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The Estey Centre Journal of **International Law and Trade Policy**

International Trade in Biofuels: Legal and Regulatory Issues

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Governments around the world are betting heavily on biofuels as one part of a solution to a wide range of public policy challenges, from environmental sustainability in the face of climate change, to energy security given rising geopolitical instability, to economic growth especially in rural regions and developing countries. Policy interventions typically take the form of legal and regulatory measures, for example, to drive demand for renewable fuels through mandates, or to subsidize costs through financial and other supports for production and processing of feedstock and output fuels. Such complex legal/regulatory mechanisms combine to create a multi-level or network system of governance. This article analyzes the implications of this complex framework for the production and international trading of biofuels.

Keywords: Cartagena Protocol on Biosafety; multi-level governance; subsidies; tariffs; World Trade Organization

Introduction

The global biofuels industry is, at present, almost universally dependent on government support policies (Global Subsidies Initiative, 2011). Market interventions include policies designed to stimulate domestic production through subsidies to producers, investment in biofuels research and development (R&D) and import tariffs on biofuels, as well as regulations to create demand by mandating biofuel use. As a result of such laws, regulations and policies, existing biofuels markets are heavily price-distorted. Forward and backward linkages with other markets that are highly volatile (e.g., oil) and also price-distorted (e.g., agriculture) make the economics of the biofuels industry exceedingly complex (Kojima and Mitchell, 2007). This economic complexity manifests in a lack of consensus on the opportunity costs of aggressive biofuels policy goals, as well as on the appropriate framework for foresight into the future of biofuels.

Political complexity poses further challenges. In Western democracies, at least, diffused decision making and policy implementation are the modern political realities in respect to almost any important issue. Command and control by central governments is all but obsolete. Hooghe and Marks (2003) review how scholars in different disciplines have different terms (or the same terms with different meanings) to describe this phenomenon, including ‘multi-level’, ‘network’, ‘multilateral’, ‘global’ and ‘polycentric’ governance, to name just a few. Flexibility is the basic, shared postulate: decision-making institutions and processes in such systems can be adjusted to promote efficiency or recognize heterogeneity, as circumstances require (Hooghe and Marks, 2003). That is not to presume, of course, that the design of multi-level governance systems is always deliberate. Often it is accidental or even uncontrollable.

Globally, “multilevel governance has come to be seen as a much broader trend, one which includes the upward diffusion of power to regional and international organizations as well as the downward diffusion of power to various sub-national governments” (Harmes, 2006, 725-6). This process of diffusion is not just vertical or jurisdictional. Negotiations are non-hierarchical between institutions (Peters and Pierre, 2001), including non-government actors who have taken up crucial roles in new systems of governance (Rosenau and Czempiel, 1992; Rosenau, 1997).

Which actors should govern the global biofuels industry and whether or not biofuels governance should be relatively centralized are questions beyond the scope of this article. The pragmatic fact of the matter is that, in the realm of biofuels, authority over policy decisions and associated regulatory rule-making is dispersed among many different actors operating at different levels. The biofuels sector is a textbook example

of multi-level governance in operation, where an unlimited number of intersecting government and non-government actors carry out specific tasks in a flexible, unsystematic process of collaboration and competition (Hooghe and Marks, 2003; Rosenau, 1997).

Studies on the legal and policy aspects of the biofuels regulatory landscape have not yet characterized the issues in this way. The literature, all relatively new, fits within two broad categories: (i) detailed analyses of particular aspects of governance, for example the impacts of government support (Steenblik, 2007), sustainability criteria (de Vera, 2008; Sheehan, 2009; Switzer, 2007; UNCTAD, 2008), or the application of international trade laws to those issues (Desphande, 2006; Echols, 2009; Harmer, 2009; Howse, van Bork and Hebebrand, 2006; Kerr and Loppacher, 2005); and (ii) general overviews of biofuels policy issues and instruments worldwide, regionally or nationally (Ngo, Halley and Calkins, 2008; Kaditi, 2009; Jull et al., 2007; Sorda, Banse and Kemfert, 2010).

One observation about the existing literature is that there are few if any analyses of the complete biofuels governance landscape. The literature mostly focuses on (and typically critiques) policy instruments like renewable fuel mandates or government subsidies designed to support biofuels, neglecting to note at the same time the plethora of laws, regulatory instruments and technical standards that constrain biofuels. Policy supports are in addition to standards and rules that constrain the production, blending, distribution, storage and trade of biofuels.

The literature on biofuels is, in that sense, almost the inverse of the literature on the regulation of biotechnology generally, which tends to focus much more on constraints than supports. Perhaps this is because the regulation of biofuels is in fact primarily supportive of the new industries and technologies, unlike the regulations governing biotechnology generally (Clark, 2010; Phillips, Smyth and Kerr, 2006), or any regulations for that matter, which seem motivated more by precaution concerning risks (Shapiro, 1990; Sunstein, 2005). Similarly, most of the existing policy literature focuses on government not governance. Governance includes not only government measures, but also a wide range of regulatory or quasi-regulatory powers exercised by private actors, including firms, industry associations and third-party standard-setting organizations.

A holistic view of biofuels governance must, however, include all kinds of relevant measures. This article, therefore, begins to connect cross-disciplinary literatures on biofuel policy issues with discussion of specific examples of laws, regulations and standards governing—formally and informally supporting and constraining—this sector. The central objective here is to map the regulatory and

governance structures around biofuels in order to reveal the entire emerging landscape, and to situate this landscape within the analytical framework of multi-level, network governance.

Presuming that a global governance system for bioenergy is needed (or inevitable), some scholars have already started exploring generic models as possibilities (Verdonk, Dieperink and Faaij, 2007). This article, in contrast, does not recommend or even consider specific governance alternatives. Rather, it proceeds on the basis that better surveying the current situation is a prerequisite for normative debate about the likely or appropriate governance models for biofuels in the future. The ultimate vision to which this work contributes is a regulation and governance framework for biofuels that, while not necessarily simpler, let alone harmonized, is more coordinated and better rationalized.

The analysis is presented as follows: First is an overview of international policies and regulations. The most relevant regulations are promulgated and administered through the World Trade Organization, but bi/plurilateral relations are becoming increasingly important. Second, the inclusion of socio-economic factors in domestic regulatory systems as allowed for under Article 26 of the Cartagena Protocol on Biosafety provides a unique opportunity to compare and contrast the application of such regulatory requirements against the standards established by the WTO. Finally, some brief concluding comments are offered.

International Trade Governance Issues

International trade law and policy regarding the production and trade of biofuels have numerous implications. This section examines the role and impact of tariffs, subsidies and standards that fall within the purview of the WTO.

The World Trade Organization

A collision between biofuels and international trade law has been foreseen. Experts such as Kerr and Loppacher (2005, 50) have raised possible issues around subsidies, biotechnological innovation, tariffs and market access and technical barriers to trade, concluding that there is “considerable potential” for costly delays, suboptimal investment levels and stifled market potential. At the time of that prediction international trade in biofuels was small, but significant opportunities were identified for traditional agricultural product exporters like the United States (US) and Canada (ibid.). About the same time, other scholars suggested that the most promising growth opportunities belong to developing countries that have large arable landmass, long growing seasons and low labour costs (Howse, van Bork and Hebebrand, 2006). The promise of biofuel exports from developing countries is compounded by the extremely

ambitious renewable fuel demand mandates adopted by the world's largest energy consumers, the US and the European Union (EU), which are likely impossible to satisfy through domestic production alone, regardless of biotechnological innovation (Williams and Kerr, 2011).

Who benefits remains to be seen, but it is highly likely that the volume and economic value of international trade in biofuels will rise dramatically in the immediate future. As Howse, van Bork and Hebebrand (2006, 4) explain, "the simple logic of demand and supply is likely to lead to increased trade flows of bio-fuels and their feedstocks." They add (at page 6), "Even supposing that future trade in biofuels remains limited, the considerable increase in by-products, whether livestock feed or biobased products, may lead to protectionist pressures, the distortion of world markets, and the need to consider appropriate WTO disciplines." Zah and Ruddy (2009, S1) succinctly highlight the importance of this topic in their introduction to a special issue of the *Journal of Cleaner Production* on the subject of international trade in biofuels: "This global trade in biofuels ... will have a major impact not only on other commodity markets like vegetable oils or animal fodder but also on the global land use change and on environmental impacts." This aspect of biofuels governance, therefore, is not simply a niche best left to lawyers or technocrats.

The literature on international trade law governing biofuels generally identifies more or fewer of the same core issues, though different scholars classify these issues differently. The taxonomy adopted in this article distinguishes the main trade governance mechanisms related to tariffs, subsidies and standards. In this discussion, however, cross-reference and overlap are unavoidable. Examining biofuels and trade law, write Howse, van Bork and Hebebrand (2006, 5), is therefore "a rather complex undertaking."

Tariffs

Starting the discussion with tariffs is logistically sound given the issue of product classification. The classification of biofuels also affects the treatment of other key issues, such as subsidies and agricultural commitments. That is, biofuels would be treated differently under all of these rules depending on whether they were deemed to be industrial, agricultural or environmental products, and also differently depending on the category within those rubrics in which biofuels were to fall.

Classification is initially most important for the determination of the 'bound rate', which is the maximum tariff that can be legally applied to a category of goods, pursuant to Article II of the General Agreement on Tariffs and Trade (GATT). The bound rate applies on a 'most favoured nation' basis, which means that the rate offered by any particular jurisdiction can be lower than the cap committed to, but the

same lower rate must be applied to goods from all members of the WTO, regardless of each other member's particular tariffs or policies.

Governance of the classification system that determines the legality of tariffs under WTO rules is actually driven by another organization altogether, the World Customs Organisation (WCO). The processes and structures of the WCO determine the 'Harmonised Commodity Description and Coding System', or Harmonised System (HS). Tariffs for products within the top-level category, as well as all 'like' products, cannot exceed the bound rate for the category.

Howse, van Bork and Hebebrand (2006) provide a concrete example of how US ethanol tariffs in the 1980s ran afoul of this rule by applying a 50 percent per gallon tariff to fuel ethanol, but not all ethanol falling under the HS headings that existed (and still exist) for ethanol generally.¹ That was clearly illegal, although the US could have done the opposite by applying a lower tariff to fuel ethanol than other ethanol as long as that lower rate applied to fuel ethanol from all WTO members. It is a problem, according to those authors, that there are not separate categories for ethanol based on its end uses, such as fuel or beverages or medical supplies, but rather categories defined on chemical composition, differentiating undenatured and denatured ethanol. Differentiation according to end use, though difficult but not impossible to administer and enforce in practice, would enable countries to better align their tariffs with biofuel policy objectives, making the measurement of international trade of biofuels simpler.

As international law stood prior to the removal of the US import tariff, Steenblik (2007, 2) observes, "Border protection, mainly in the form of tariffs on ethanol, has provided a protective barrier behind which domestic producers have thrived. Brazilian exporters, in particular, face tariffs that add at least 25 percent to the price of their product in the US, and over 50 percent in the European Union." In contrast, petroleum faces no or very low tariffs, at least in North America, which has a distorting effect on global energy markets (Kerr and Loppacher, 2005).

As well as determining the bound rate for tariffs on classes of like products under the GATT, the WCO's HS headings also impact classification schemes adopted in other legal agreements, such as the WTO Agreement on Agriculture (AoA). The AoA applies, naturally, to agricultural products, which are defined to include, among other things, products falling under HS Chapter 1-24. That includes ethanol. That does not, however, include biodiesel, which falls under Chapter 38. So, ethanol is legally classified as an agricultural good while biodiesel is an industrial good, even though both are commonly produced from agricultural feedstocks. That has significant consequences for, among other things, the legalities of the many biofuels subsidies and supports, pursuant to other agreements discussed below. Further complicating

matters, note Howse, van Bork and Hebebrand (2006), is the possibility that either or both kinds of biofuels might alternatively be classified as environmental goods, which are the subject of other, separate negotiations in the WTO Committee on Trade and Environment. Even if all biofuels were classified as agricultural products, distortions might still occur on the basis of differential treatment of feedstocks, as there are considerable differences in the tariff rates, for example, for oils produced from sunflowers, soybeans, sugar cane and canola (Kerr and Loppacher, 2005).

Subsidies

Trade-distorting measures within the WTO are defined by three ‘boxes’ or categories. Green-box subsidies are allowed, but only if there is minimal trade distortion. These are typically government funded programs that support production. Allowances are also provided for environmental protection. Amber-box subsidies are those that distort trade and are targeted for reduction. In agriculture, developed nations are allowed support up to 5 percent of agricultural production and developing countries 10 percent. The final category is the red box, which consists of subsidies that are allowed in agriculture; however, the size of the export subsidies was capped in the AoA. Red-box export subsidies are not allowed at all for industrial goods. Virtually all of the allowable trade-distorting measures are government funded production subsidies.

Subsidies are one of the particular issues within international trade law receiving specific recent attention from researchers (e.g., Harmer, 2009). One problem regarding a WTO challenge of a subsidy is that there is no ability to consider secondary market impacts. While the subsidy may distort one particular sector of any supply chain, there is no ability to claim damages to other sectors of the supply chain, either upstream or downstream. The classification of biofuels under the WCO’s HS determines the legal obligations related to many government support programs under the aforementioned WTO AoA, as well as the WTO Subsidies and Countervailing Measures (SCM) Agreement. Because ethanol and biodiesel are classified differently under the HS, their treatment under these other legal agreements is also different.

The SCM Agreement distinguishes among three categories of subsidies that are either prohibited, actionable or for agriculture. Subsidies offered for exporting products are prohibited and so are subsidies contingent on the use of domestic instead of foreign products. Subsidies that have adverse trade effects are actionable, meaning other WTO member countries can make a complaint or impose countervailing duties. Subsidies that do not have adverse trade effects are not actionable. Adverse effects include injury to domestic competitors with products like the foreign, subsidized product and a range of other harms or serious prejudices such as product displacement, price or market share distortions, or general impairment of benefits to a

WTO member. Agricultural export subsidies that comply with the AoA are not actionable but they may be subject to countervailing measures. Significantly complicating this determination is the fact that subsidies may have adverse effects not on the subsidized product directly, but on co-products, byproducts or upstream or downstream products – a real issue in the context of biofuels feedstocks and byproducts.

But the question anteceding all that is whether a particular government support is, according to legal definitions, a subsidy or something else. This depends on whether there is a financial contribution by the government (including cash payments, tax concessions, revenues foregone or other contributions) and a benefit giving a specific recipient or recipients a competitive advantage. Numerous experts point out that this issue is also often difficult to determine, especially in an industry like biofuels where pervasive government intervention has eroded any meaningful benchmark of what the market might otherwise look like (e.g., Howse, van Bork and Hebebrand, 2006).

While the SCM deals with several aspects of subsidies, other aspects are addressed by the AoA. Broadly speaking, WTO members agreed to reduce over time from various baselines, each government's 'Total Aggregate Measure of Support' for agricultural industries, in order to level the playing field for world markets. Supports are classified in the three coloured 'boxes', as discussed above, depending on how much they are deemed to distort production and trade. Green-box supports do not count toward the total aggregate measure of government support. Supports that do distort trade go in the amber box, which is then, on aggregate, subject to the various governments' cap and reduction commitments.

Here is the problem with the AoA system as applied to biofuels, as alluded to in a report from the United States Department of Agriculture (USDA) (2006, 18): "The AoA measures the sum of supports for various products by basically adopting the products' WCO HS classification." But government supports for biofuels usually apply to the industry, not the product, i.e., feedstocks like corn or canola or sugarcane or soybeans. The question, therefore, is do supports for the industry operate at least in part to confer support on such agricultural products?

Government support for domestic biofuels industries also often comes in the form of large-scale investment in R&D. Such investments would not run afoul of international trade laws (and would belong in the green box under the AoA system) unless the knowledge and technology generated is largely proprietary to domestic firms, as opposed to openly accessible to the general public, including foreigners. Howse, van Bork and Hebebrand (2006) point out that this assumption is difficult to substantiate; in fact those authors are correct to be suspicious, because R&D

supporters normally expect to see exclusive intellectual property rights accruing to domestic firms as a result of their investment.

Subsidies are an issue that have already attracted some sabre-rattling in international trade law (Harmer, 2009). For instance, when American refiners developed a practice called the ‘splash-and-dash’ – import foreign diesel, add a splash of biodiesel, claim a tax credit and then re-export the end product – the EU complained and levelled additional duties on biodiesel imports from the US. As another example, both Brazil and Canada have already asked the WTO to consider the legality of a range of supports provided by the US to its domestic agricultural producers, especially corn producers. These kinds of issues are likely to arise much more frequently in the future.

Standards

Tariffs and subsidies are not the only measures governments might use that constrain liberalization of the multilateral trading system. In fact, these may no longer be the most important measures. Increasingly, variable technical standards and regulations governing matters such as product specifications, labelling requirements or health and safety concerns act as significant barriers to trade. The challenge for international trade law is to balance the desire for world trade liberalization with respect for a government’s sovereign right to regulate internal affairs. These kinds of issues, therefore, are addressed through two WTO agreements, the Technical Barriers to Trade (TBT) Agreement and the Sanitary and Phytosanitary Measures (SPS) Agreement. The fundamental principle underlying these agreements is the principle of non-discrimination.

For many internal measures, the requirement is not to discriminate between foreign and domestic products that are ‘like’ each other. Whether products are like or not depends on their physical characteristics, end uses and consumer habits. The rules stipulate that foreign products cannot be treated less favourably than like domestic products (national treatment) or products from other WTO members. This means that like products can be treated differently, as long as neither product is treated more favourably. Discrimination is either formally enshrined in law (*de jure*) or circumstantially manifested in practice (*de facto*), the latter being more prevalent. For example, *de facto* discrimination may exist when it becomes more costly for foreign producers than domestic producers to comply with particular regulatory or technical standards.

In that context, Kerr and Loppacher (2005) reference standards adopted pursuant to, for example, the SCM Agreement, which apply to a variety of characteristics such as viscosity, flash point, cetane levels, sulfur levels and carbon residues. They also

allude to the possibility of differentiating biofuels based on inputs so that governments could claim, for example, that biodiesel made from soybeans is non-compliant with regulations compared to biodiesel from canola, thus creating a technical barrier to trade.

Several jurisdictions have recently adopted relatively more or less onerous (and almost always different if not inconsistent) standards governing all kinds of environmental sustainability matters from life-cycle greenhouse gas (GhG) emissions to land-use restrictions. So far, the WTO compliance of the EU's sustainability standards has received the most specific commentary (Swinbank, 2009; Switzer and McMahon, 2010), but there is also literature addressing the U.S. position in particular (Early, 2009), as well as the legality of these sorts of standards generally (Ackrill and Kay, 2010; Charnovitz, Earley and Earley, 2008; de Vera, 2007; Switzer, 2007).

Measures that differentiate based on methods of production, including life-cycle GhG emissions, are slightly more controversial but, in the opinion of several leading experts, also most likely legal (Howse, van Bork and Hebebrand, 2006). The argument that sustainability criteria differentiating based on life-cycle GhG emissions might constitute an illegal trade barrier boils down to what is known as the product/process distinction. Under the GATT, that distinction is not normally allowed on the basis of processing and production methods, leading some scholars to argue that standards governing emission levels, cultivation practices, labour standards and any other production factors that do not change the end product would contravene WTO rules (Isaac and Kerr, 2003).

However, other experts, such as Howse, van Bork and Hebebrand (2006), have come to a different conclusion. They emphasize that the same rules do not necessarily apply in all other WTO contexts, and that the underlying rationale for sustainability criteria referencing life-cycle GhG emissions is very different from the motivations that led to the initial development of the product/process distinction.

At the other end of the spectrum are measures that ostensibly judge other governments' public policy priorities by addressing, for instance, labour, property or human rights and other social standards. A general consensus seems to exist that these are relatively more difficult to justify and uphold than other kinds of sustainability standards. Charnovitz, Earley and Earley, (2008) devote an entire discussion paper to this specific topic. They point out (2008, 1) that "the prescription by one country or customs union of the social standards to be followed by producers of another country as a condition for access to the prescribing country or customs union's markets" raises extraordinarily complex questions that implicate not only biofuels but the broader

debates linking trade and social issues. A more detailed discussion of this follows below.

One of the keys to upholding the legality of any sustainability standards under the WTO would be that the criteria used to differentiate products are objectively verifiable, developed consultatively by the international community and validated by stakeholders. The more that systems for certification proliferate, and the more conflict and confusion that results, the less likely it becomes that any particular approach can withstand legal scrutiny. Similar concerns could be raised under the TBT Agreement, which requires WTO members to adhere to international standards where possible, and in any case to use technical standards that do not create unnecessary trade barriers. For example, after substantial analysis, Swinbank (2009, x), draws the following concise conclusion about the legality of the EU's sustainability standards, though his remarks are equally applicable to sustainability standards more generally: they can be defended successfully only if "they are non-discriminatory and scientifically based and ... they have been imposed only after meaningful negotiations, with the [jurisdiction's] main suppliers, to develop international standards." Switzer and McMahon (2010) go slightly further and suggest that if jurisdictions like the EU want to increase the chances of a successful defense, they should initiate the necessary international negotiations.

An issue that has so far not received enough attention is the use of biotechnology, particularly genetic engineering, in the production of feedstocks for biofuels. Many scholars frame this issue through the lens of WTO law alone, but as Kerr and Loppacher (2006) observe, the Cartagena Protocol on Biosafety (CPB) is also important in the global biofuels governance picture. The WTO and the CPB approach the issue of trade in biotechnology products from different perspectives and with different objectives, with trade liberalization being the WTO's primary goal and precaution over risks threatening biodiversity being the driving principle behind the CPB. There is no clear way to resolve potential conflicts between these governance instruments (Smyth, Phillips and Kerr, 2009; Smyth, Kerr and Phillips, 2011).

When the issue of genetically modified products was previously raised at the WTO, with respect to the EU's treatment of foreign biotech products, a dispute settlement panel held the measures did not constitute less favourable treatment of foreign versus domestic products but rather biotech versus non-biotech products (EC, 2006). While some measures have been determined to be inconsistent with WTO rules, a *de facto* moratorium still exists that makes it difficult for the products of agricultural biotechnology coming largely from North America to enter the EU. This issue may erupt again when GM energy crops are inevitably exported to Europe. The

USDA recently approved a GM variety of corn, called 'Enogen', which contains a microbial gene that produces an enzyme that breaks down starch into sugar to make processing for biofuels more efficient (Pollack, 2011). How will jurisdictions like the EU react to such biotechnological innovations, and will their applicable technical regulations and related measures comply with WTO rules?

The preceding discussion is by no means exhaustive of the many WTO-related issues triggered by international trade in biofuels. Furthermore, the WTO is not the only forum where the governance frameworks of multiple jurisdictions converge. Scholars have also cross-referenced the relevance for biofuels of the Kyoto Protocol (Deshpande, 2006) and by extension all recent developments in respect to the United Nations Framework Convention on Climate Change. The global governance of biofuels is, or could be, impacted by the patchwork of bilateral trade agreements and ongoing negotiations.

International Regulatory Issues

As mentioned above, the CPB represents a recent effort to provide a comprehensive international structure to ensure the protection of biodiversity and to facilitate consideration of socio-economic factors. The CPB is a new international institution negotiated specifically to deal with trade in the products of biotechnology. Concluded in Montreal in January 2000, the CPB provides rules for transboundary movements of living modified organisms (LMOs) intended for environmental release as well as those destined for the food chain.

Most importantly, Canada and the US along with a number of other important producers of GM products are not signatories to the CPB. Hence, a debate has begun about which international organization takes precedence when international law conflicts arise. These issues have not been satisfactorily addressed, leaving countries unclear as to which set of internationally agreed provisions apply to GM products (Smyth, Phillips and Kerr, 2009; Smyth, Kerr and Phillips, 2011).

Socio-economic assessments of LMOs have become a controversial issue under the CPB (Falck-Zepeda, 2009). The objective of the protocol is to contribute to ensuring an adequate level of protection in the field for the safe transfer, handling and use of 'living modified organisms resulting from modern biotechnology' that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health and specifically focusing on transboundary movements.

Under the protocol, parties may also include socio-economic considerations in reaching decisions on imports, including imports that will result in the planting of

LMOs for food or fuel, as stated in Article 26 of the convention. Article 26.1 states, “The Parties, in reaching a decision on import under this Protocol or under its domestic measures implementing the Protocol, may take into account, consistent with their international obligations, socio-economic considerations and sustainable use of biological diversity, especially with regard to the value of biological diversity to indigenous and local communities” (CBD, 2000, 19). Some argue that the CPB limits the scope of socio-economic assessments to those factors affecting biodiversity with an emphasis on those affecting local and indigenous communities. Nevertheless, even if the scope of the CPB is limited, many countries include or have considered including socio-economic considerations in their national legislation. While Article 26 provides the opportunity for including a socio-economic assessment in national biosafety regulations, international concerns have been raised that socio-economic assessments will become a mandatory part of the approval process. Mandatory inclusion of socio-economic considerations for the approval of a genetically modified (GM) crop may have negative effects on the efficiency or even the viability of biosafety, if inclusion in a biosafety process is done without clear standards and rules for decision making or if issues to be explored are not clearly defined.

The challenge of recognizing socio-economic considerations is their potential for nefarious use. All too often, socio-economic considerations are used by domestic governments to mask third-party protection or to prevent the import of competing products from other countries. Examples of socio-economic considerations can include, but are not limited to, food security; benefits to society; indigenous knowledge; impacts on biodiversity; health impacts; environmental impacts; market access; consumer choice; labour impacts; intellectual property rights; ethical implications; and religious/cultural implications.

The key focal point that needs to be taken from Article 26.1 is the concise wording of “consistent with their international obligations”. There are those that argue that socio-economic considerations for biotechnology applications for food and industry comply with the WTO (CBD, 2011). However, the reality is that if the additional regulatory requirements resulting from socio-economic considerations cannot be scientifically justified, then they are a barrier to trade and therefore illegal according to WTO standards.

When it comes to the regulatory framework required to approve products for import or production in a country, the regulatory framework must comply with the standards established by the various standard-setting institutions of the WTO.² These standards have to be based on sound science. They have been established based on the science that results from doing risk assessments on new products. For example, a

buffer zone between two fields can be established at the optimal distance by using the scientific data from pollen flow studies; in some cases, this may be ten meters.

Countries are allowed to include regulatory standards that exceed those of the WTO, but again, such inclusion must be based on science. For example, a country could have an eco-zone that requires a wider buffer, and so for the area around the eco-zone the buffer might increase to a hundred meters. If a scientific risk assessment is done that finds there is quantifiable data to support the increase in distance, this form of regulatory deviation is accepted.

What would not be acceptable under WTO protocol would be to include a socio-economic assessment. For example, if a socio-economic assessment included the benefits to society or the ethics of allowing a product's approval for import or production, these would be a barrier to trade. There are no established methodologies that science could readily use to gather the data required to justify such a standard. If scientific rationale cannot be used to establish the inclusion of a regulatory standard and it distorts trade, then such a standard is in contravention of the WTO.

The SPS Agreement of the WTO establishes the use of scientific decision-making criteria as the justification for barriers to trade in cases of human, animal and plant health and the environment. Three standard-setting organizations are the basis for this: Codex; the Office International des Epizooties (OIE), which is now known as The World Organization for Animal Health; and the International Plant Protection Convention (IPPC).

These three organizations provide the technical standards framework for the SPS. If an International Standard for Phytosanitary Measures (ISPM) established by the IPPC³ allows for a trade barrier, then every member country of the WTO is allowed to include this standard in its domestic regulatory framework without fear of challenge. If a WTO member country implements a regulatory standard that contravenes the IPPC standards, then that country may be accused of using a trade barrier in a case brought to the WTO by any other member country. A country may implement higher standards than IPPC standards but only if there are a scientific justification and a risk assessment that satisfy SPS commitments.

Based on the definition of economic damage provided by ISPM No. 5⁴ of the IPPC and therefore as part of the SPS Agreement of the WTO, any country that incorporates socio-economic considerations into its domestic regulatory system should understand that such considerations may be deemed a barrier to trade. Such country should thus expect the possibility of a WTO dispute regarding that barrier's removal.

The growth in bio-industrial trait biotechnology, especially in developing nations, is poised to be one of the biggest technology developments within the field of biotechnology. The demand for socio-economic regulations is strongest in many developing countries and also within the EU. European countries like Denmark, Germany, France, Austria, Norway and Italy have already put regulatory requirements in place that constitute barriers to trade in the products of biotechnology. Presently, there are no intentions to allow for the commercialization of technologies that will use transgenic applications in the production of bio-industrial crops in Europe.

Conclusions

The literature on biofuel law and policy is large and growing. The issues are complex, and becoming more so. Framing them through the lens of multilevel governance helps to put key priorities into perspective and enables further consideration of the best ways to manage and ideally improve the biofuels regulatory landscape.

The incompatibility of socio-economic considerations regarding bio-industrial crops as they are developed under the guidelines of Article 26.1 of the CPB in relation to the WTO standards that govern international trade in agricultural commodities is glaringly evident. The impact on biofuels could be staggering as the parties opposed to bio-industrial crops aggressively pursue the development of socio-economic considerations that will be in direct contravention of the WTO, thereby triggering trade disputes at the WTO.

Within this context, it is a challenge to envision a future where trade in biofuels can exist. The Americas are strong adopters, in most cases, of biotechnology and its assorted innovations, resulting in the production of transgenic crop varieties that will be used in the production of biofuels. Europe and much of the developing world just as strongly resist this technology and are pushing for the increase in barriers to commercialization and trade. Ultimately, one can see that the future will involve pitting the WTO against the CPB. Under this scenario, it is hard to envision how any nation can benefit, let alone the environment.

Acknowledgement

This research is supported by VALGEN (Value Addition through Genomics and GE³LS), a project sponsored by the Government of Canada through Genome Canada and Genome Prairie.

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Endnotes

1. The fact that this tariff was not brought before the WTO by any country, particularly Brazil, suggests that more than just economics was at stake. Further discussion regarding this tariff, while interesting and somewhat speculative, would be merited if the tariff had not expired. The U.S. ethanol import tariff ceased on December 31, 2011. See the *New York Times* article from January 1, 2012: <http://www.nytimes.com/2012/01/02/business/energy-environment/after-three-decades-federal-tax-credit-for-ethanol-expires.html>.
2. The WTO does not set standards itself; rather, it governs the standards set by standard-setting organizations. In the case of plant standards, the standards are set by the International Plant Protection Convention and its members. The WTO adjudicates complaints about violation of these standards as they pertain to trade.
3. Available online at https://www.ippc.int/index.php?id=ispms&no_cache=1&L=0.
4. Available online at:
https://www.ippc.int/file_uploaded/1273490046_ISPM_05_2010_E.pdf.
Unacceptable impact and/or environmental damage related to the unintended introduction of a plant pest is compensable.