1) the preoccupation with freer trade pre-dated the adoption of neoliberal policy approaches, emerging as a significant policy direction in response to Australia's exclusion

from its major agricultural market when the United Kingdom entered the European 'Common Market' in 1973; and (2) 'trade liberalisation' serves both as a self-applied label for a diverse collection of practices and actors, and as a rallying cry or popular aspiration, whereas neoliberalism is primarily an analytical category identified by academics and critics of these practices (see, e.g., Barnett 2005; Castree 2006). The trade liberalisation label "flags an identifiable terrain of action and debate" (Li 2007, p.266), which has endured for nearly four decades.

This policy direction was *reinforced* by the adoption of neoliberal ideology in the 1980s. Australia, like New Zealand, occupied a "relatively unusual geo-economic and geo-political position in the globalizing food economy" (LeHeron 2005, p.199); both sought to overcome the challenges confronting small, export-dependent countries competing against the subsidies of European and North American competitors by adopting neoliberal disciplines and striving to achieve increased international competitiveness. Australian agricultural policy was increasingly "premised on promoting agricultural exports through vigorous advocacy of free trade and severe restrictions on domestic support for agriculture" (Dibden et al. 2009, p.302; see also Dibden & Cocklin 2007; Pritchard 2005a, 2005b). Trade liberalisation became a major goal for Australian governments, the agricultural sector, and a range of actors implicated in this endeavour.

The Australian trade liberalisation assemblage may be viewed as centred on but not contained within Australia. Parties to this assemblage include the following national and international actors:

- *The WTO,* a key site both for the promotion of "corporate globalization" (Peine and McMichael 2005, p. 22) and the embedding of neoliberal governmentalities for agriculture – as well as for their contestation (Dibden et al. 2009). The WTO is a major focus of Australia's efforts to achieve an end to unfair competition.

- *International standards organisations* – three international standards organisations (discussed above) have been given special status within the SPSA and hence form an integral component of the international trade liberalisation agenda. Australian government representatives and regulatory bodies have participated actively in international standards development.
- *Australian governments* – "Successive Australian governments have pursued a policy commitment to open competition on the world market, expressed through the elimination of tariffs, import restrictions and production subsidies" (Dibden et al. 2009). This approach has the support of both major parties at federal level, although state governments have been less united in their adherence to free trade policies (for example, in relation to GM crops), where these are seen as undermining state competitive advantages.
- *Federal regulatory bodies* – in addition to existing regulatory bodies, such as the Australian Quarantine Inspection Service (AQIS), new quasi-independent bodies were established to render technical, as well as regulate, biosecurity and quarantine (Biosecurity Australia), biotechnology (Office of the Gene Technology Regulator) and food safety (Food Standards Australia and New Zealand, or FSANZ) in ways which are compatible with the SPSA and other WTO directives (cf. Le Heron 2005).
- *Expert advisory bodies* – supposedly independent[5] federal agencies, notably the Australian Bureau of Agricultural Resource Economics (ABARE), the Bureau of Rural Sciences (BRS), the CSIRO, and the Productivity Commission, have all at various times undertaken research and provided advice in relation to the government's trade liberalisation agenda (see, e.g., Binder 2002; Nossal 2008). Some scientists are also recruited to expert committees. The Australian experience has been similar to that of

[5] ABARE for example described itself as "a *professionally* independent government economic research agency" (Nossal et al. 2008, p.ii; our emphasis). The federal government merged ABARE with the BRS on 1 July 2010.

New Zealand, where Le Heron (2005, p.190) points to "the central role of experts and expertise in fashioning configurations of risk to meet the priority of international competitiveness and the emergent expectations of agri-food actors".

- *Multi-national corporations* – deregulation of the agricultural sector has opened the way to consolidation of farms and agribusinesses, including mergers and takeovers by major international players. Biotechnology corporations, notably Monsanto, have entered into partnership arrangements with government departments of agriculture and universities. Corporations have also had the ability to influence the United States government as part of its free trade agreement with Australia (Weiss et al. 2006). However, business attitudes are not uniform, with multinational retailers[6] often taking alternative positions in response to consumer resistance to 'risky' products of industrialised farming and agricultural biotechnology.
- *Farming organisations* – neoliberalism and particularly trade liberalisation is accepted by major farming organisations. In consequence, "the agricultural policy community in Australia is virtually closed to those who disagree with the prevailing economic approach" (Botterill, 2005, p.216; see also Halpin and Martin, 1996; Pritchard, 2005a).
- *Farmers* have been encouraged to adapt to liberalised trade through development of more productive farming systems, i.e., through intensive farming practices, farm consolidation, displacement of smaller, less 'efficient' farmers, and developing better business management capacities (Dibden and Cocklin, 2005; Gray and Lawrence, 2001; Higgins and Lockie, 2002).
- *Consumers* in theory benefit from free trade and international food standards through access to cheaper, safer food.

[6] An example is the recent announcement that "the French grocery retailer Carrefour, the largest supermarket chain in world, is launching a label to tell its customers that its animals have not been raised on GM feed" (GMWatch 2010).

The elements within the assemblage have diverse interests, which may pull in different directions, with farmers, rural citizens and consumers proving particularly intractable. The promised benefits of free trade, through better market access and becoming more competitive, are not necessarily realised or appreciated, as our two case studies reveal.

Trade liberalisation, quarantine and biosecurity in Australia

In Australia, the struggles surrounding trade liberalisation reflect a clash between two contradictory policy trends – on the one hand, the dismantling of trade barriers as part of Australia's support for free trade, and on the other a precautionary approach towards biosecurity threats. Biosecurity in the past was maintained through strict quarantine regulations to protect both agricultural production and Australia's reputation as a producer of safe food, but these have been viewed as the last bastion of protectionism by trading competitors, which have threatened, and in some cases proceeded, to take disputes to the WTO for resolution (Atik 2004; Fagan 2005; Higgins & Dibden in press; Kastner & Pawsey 2002). The tension between these stances is managed through a conservative, but not zero-risk, approach to the governing of biosecurity risks "aimed at reducing risk to a very low level" (Biosecurity Australia 2003, p. 5). However, attempts to move towards greater compliance with the SPSA by dismantling supposedly unjustifiable quarantine restrictions have been fiercely opposed by agriculture-dependent regions (Dibden & Cocklin 2007; Fagan 2005). This is evident in a recent attempt by the Australian government and some producers to overturn a ban on beef products from countries affected by Bovine Spongiform Encephalopathy (BSE), commonly known as 'mad cow disease'. Because of its free trade agenda, Australia explicitly rejects the precautionary approach it previously pursued, seeing it as undermining trade liberalisation. But as the BSE case reveals, positions adopted in practice are far less rigid than those espoused in public pronouncements.

In this case the Australian government attempted to short circuit the risk assessment process, which it has conducted in other quarantine matters, by relying on international assessments of risk in relation to BSE-affected countries. Although BSE was first identified in the UK in the late 1980s and its origins traced to a common practice of industrial agriculture – feeding animal products to cattle, feeding bans were poorly monitored and the disease rapidly assumed epidemic proportions. Following the BSE outbreak in Europe, trade embargoes were announced in other countries, including the USA, which banned imports of 'live ruminants' from 1989 and all beef imports from 1997. In other words, a precautionary approach was initially the rule in relation to this disease.

Agreed criteria for assessing the risk of BSE were established in 1999 by the World Organisation for Animal Health (referred to by its historical acronym, the OIE), which is recognised by the WTO as the international standard-setting body for animal health and diseases. In 2003, on the grounds of improved scientific understanding of the disease and stronger surveillance standards, the original five risk categories for classifying countries (as free, provisionally free, minimum, moderate and high risk) were modified to three categories: negligible, controlled and undetermined risk. This meant that the previous precautionary approach, which banned any beef imports from BSE-affected countries, was replaced by risk assessment following (or equivalent to) standards set by the OIE. The UK and USA were classified as 'controlled risk'. Australia, which has never experienced a BSE outbreak, was awarded a 'negligible risk' classification.

Whereas in the UK and Europe, BSE was a significant factor in the development of a more protectionist and precautionary approach, Australia has followed the reverse trajectory – the initial precautionary policy of opposition to the importation of beef from BSE-affected countries has recently been challenged as a restriction on trade and unwarranted by science. Australia's freedom from BSE to date has been attributed to "good agricultural practice and caution in import risk

assessment" (Bambrick et al. 2004, p. 5). The risk of an outbreak has been minimised by enforcing bans on feeding animal materials to cattle and on importing beef from higher risk countries such as Canada, the USA, Japan and parts of Europe, including the UK (Senate 2010). However, Australia has been under increasing pressure from trading partners to relax the ban on imports and adopt "the weaker international standards on meat trade promulgated through the … OIE" (Weiss et al. 2006, p. 377).

By 2009, pressure on the Australian government to relax quarantine regulations on imports of beef and beef products was growing. This pressure was both external and domestic. A very important trigger, according to the Department of Agriculture, Fisheries and Forestry (DAFF), was the interest of meat-exporting countries, such as Canada, the USA, Japan and the EU, in sending beef to Australia (Littlejohn 2009). Some of these countries – Canada was mentioned – were said to have threatened "to go to the WTO over unfair trade barriers" (Berkovic 2010). Domestically, all of Australia's peak national beef organisations were reported to be pushing for a change in policy, but this stance was also influenced by trade pressures, with the chairman of one peak body, the Red Meat Advisory Council (RMAC),[7] agreeing that: "Recent indications of possible WTO action have brought the matter to a head" (Knight 2009).

An epidemiologist, Professor John Mathews, was commissioned by the Department of Health and Ageing to conduct a rapid (2 ½ week) review of the current scientific evidence on BSE (Mathews, 2009). Following a favourable assessment, the Australian government announced that it would relax restrictions from 1 March 2010 on beef imports from countries where outbreaks of BSE had previously occurred. It was clear that this decision had been strongly influenced by international governance arrangements – the role of the OIE – and the threat of retaliation within the WTO if Australia failed to fall into line. According to DAFF, "the new policy takes into

[7] RMAC is the peak body for Australia's red-meat and livestock industry. It is made up of the Australian Lot Feeders' Association, Australian Livestock Exporters' Council, Australian Meat Industry Council, Cattle Council of Australia and Sheepmeat Council of Australia.

account the requirements of the OIE Terrestrial Animal Health Code" but is "more conservative ... because it is tailored to Australia's specific needs" (quoted in Senate 2010, p. 61).

As a result of immediate widespread opposition to the decision, a review was launched by the Senate Standing Committee on Rural and Regional Affairs and Transport to inquire into the "possible impacts and consequences for public health, trade and agriculture of the Government's decision to relax import restrictions on beef", especially from countries previously affected by BSE (Senate 2010, p. 1). The government's claim that the beef industry had initiated the policy shift was undermined by evidence that consultation within the sector had been limited and that cattle producers were divided. Even the support of the peak bodies in the beef industry weakened after it was revealed in Senate committee hearings in February 2010 that a full import risk assessment would not be conducted, the industry would not be consulted about import protocols, and Australia would not be requiring the same standards of traceability expected of Australian cattle producers (Knight 2010).

Rallies by beef producers, agitation by opposition politicians and unfavourable comment in the rural media underlined the growing opposition to the government's actions. On 8 March 2010, just before the Senate committee submitted their first report, the government backed down, announcing that a two-year import risk assessment would be conducted by Biosecurity Australia for beef from all countries except New Zealand (Senate 2010, p.52). Another sign of government responsiveness to this food safety dispute was an announcement that country of origin labelling would be introduced, providing "consumers with a choice as to whether they wish to eat beef from countries that have had a BSE outbreak" (Senate 2010, p. 43).

This account of the attempts to revise Australian policy on BSE reveals the highly political and contested nature of risk assessments, as well as the work involved in forging connections between trade liberalisation and biosecurity, with the government torn between international pressures and trade commitments on the one hand and domestic consumer and producer concerns

on the other. While a precautionary approach to risk ensured alignment of government policy with the concerns of Australian beef producers, this was undermined by international pressure to relax import restrictions. The major issues raised through this debate were whether Australia should accept levels of risk which were assessed as negligible but not zero (Senate 2010, pp. 16-17); whether assessments of the prevalence of BSE and the effectiveness of BSE control measures provided by other countries could be trusted, without conducting in-country inspections or monitoring; and whether exporting countries should be allowed to observe control measures which were different (and possibly less effective) than those required in Australia. According to the SPSA, a country must not require higher or more onerous conditions for imports than for domestic production, but in the BSE case it appeared that Australia was willing to accept *lower* standards, for example regarding traceability. In response to widespread domestic resistance to the relaxing of import restrictions, the government was forced to re-work its policy position in order to reach a workable compromise – in the form of a two year import risk assessment as well as stricted country of origin labelling – that appeased international trading partners and domestic producers.

Agricultural biotechnology as a biosecurity risk: the case of GM canola

A contrast to the BSE dispute is provided by the case of genetically modified (GM) canola. The process for assessing risk in relation to the products of agricultural biotechnology is separate and different in character from other biosecurity risk assessments, despite the fact that GM crops carry similar public health, environmental and economic risks. GM plants were identified as a biosecurity risk by the Tasmanian government, which issued a declaration on 26 July 2000 that "any genetically modified plant or plant product would be a 'pest' under the Plant Quarantine Act" (Senate 2000, s. 6.80).[8] The potential emergence of 'super-weeds' has been a constant concern of

[8] In conjunction with this declaration, a 12-month moratorium was imposed on GM products in Tasmania; this was subsequently extended and is still current.

farmer and environmentalist opponents of GM crops over the past decade, backed up by accounts of GM resistant weeds emerging in North America.

The first comprehensive framework for regulating gene technology was established with the passage of the *Gene Technology Act 2000*. An independent statutory officer, the Gene Technology Regulator, supported by the Office of the Gene Technology Regulator (OGTR), was appointed to oversee risk assessment and risk management of 'dealings' with genetically modified organisms (GMOs), and to decide on a case-by-case basis whether to approve GMOs for commercial release in Australia. A further division of responsibility arose during negotiations between the States and Commonwealth to develop a national regulatory framework. Because of Tasmania's unwillingness to accept GM crops, the States and Territories were given jurisdiction "to protect markets and trade from the release of a GMO if required" (DPI 2008, p. 17). Not only Tasmania but all other States except Queensland subsequently introduced moratoria on the release of GM canola and, in some cases, on all GM crops within their own jurisdictions. (These were later discontinued in Victoria and New South Wales in 2008 and 2010 in Western Australia.) Apart from this concession to the States, the Act omits "any assessment of economic impact" (Hindmarsh 2008, p. 231; see also Tranter 2003). This lack of recognition that gene technology may have economic consequences provides a curious contrast with biosecurity risk assessment, which includes consideration of economic risks, as does risk assessment of GMOs within the SPS framework: WTO members are allowed "to take into account relevant economic factors, such as the potential damage in terms of loss of production or sales in the event of the entry, establishment or spread of a pest or disease" (Zarilli 2005, p. 29).

The neglect of economic considerations at federal level may be linked to an assumption, held by both government and opposition,[9] of the benefits of biotechnology to Australia's economic

[9] In the run-up to the 2007 election, Labor's agriculture spokesman stated that: "Safe and beneficial standards [for GM crops] … must be met to the satisfaction of the government, the scientific community and the farming community" and "comprehensive labelling" would be developed for GM foods (Gene Ethics 2007). However, this cautious attitude was abandoned after Labor's election success, with the new Minister for Agriculture deciding to promote "research on

competitiveness. Indeed, the decision to develop a national regulatory framework for gene technology was a response not only to public and NGO disquiet, but also to "[i]ndustry concern over the lack of a *clear path to market* for products containing GMOs that fell outside the ambit of existing regulators, and over the negative public perception that might develop in the absence of a comprehensive regulatory regime" (Hain et al. 2002, p. 163; our emphasis). The underlying assumption is that the technology should be facilitated through the introduction of a regulatory framework which identifies and – more importantly – *manages* any risks, supported by public information explaining and promoting the benefits of biotechnology (Cocklin et al. 2008; Hindmarsh 2001). As Tranter (2003, p. 246) points out, the "assumption is that any risks can be managed", leading to the conclusion "that Australia, through this legislation, has made a choice in favour of genetically modified (GM) foods". This conclusion is also supported by the reliance of the OGTR in its 'science-based' assessments primarily on data supplied by the biotechnology companies applying for a licence. No independent trials are conducted to check the evidence provided (Cocklin et al. 2008). Indeed, according to Heinemann (2007, p. 159), "regulators routinely accept industry data that has not been peer-reviewed or reproduced by reputable independent researchers", including approving GM foods which were rejected in other countries, such as Austria. Tranter (2003, p. 252) argues that the limited scope of the federal risk assessment means that "issues such as segregation of crops, marketability and trade implications do not come within the ambit of the assessment", although the contamination of non-GM crops could in fact be considered an environmental risk and hence within the scope of the Act. When the Gene Technology Act was reviewed in 2005, submissions from anti-GM farming and consumer groups supported extending the scope of the Act to include socio-economic considerations, while GM proponents opposed any change (Deakin 2008).

GM as part of a strategy to help farmers deal with the challenges of climate change"; the leader of a campaign against GM crops and foods claimed that the Minister had been "captured by his department" (Murphy 2008).

How does the construction and implementation of a national regulatory framework for gene technology relate to international harmonisation initiatives? It is clear that international pressures from biotechnology corporations have been influential in shaping government responses to gene technology, including agricultural biotechnology, largely through their efforts to engage government agencies in partnership agreements and funding for scientists engaged in biotech research. Indeed Hindmarsh (2008, p. 118) argues that as early as 1983, an "emergent biotechnology regime of government became … visible, with a characteristic clearly being interdependence between public research organisations and private biotechnology interests". International corporations have also shown a willingness to achieve their aims through bilateral trade agreements as demonstrated by a recent report that US biotech companies have been lobbying the Australian Government not to label GM products in conjunction with negotiations for a Trans-Pacific Free Trade Agreement (Greenpeace 2010).

International standards have also influenced safety assessments of GM foods, with Food Standards Australia and New Zealand (FSANZ) employing a GM food safety assessment process which has been described as "scientifically rigorous" and "based on concepts and principles … developed and recognized internationally through extensive OECD, FAO-WHO and Codex Alimentarius expert consultations" (Yan 2009). Similarly, the OGTR uses a "risk assessment methodology … specifically based on national and internationally recognised risk analysis principles", including "the Codex Alimentarius Commission principles for risk analysis … used by FAO and WHO for assessing the products of gene technology" (Keese 2006, pp. 259-260).

The role of the SPS Agreement (SPSA) has been less clear. The Australian regulatory framework was established to regulate agricultural biotechnology where there were "possible risks to human, animal, and plant health and life, and to the environment" (Caswell 2000, p. 116). However, at that time it was unclear if the SPSA covered GMOs and biotechnology (Binder 2002, p.11). It was not until 2006 that the SPSA was explicitly applied in this area by the WTO in the

EC-Biotech case brought by the US. Indeed the application of the SPSA to GM products has been viewed as an unjustified extension of the scope of the Agreement, with potentially adverse consequences for "environmental regulatory regimes, both domestic and international" (Peel 2007, p. 1009), and was criticised by environmental NGOs for "undermining the Cartagena Protocol on Biosafety and the precautionary approach" (McDonald 2006, p. 423; Carlarne 2007; Zerbe 2007). However, this was unlikely to concern Australia, which has refused to sign the Cartagena Protocol governing the 'transboundary movement' of 'living modified organisms' (i.e., GMOs).

A more immediate impact of the *EC-Biotech* finding may have been on those Australian States which had adopted moratoria on commercial release of GM crops. In 2000, when the possibility of States 'opting out' was first discussed, concerns were raised that Australia might be seen as breaching its obligations under WTO agreements, such as the SPSA (Senate 2000, pp. 160-161). The WTO *EC-Biotech* decision in 2006 against bans on GMOs by member states of the EU raised the possibility that the moratoria in several Australian States and Territories might be inconsistent with Australia's international obligation. Indeed Connolly (2009, p. 373) argues that the WTO decision may have influenced both the strong stance adopted against State bans by a review of the Gene Technology Act in 2006 and the willingness of New South Wales and Victoria to end their moratoria in 2007. More likely influences are the increasingly close alignment and partnership agreements between both federal and state governments and transnational corporations, such as Monsanto and Bayer.

Conclusion

This paper highlights the complexity of attempts to harmonise global rules and standards created and implemented through the WTO. As we stated at the outset, harmonisation should not be taken for granted. It is important to pay close attention to the practices of assemblage through which international rules are implemented, rendered workable and contested, especially in the context of

national and sub-national policies. In following this line of inquiry, we concur with Busch and Bain (2004) that researchers should focus on how the changes *made possible* by the WTO have impacted on agri-food governance, rather than scrutinising the actions, structure or legitimacy of the WTO itself. Nonetheless, we argue that such an approach needs to be extended in order to provide a deeper understanding of the dynamics of governance underpinning efforts to produce greater harmonisation. As we have shown in the paper, the WTO is central in attempts to harmonise biosecurity measures. Yet, to make sense of the *practice* of harmonising work, it is crucial to take into account the work performed by a range of agents – such as governments, regulatory and expert bodies, as well as corporations – who seek to draw together rules and standards in different ways and for diverse ends. The significance of the work performed by these agents is demonstrated in two key ways in this paper.

First, international rules do not necessarily threaten state sovereignty. Indeed, as we show in the paper, governments have used these rules as a means of legitimising *desired* changes, such as the introduction of GM crops. This achieves alignment with, and harmonisation of, WTO rules at a national level and simultaneously reinforces the sovereignty of the state. Yet it is important to note that sovereignty is increasingly dispersed in a globalising world, and shared with other non-state agents – a point well recognised in the globalisation literature (e.g., Higgins & Lawrence 2005; Scholte 2005). One consequence of the dispersal of sovereignty is that the corporate sector, as well as a range of supra and sub-state groups, has growing influence in processes of governing. Thus, we have argued in the paper that the implementation of international rules and standards is contingent on the extent to which these are seen as important by state agencies and/or influential private interests. The imperative to remain internationally competitive, together with a strong commitment to trade liberalisation, gives rise to growing involvement of non-state agencies, such as transnational corporations, in agri-food governing. This dispersal of sovereignty brings with it a form of self-imposed *harmonisation down* which accepts lower standards of biosecurity protection

and seeks to downplay both BSE and GMOs as risks. Nevertheless, the practice of aligning national policies with international rules can contribute to tensions as well as resistance at a domestic level, undermining attempts to create a workable trade liberalisation assemblage.

Second, the dispersal of sovereignty is reflected also in the role played by domestic as well as international actors in shaping the practice of risk assessment. The concept of practices ofassemblage has proved useful in our analysis, because of "its potential to finesse questions of agency by recognizing the situated subjects who do the work of pulling together disparate elements without attributing to them a mastermind or a totalizing plan" (Li 2007, p.265). While the SPS Agreement specifies that states must conform to international rules in designing and undertaking biosecurity risk assessments, there is considerable flexibility in how this occurs in practice. As our case studies of BSE and GM canola demonstrate, the 'rigour' of risk assessment and management depends on the degree of domestic opposition compared to threats and inducements from international actors. Our case study of BSE in particular shows that pressure from trading partners influences whether, as well as how, risk assessments are undertaken. At the same time, the nature of risk assessment is subject to ongoing contestation from domestic actors (cf. Fagan 2005), which may shape how such assessments are conducted, although not necessarily the outcome. Consequently, rather than being susceptible to the power of the WTO *per se,* policy-makers are in fact influenced by domestic political pressures as well as existing relationships (including free trade agreements) with important trading partners and competitors. Nonetheless, the threat of prospective retaliation through the WTO remains a potent force for change towards increasing harmonisation of domestic regulations and standards.

As international governmental organisations such as the WTO – as well as transnational corporations – play an increasingly significant role in setting, and acting as arbiters on, global trading rules, the question of how these rules are assembled and harmonised in the context of diverse national policy settings is likely assume much greater political prominence. In this paper

we have used the notion of 'practices of assemblage' to focus on the work involved in harmonising agri-food biosecurity in Australia. However, there are many other sectors elsewhere in the world where efforts to standardise practices, objects and subjects of governing are evident (Higgins & Larner 2010). This opens up unique opportunities for human geographers to examine harmonisation as a key problematic of contemporary global governance, and particularly how global rules and standards are enacted at a national scale, the specific agents empowered through these processes and, most importantly, the implications of harmonisation for domestic social, economic and environmental agendas.

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