I. INTRODUCTION

The regulation of foods or feed that are genetically modified organisms (GMOs) or are made from or contain GMOs\(^1\) raises complex policy challenges for governments, including on health, food safety, environment, trade and ethics. Responses by governments to some of these issues have highlighted the potential for tension between domestic regulation and international trade rules. In a high-profile dispute, the United States, Canada and Argentina have challenged a *de facto* moratorium by the European Union and associated bans by EU Member States on GM food and feed.\(^2\) The dispute is currently being examined by a WTO panel, including claims that the moratorium and bans are inconsistent with the Agreement on Sanitary and Phytosanitary Measures (the SPS Agreement), the Agreement on Technical Barriers to Trade (the TBT Agreement) and the General Agreement on Tariffs and Trade 1994 (GATT 1994).

While the dispute has focused international attention on bans on GMOs, labelling and product tracing requirements on GM food may also have commercial and WTO implications. The EU’s GM labelling and traceability\(^3\) regulation, which came into force in April 2004, for example, imposes stringent requirements on the trading of GM food in the market place.\(^4\) Other WTO Members have also implemented regulatory regimes incorporating labelling of GM foods, sometimes with product-tracing elements.

This paper examines the WTO implications of requirements for the labelling and product tracing of GM food. Given the potential breadth and complexity of the issues, the paper will limit its examination to a number of pertinent issues in relation to the SPS Agreement, the TBT Agreement and GATT 1994. These are: the application of the WTO Agreements where labelling and product-tracing requirements are stated to have multiple policy objectives; whether GM food are “like products” for the purposes of Article 2.1 of the TBT Agreement.

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\(^1\) For convenience, we refer to these collectively as genetically modified (GM) food.

\(^2\) WTO disputes WT/DS291, 292 and 293. It is possible that that the disputes may lapse if the decision of the European Commission on 19 May 2004 to approve imports of a variety of maize which has been modified by a Swiss firm, Syngenta, extends to other GM varieties, especially those grown in the challenging Members. However, it is noteworthy that: the decision was taken by the Commission because some EU Member States continue to resist approving new GM crop varieties, even where they have been approved by the EU’s scientific committees; and that the approval does not extend to cultivation within the EU.

\(^3\) Also known as product tracing. We use this generic term except when referring to the EU’s regulation which uses the term traceability.

\(^4\) There are growing calls in the United States for a WTO challenge against the EU’s labelling and traceability requirements. In November 2003, the 22 members of the Agriculture Biotech Planning Committee wrote to US Trade Representative Robert Zoellick and Secretary for Agriculture Ann Veneman arguing the EU regulation to be WTO-inconsistent and urging the Administration to prevent further disruption to US exports: Inside US Trade, November 28 2003, pp. 6-8.
and Article III:4 of GATT 1994; and the likely impact of labelling and product-tracing requirements for the competitive opportunities of GM food, and the implications for the “no less favourable” treatment requirement in Article 2.1 of the TBT Agreement and Article III:4 of GATT 1994.

II. THE REGULATION OF GM FOODS

A. The Development of GMOs

Humans have been genetically modifying plants, animals and other living organisms (such as yeast) for thousands of years. Selective breeding of desired characteristics was integral to the development of an agrarian society. More recently, farmers and/or scientists have used other techniques to modify and develop organisms: grafting, crossbreeding (including hybridisation), induced mutation through exposure to radiation and/or chemicals, and the use of tissue culture to enhance the development of cultivars. For some decades scientists have been able to avoid many of the pitfalls of earlier methods of genetic modification by inserting one or more specific genes into a plant, animal or other organism – a process known as recombinant DNA technology. GMOs are organisms modified through this technology in a way that does not occur naturally by mating or natural recombination.

Reaction to this new technology has been mixed. Genetically modified pharmaceuticals and therapeutic goods have gained widespread consumer acceptance. Other technical and industrial uses of GMOs (for example, as agents to clean up environmental spills) have been welcomed. Commercial plantings of GM crops began in China in the early 1990s (tobacco was the first such crop) and in the United States in 1994. By 1999, thirteen GM species were grown commercially. The most widely grown GM crops are soybeans, corn, cotton and canola, with cultivation concentrated in the United States, Argentina, Canada and China. GM plants incorporate a variety of genetic modifications including the insertion of pest- and/or herbicide-resistant genes as well as genes designed to enhance flavours, resist frost or slow ripening.

Although GMOs are widely used in food products in North America they are less accepted in other markets, especially European ones. This reflects consumer, commercial and regulatory responses to concerns about potential risks to human health and the environment. These concerns have not been assuaged either by detailed scientific studies (including by the EU’s

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6 European Communities – Measures Affecting the Approval and Marketing of Biotech Products (WT/DS291, 292, and 293), First Submission of the United States, 21 April 2004, p. 8
8 European Commission, “Questions and Answers on the regulation of GMOs in the EU”, Memo/02/160 – Rev, Brussels, 1 July 2003, p. 1. Note that, strictly speaking, all of the earlier techniques also resulted in genetic modification. However, while not accurate, GMO is a widely accepted terminology.
9 These include insulin and vaccines for hepatitis B. Adler (note 7) lists a number of other popular and widely used genetically engineered pharmaceuticals, p. 177.
11 *ibid*. These were soybeans, corn, cotton, canola, potatoes, squash, papayas, tomatoes, flax, tobacco, sugar beets, melons and rice.
scientific committees and European national assessment bodies)\textsuperscript{13} that have found GMOs assessed for consumption by humans to be as safe as their non-GM counterparts,\textsuperscript{14} or by the lack of studies demonstrating adverse effects of GM foods on human health.\textsuperscript{15} Factors contributing to consumer concerns in Europe include a loss of confidence in the EU’s food safety regulatory regime in the wake of mad cow disease, foot and mouth disease, and dioxin contamination.\textsuperscript{16} These crises contributed to a more general scepticism about the veracity of scientific advice and the practices of agrifood producers, exacerbated by the at-times dismissive attitude of biotechnology companies, especially in the 1990s.\textsuperscript{17}

B. GM Labelling and Product Tracing Requirements

In response to the policy challenges, a number of governments have implemented regulatory regimes with requirements for GM foods that go beyond those for non-GM foods. Such regimes can include requirements that GM foods undergo pre-market release safety assessments before they can be sold or used in the marketplace, as well as labelling and product-tracing requirements that are specific to GM foods.

The EU was one of the first jurisdictions to establish a regulatory framework for GMOs. Directive 90/220/EEC, which covered the experimental release and placing on the market of GMOs, entered into force in October 1991. While few obligations on GM labelling or product tracing were initially imposed by the EU, this has changed over time.

\textsuperscript{13} European Commission (note 8), pp. 14-26.
\textsuperscript{14} Some GMOs have only been approved for animal feed, industrial use or as the basis for pharmaceuticals. In the case of Starlink corn, this was because of the possibility that the pesticide it produces may cause allergic reactions.
\textsuperscript{15} This was the conclusion of the papers presented at GM Food Safety: Facts, Uncertainties and Assessment, The OECD Edinburgh Conference on the Scientific and Health Aspects of Genetically Modified Foods, 28 February – 1 March 2000, a conference requested by leaders of the G7 countries in response to consumer and other concerns. Subsequent research has similarly failed to identify health risks among GMOs approved for human consumption: see, for example, a report by the British Medical Association (British Medical Journal, 328:602, March 13, 2004) urging continuing research which acknowledges the current absence of any evidence suggesting GM foods pose a threat to human health; “Working Document of the Commission Services on Traceability and Labelling of GMOs and Products Derived from GMOs,” ENV/620/2000, November 2000 stating that no peer-reviewed scientific article reporting adverse effects on human health as a result of eating biotech food has appeared. (p. 1); The Royal Society, “Genetically modified plants for food use and human health—an update,” February 2002, at 4 (http://www.roysalgac.uk); and National Academy of Sciences, Transgenic Plants and World Agriculture 3 (July 2000) (http://www.nap.edu/openbook/N1000227/html/R1.html). This report was jointly prepared on behalf of the Royal Society of London, the Brazilian Academy of Sciences, the Chinese Academy of Sciences, the Indian National Science Academy, the Mexican Academy of Sciences, the National Academy of Sciences of the United States, and the Third World Academy of Sciences.
\textsuperscript{16} For a fuller discussion of the factors affecting attitudes of EU, especially French, citizens, see Sylvie Bonny, “Why are most Europeans opposed to GMOs? Factors explaining rejection in France and Europe”, Electronic Journal of Biotechnology, Vol. 6, No. 1, Issue of April 15, 2003 http://www.ejbiotechnology.info/content/vol6/issue1/full/4. This has interesting observations on, among other factors, the importance of opposition to GMOs in restoring the financial viability of Greenpeace and its impact on the profile of other NGOs. For an analysis suggesting that farmers in the EU benefit from restrictions on GMOs in the EU and that this may be a factor explaining different approaches to regulation, see Kym Anderson and Lee Ann Jackson, “Why are GMOs a problem for the WTO?”, Paper accompanying this one.\textsuperscript{17} For contrary views on potential risks and consumer responses see, among many, Adler (note 7), pp.173-182 and Sara Pardo Quintillán, “Free Trade, Public Health Protection and Consumer Information in the European and WTO Context: Hormone-treated Beef and Genetically Modified Organisms”, Journal of World Trade 33:6 (2002), pp. 176-179.
The current EU Regulation 1830/2003 imposes stringent labelling and product tracing requirements for GMOs and GM products. All GM plants, seeds, food and feed, and food produced from GMOs in which DNA or protein of GM origin is detectable must be labelled as GMOs, as well as food and food additives and flavourings produced from GMOs in which no GM DNA or protein is detectable (such as highly refined oils and sugars). Feed and feed additives produced from GMOs also require labelling.

The Regulation excludes products from labelling where the adventitious presence of GMOs approved for release in the EU is less than a 0.9 per cent threshold level. For GMOs not approved for release in the EU, no presence is acceptable. In addition, labelling will not be required for food produced using a GM enzyme (such as baked goods that use amylase) or food from animals fed on GM feed (reflecting the absence of detectable genetically modified DNA or protein in these products).18

Regulation 1830/2003 also imposes traceability requirements for GMOs and GM products. The requirements are additional to general product-tracing requirements applying to food and feed, and require stringent record-keeping and tracing of the GMO throughout the production chain. This is through an obligation for traders and users to record an appropriate unique identifier for each GMO in all documentation from the point of production, through processing, to wholesale and retail distribution.

Reflecting the absence of an agreed international standard and regulatory diversity, other countries have adopted a range of approaches. A number of countries have implemented mandatory labelling of GM foods for human consumption, including Australia and New Zealand, Brazil, China, Taiwan, Indonesia, Japan, Korea, Malaysia, Saudi Arabia, South Africa and Thailand. None of these countries, however, has introduced product-tracing requirements comparable to those in EU Regulation 1830/2003.19

The regulation of GM food in Australia and New Zealand is covered under Standard 1.5.2 “Food Produced Using Gene Technology” in the joint Australia New Zealand Food Standards Code. The standard came into effect in December 2001. The standard requires that all foods produced using gene technology be assessed and approved before sale and use.20 The standard also requires that all GM food and ingredients be labelled where they contain novel DNA or novel protein in the final food, or have altered characteristics.21 The label on a package of GM food must include the statement “genetically modified” in conjunction with the name of the food, ingredient or processing aid.22 Highly refined food – such as oils and sugars – is excluded from mandatory labelling where there are no traces of GM characteristics in the final product.

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18 European Commission (see note 8), Annex 5
19 A summary of the labelling and other regulatory regimes in key markets in Europe, North America, Asia and the Middle East can be found in Max Foster, Peter Berry and John Hogan, Market Access Issues for GM Products: Implications for Australia ABARE eReport 03.13 (Canberra: Australian Bureau of Agricultural and Resource Economics, 2003). Further detail on the reactions in Asian markets to GM foods and the associated regulatory regimes can be found in Department of Foreign Affairs and Trade, Subsistence to Supermarket II: Agrifood Globalisation and Asia Volume III – Asian Agrifood Demand Trends and Outlook to 2010 (Canberra: DFAT, 2004), pp. 113-133. Additional information can be found in Heike Baumüller, Domestic Import Regulations for Genetically Modified Organisms and their Compatibility with WTO Rules Some Key Issues (Trade Knowledge Network Paper, August 2003)
20 Australia / New Zealand Food Standards Code, Standard 1.5.2, clause 2.
21 ibid., clause 4.
22 ibid., clause 5.
The Australian and New Zealand labelling regime is not intended to serve as a health warning but to provide consumers with information. Food businesses such as manufacturers, packers, importers and retailers are required to: take all reasonable steps to determine if their food or ingredients are produced using gene technology; find out if the food or ingredient produced using gene technology is approved; and determine what the labelling requirements are for the GM food or ingredient. Negative claims such as “GM free” labels are voluntary, although businesses may be required to substantiate claims.

The Australia / New Zealand standard however recognises that additional labelling or information requirements may be justified for health or food safety in certain circumstances such as where the GM food contains new allergens, or where nutritional factors or toxicants are different from its non-GM counterpart.

Reflecting a fundamental philosophical difference in regulatory approach, neither the United States nor Canada require mandatory labelling of GM foods, or product tracing beyond that required for non-GM foods. The only exception is when GM foods differ substantially from their conventional counterparts. As of 2003, no GM foods on the market have required such labelling. In contrast, a significant number of US food producers are labelling their products as non-GM.

In Canada, a Parliamentary Standing Committee examining the labelling of GM foods recommended that the Canadian government continue to develop a standard for the voluntary labelling of foods produced with biotechnology. The Committee also stated that:

Labelling must not replace assessment of the safety of the food, which is the responsibility of Health Canada and the Canadian Food Inspection Agency. Making labelling mandatory might give the impression that existing measures to ensure food safety are not adequate. That could have negative consequences . . .

A survey by the Consumers’ Association of Canada in October 2003 has however found 91 per cent support for mandatory labelling of GM foods.

D. International Attempts at Regulation / Standards-Setting

Efforts have been made to negotiate international agreements and/or standards covering GMOs. These negotiations have been problematic, in large part reflecting the philosophically different approaches to domestic regulation of GMOs in the EU, which assumes GMOs are

24 Such claims are subject to the federal Trade Practices Act and associated state legislation.  
25 Australia / New Zealand Food Standards Code, Standard 1.5.2, clause 7.  
Unlike their non-GM counterparts, and the United States, which assumes GMOs are like their non-GM counterparts.\textsuperscript{29}

The prime focus for standards-setting has been the Codex Alimentarius Commission, the international standard-setting body for food safety. An Ad Hoc Working Group on Biotechnology was convened to examine food safety issues as well as sector-specific issues, such as labelling and the use of GMOs for animal feed, in existing Codex bodies. The three major outcomes of the Ad Hoc Working Group – Principles for the Risk Analysis of Foods derived from Modern Biotechnology, Guidelines for the Conduct of Food Safety Assessment of Foods Derived from Recombinant-DNA Plants and Guidelines for the Conduct of Food Safety Assessment of Foods Produced Using Recombinant-DNA Micro-organisms – were adopted by the Codex Alimentarius Commission in July 2003.\textsuperscript{30} Guidelines for the labelling of GM foods have however been more contentious.\textsuperscript{31}

The potential impact of GMOs has also been recognised in environmental forums. The parties to the Convention on Biological Diversity (1992), which included some references to biotechnology, agreed to negotiate what became the Cartagena Protocol on Biosafety (2000) to cover the transboundary movement of living GMOs (LMOs) “that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health.”\textsuperscript{32} Specifically excluded from coverage are other GMOs and products made from GMOs such as processed food, pharmaceuticals and other medical products.

Given it does not apply to processed products, the Biosafety Protocol has no provisions on labelling \textit{per se}. However, Article 18 sets out documentation requirements for shipments of LMOs, with those intended for direct use as food, feed or processing requiring documentation that identifies that they “may contain” LMOs. The parties further agreed to establish detailed requirements no later than two years after entry into force (i.e. by 11 September 2005).\textsuperscript{33} The EU claims that its labelling and traceability regulation “take[s] account . . . of the requirements of the Cartagena Protocol on Biosafety with respect to the obligations of importers.”\textsuperscript{34}

\section*{III. REGULATION OF GM FOODS AND THE WTO AGREEMENTS}

\textsuperscript{30} Report of the Twenty-Sixth Session of the Codex Alimentarius Commission, June-July 2003, ALINORM 03/41.
\textsuperscript{31} The Codex Committee on Food Labelling has, for some time, been developing Draft Definitions and Proposed Draft Guidelines for the Labelling of Foods and Food Ingredients Obtained Through Certain Techniques of Genetic Modification/Genetic Engineering. Negotiations have been slow with consideration disagreement between member governments.
\textsuperscript{32} At the first Meeting of the Parties (MOP) to the Biosafety Protocol, held in Kuala Lumpur from 23 to 27 February 2004, Parties reaffirmed existing documentation requirements and urged Parties and other governments to require information on the name of the LMO and the transformation event or unique identifier code. An expert group will elaborate the documentation requirements further, including labelling thresholds and additional information, for the next MOP in 2005.
\textsuperscript{33} European Commission (note 8), p. 12. The Commission also claims that the regulation “take[s] account of the Community’s international trade commitments”.

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The regulation of GM foods by WTO Members’ governments may be subject to the rights and obligations of the WTO Agreements where they have an impact on international trade. The WTO implications of GM foods have been examined by a number of commentators.\(^{35}\) Given the potential breadth and complexity of the topic, the focus of this paper is on following questions:

- Which WTO Agreements apply when labelling and product-tracing requirements are stated to have multiple policy objectives?

- Are GM foods “like products” to non-GM foods for the purposes of Article 2.1 of the TBT Agreement and Article III:4 of GATT 1994?

- What is the likely impact of labelling and product-tracing requirements for the competitive opportunities of GM food, and what are the implications for the “no less favourable” treatment in Article 2.1 of the TBT Agreement and Article III:4 of GATT 1994?

### A. Which Agreements Apply?

As a general principle, WTO rights and obligations apply concurrently and a measure may be subject to disciplines arising under different WTO Agreements.\(^{36}\) Which Agreements apply in a particular case will however turn on the purpose and characteristics of the particular measure at issue, and its application to a specific product.

To that end, the regulation of GM foods raises particular challenges. These arise from the fact that governments may attach different or multiple policy purposes – such as food safety, informing consumers, avoiding misleading or deceptive conduct and protecting the environment – to labelling and product tracing measures. There is also potential for legal ambiguity given the uncertainty surrounding the relationship between the TBT Agreement and GATT 1994, the narrow scope of the SPS Agreement, and the mutually-exclusive application of the SPS and TBT Agreements.

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\(^{36}\) An alternative view – that where a labelling measure is subject to both TBT and SPS obligations, compliance with one should be sufficient for the measure to be WTO consistent – has been advocated by Peter Rott (note 35), pp. 579-580. However, this is contrary to the holdings of the Appellate Body and Panels that all Annex 1A agreements apply cumulatively. See Appellate Body Report, *Brazil – Measures Affecting Desiccated Coconut*, WT/DS22/AB/R (adopted 21 February 1997) and Appellate Body Report, *Argentina – Safeguard Measures on Imports of Footwear*, WT/DS121/AB/R (adopted 14 December 1999), paras 79-81.
1. The Agreements

(a) The SPS Agreement

The SPS Agreement applies to measures that fall within the definition of an SPS measure in Annex A of the Agreement. Annex A defines an SPS measure as including “all relevant laws, decrees, regulations, requirements and procedures” applied to:

- protect people from food-borne risks (including those arising from additives, contaminants, toxins or disease-causing organisms), risks from animal and plant diseases, and risks from pests;
- protect animals and plants from diseases and feed-borne risks; or
- prevent or limit damage from the entry, establishment or spread of pests.

The SPS Agreement elaborates on the conditional right accorded in Article XX(b) of GATT 1994 for WTO Members to apply measures necessary to protect human, animal or plant life or health. Article 2.4 of the SPS Agreement provides that SPS measures which conform to the relevant provisions of the SPS Agreement are presumed to be in accordance with GATT 1994 provisions relating to the use of SPS measures, in particular Article XX(b). Not all measures taken to protect life or health however fall within the Annex A definition. Consequently, the SPS Agreement applies to a narrower scope of measures than Article XX(b) or the TBT Agreement, which recognises the protection of human health or safety and animal or plant life or health as a legitimate objective for technical regulations. (The TBT Agreement does not apply to SPS measures: TBT Article 1.5.)

Paragraph 1 of Annex A elaborates that SPS measures may relate to inter alia: end product criteria; processes and production methods; testing, inspection, certification and approval procedures; quarantine treatments; sampling procedures and risk assessment methods; and packaging and labelling requirements directly related to food safety.

The SPS Agreement establishes stringent obligations on the application of SPS measures. These include that SPS measures: have a scientific basis; be based on sufficient scientific evidence and risk assessment where they do not conform to an international standard and are not provisional measures; and not be no more trade-restrictive than necessary to achieve the appropriate level of sanitary and phytosanitary protection.

Given the concurrent application of WTO obligations – and the stringency of SPS Agreement obligations – it is likely that a complaining Member will seek to challenge a GM regulatory regime under the SPS Agreement. This will however turn on whether such requirements fall within the definition of an SPS measure under Annex A.

38 It is not clear that Members envisaged that the bar would be set as high as it has been, for example, to produce a risk assessment that meets the requirements of Articles 2, 3 and 5.
39 This is the primary claim of the complaint brought by the United States, Canada and Argentina. In its first submission to the panel the United States only dealt with alleged violations of the SPS Agreement (with the
A WTO Member’s characterisation of the regulatory purpose of its own measure would normally be relevant to a panel’s examination under Annex A of the SPS Agreement. While this characterisation would not be binding in a legal sense, panels could be expected to accord some deference to a Member’s explanation of the regulatory purpose or application of its own measure. However, neither panels nor the Appellate Body have yet had to adjudicate on a measure that was claimed by the complainant to be an SPS measure but which the defendant argued was not. Nor have there yet been any rulings on how much of a measure must be for the purposes of protecting human, animal or plant life or health for it to qualify as an SPS measure.40

The definition of an SPS Agreement in Annex A also suggests that regulatory purpose will be relevant. A measure will fall within the scope of the definition of an SPS measure where it was “applied to” protect against risks of pests or diseases, or food-borne risks. Whether a particular risk was in fact real or scientifically justifiable will go more towards the application of the substantive provisions of the Agreement, as opposed to whether a measure falls within the scope of the SPS Agreement.

(b) The TBT Agreement

In contrast to the limited scope of SPS measures, the definition of a TBT measure encompasses a broad range of domestic regulation. The TBT Agreement distinguishes between standards, with which compliance is not mandatory, and technical regulations, with which compliance is mandatory. A technical regulation is defined in Annex 1 as a

   Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

This definition captures a wide range of domestic measures. Product characteristics can be defined positively (i.e. a product must have these characteristics) or negatively (i.e. a product must not have these characteristics).41 The products at issue need not be specified in the technical regulation which may apply to all products.42 However, a measure that consists only of a prohibition on one or more specific products may not constitute a technical regulation if it does not prescribe any characteristics on those products.43 Thus, regulations that apply to GM foods will need to be examined on a case-by-case basis to determine whether they are encompassed by the definition of a technical regulation.

Like the SPS Agreement, the TBT Agreement imposes substantive disciplines upon measures that meet the definition of a technical regulation. These include: non-discriminatory treatment

41 Appellate Body Report, European Communities – Measures Affecting Asbestos and Asbestos-Containing Products WT/DS135/AB/R (adopted 5 April 2001), para. 69
42 ibid., para. 70
43 ibid., para. 71
of like products (see Section III.B below for a discussion of the like product issue); a least-trade restrictive test; the need for the technical regulation “to fulfil a legitimate objective” (protecting human health and safety, animal or plant life or health or the environment, and preventing deception are identified as examples of legitimate objectives); and being based on relevant international standards where such standards exist or their completion is imminent unless they would be ineffective or inappropriate.

(c) **GATT 1994**

GATT 1994 contains the general obligations of WTO Members relating to trade in goods. These include, in Article III (National Treatment), obligations not to discriminate against imports once they have entered the territory of the importing Member “so as to afford protection to domestic production” (Article III:1). Article III:4 applies this principle to “all laws, regulations and requirements affecting [the] internal sale, offering for sale, purchase, transportation, distribution or use”, requiring that such measures must accord imports treatment “no less favourable than that accorded to like products of national origin”. The Appellate Body has clarified that the intent is “to provide equality of competitive conditions for imported products in relation to domestic products.”

WTO Members are also proscribed, in Article XI (General Elimination of Quantitative Restrictions), from instituting or maintaining quantitative restrictions or prohibitions; except in a small number of specific and limited circumstances this will not be relevant to domestic regulation of GM foods.

Article XX (General Exceptions) provides a limited and conditional exceptions for measures otherwise found inconsistent with general GATT obligations. These include measures taken to protect life or health, to protect the environment or to secure the compliance of laws not otherwise inconsistent with GATT. Such measures must not be “applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade”. Article XX therefore represents a balance of rights and obligations between the rights of WTO Members to implement measures to pursue objectives “recognized as important and legitimate in character”, and the rights of other WTO Members to benefit from compliance with WTO obligations.

As the general agreement covering trade in goods, GATT 1994 applies to all measures affecting trade in goods unless they are specifically permitted or proscribed under another of the Annex 1A agreements. Thus, even if a measure falls within the ambit of the TBT or SPS Agreements, it will be subject to the disciplines of GATT 1994. This is consistent with the principle of separate and concurrent application of WTO obligations.

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46 For example, GATT Article XI prohibits quantitative restrictions except in a small number of specific and limited circumstances. However, the Agreement on Textiles and Clothing specifically permits quantitative restrictions for the duration of that Agreement. Differences of this kind are covered by the *General interpretative note to Annex 1A* which provides that, in the event of a conflict between a provision of GATT 1994 and another Annex 1A agreement, the latter shall prevail.
However, as noted above, measures that are consistent with the SPS Agreement are presumed to be in accordance with the obligations in GATT 1994, while there is no such presumption in the TBT Agreement. Thus, while it is unlikely that consistency with GATT 1994 will be at issue for SPS measures, it is possible for TBT measures to be tested against GATT disciplines as well: this was what the Appellate Body did in EC – Asbestos when it determined the French regulation at issue to be a TBT measure but conducted its analysis under GATT Articles III and XX.

In addition, GATT 1994 – as the overarching or “default” agreement covering trade in goods – will apply to those elements of a domestic regulation that do not fall within the scope of SPS and TBT Agreements. This is consistent with the finding of the panel in EC – Asbestos that a single domestic regulation can have components that are subject to different WTO obligations because the non-applicability of certain WTO Agreements results in the applicability of the GATT 1994 as the default agreement applying to trade in goods.

2. Labelling

Given the relationship and application of the SPS and TBT Agreements and GATT 1994, there is potential for confusion where governments attach multiple policy objectives to GM labelling requirements, or where governments disagree on the legitimacy of GM labelling requirements as a means of achieving certain policy objectives.

EU Regulation 1830/2003, for example, declares a purpose of labelling as being “to ensure that consumers are fully and reliably informed about GMOs and the products, foods and feed produced therefrom, so as to allow them to make an informed choice of product.” However, in public statements, the EU has described the policy purpose of its overall GM regulatory regime as including the protection of human health and the environment, and has notified Regulation 1830/2003 under both the SPS and TBT Agreements. In response to questions from WTO Members, the European Commission has stated that the regulation pursued “multiple objectives” and that “only when this framework legislation is applied to concrete cases and to specific products will it be possible to state with precision which of the [SPS and TBT Agreements] will be applicable.”

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47 This would be the case only if the presumption of consistency were to be rebuttable. See note 37.
48 Both the panel and Appellate Body followed a similar path of analysis in United States – Standards for Reformulated and Conventional Gasoline WT/DS2/R and WT/DS2/AB/R (adopted 20 May 1996), the very first dispute considered by the AB, and decided for reasons of judicial economy (among others) not to examine claims of violation of the TBT Agreement. This was consistent with the approach of the claimants who argued to the panel that their claims of violation of the TBT Agreement should be examined in the event that the US measures at issue were found not to be violations of GATT Article III or to be justified under GATT Article XX. Like other commentators, we find this decision puzzling given that the obligations under the TBT Agreement are different from those under GATT 1994. The Appellate Body justified its decision by lack of any previous interpretation of the TBT Agreement or the Tokyo Round Code upon which it was based and the potential insufficiency of facts that would enable it to complete the analysis (the panel having erroneously determined that the measure at issue was not a technical regulation). Appellate Body Report, EC – Asbestos, paras 78-83.
49 Report of the Panel, European Communities – Measures Affecting Asbestos and Asbestos-Containing Products WT/DS135/R, paras 8.18-8.73
50 Recital 11
52 G/SPS/N/EEC/150 and G/TBT/N/EEC/7. This becomes relevant given the TBT explicitly excludes from its scope measures falling under the scope of the SPS Agreement.
53 Response From the European Commission to Comments Submitted by WTO Members under Either or Both G/TBT/N/EEC/7 and G/SPS/N/EEC/150 (G/SPS/GEN/338 and G/TBT/W/180) 26 July, 2002, p. 4
Other WTO Members have sought to distinguish the different policy objectives of GM regimes that include labelling. Australia and New Zealand’s Standard 1.5.2 comprises both pre-market release safety assessment and mandatory labelling of GM foods and ingredients. The purpose of general GM labelling is however not to serve as a health warning but to provide consumers with information. Accordingly, both Australia and New Zealand notified the pre-market release safety requirements as an SPS measure, and the labelling requirements as a TBT measure. The Standard does however recognise that specific health-related GM labelling may be justified in certain circumstances, such for allergens and nutrition.

(a) Labelling for food safety

Mandatory GM labelling requirements may fall within the scope of the SPS Agreement where they are applied to protect human health from food-borne risks. Annex A of the SPS Agreement includes in the list of SPS measures “packaging and labelling requirements directly related to food safety” (emphasis added). Specific GM labelling requirements directed at food safety would fall within the scope of the SPS Agreement. The Australia / New Zealand Standard, for example, provides for additional labelling or information requirements where GM food contains new allergens.\(^{55}\)

It is less clear however whether a general labelling requirement could, in the absence of an identified food-safety risk related to GM foods, constitute an SPS measure. Both the EU and Australia/New Zealand GM regulatory regimes, for example, require stringent pre-market release safety assessment of GM foods. Only GM foods that consist of or are made from GMOs that have been assessed as posing no greater risks to human health than their non-GM counterparts can be sold or used in the market place. It would therefore seem unlikely that a general labelling requirement – with only an indirect relationship to food safety – would fall within the definition of an SPS measure.

While Annex A includes in the list of SPS measures “packaging and labelling requirements directly related to food safety”, this list is not exhaustive and SPS measures are defined as including “all relevant laws, decrees, regulations requirements and procedures.” Thus, it may be possible for labelling for environmental purposes to constitute an SPS measure. An example might be labelling of GM seeds or GMOs that are capable of cultivation to prevent environmental damage that might occur if their genetic modifications were to be transferred to wild species. The SPS Agreement defines “pests” as including weeds, and “plant” to include forests and wild flora. It remains to be tested whether these terms are broad enough to encompass concerns that GMOs could become pests or weeds if released into the environment, could result in genetic “contamination” of other plants, or could cause a loss of “natural” biodiversity.\(^{56}\)

GM labelling requirements applied for nutritional purposes would normally not fall within the scope of the SPS Agreement. The fact that a GM food lacks certain nutrients or vitamins compared to its non-GM counterpart will not normally constitute to a toxin or contaminant in food within the meaning of Annex A of the SPS Agreement. This is notwithstanding the

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55 Australia / New Zealand Food Standards Code, Standard 1.5.2, clause 7.
56 One concern is that the unintended transfer of inserted Bt genes from a GMO could result in herbicide-resistant weeds. Other risks that the regime may be seeking to address are changes in genetic relationships and indirect effects. Scientists Working Group on Biosafety, *Manual for Assessing Ecological and Human Health Effects of Genetically Engineered Organisms* (1998) cited in Howse and Mavroidis (note 35), pp. 351-352
potential long-term impact on human health. Such requirements would however likely fall within the scope of the TBT Agreement.

(b) Labelling for other purposes

GM labelling requirements directed at providing information to allow consumers to make choices; preventing misleading or deceptive practices; or for ethical, moral or religious concerns; would normally fall outside the scope of the SPS Agreement. Such measures could fall under the disciplines of the TBT Agreement and GATT 1994.

Both EU Regulation 1830/2003 and the Australia / New Zealand Standard recognise that labelling may be provided to take into account moral, religious and ethical considerations. Regulation 1830/2003 requires GM labelling to inform of “any characteristic or property which gives rise to ethical or religious concerns”. The European Commission has clarified this would apply to a situation where, for example, a gene from a bovine animal or from a pig was transferred into another animal species and the concerns that this might raise for the followers of some religions. The Australia / New Zealand Standard provides for additional labelling or information requirements for GM food where “the genetic modification raises significant ethical, cultural and religious concerns regarding the origin of the genetic material used in the genetic modification”.

The TBT Agreement’s provisions on labelling remain the subject of disagreement among both Members and commentators, primarily because of the linkage to the broader debates on eco-labelling and other social labels, and on process and production methods (PPMs). This reflects the concerns of developing countries about the potential impact of labelling on demand for their exports in developed countries, and concerns of many agri-food exporters that existing measures that restrict market access for agri-food products, which they are seeking to reduce or eliminate in the Doha negotiations, may be replaced by PPM-related measures. Consequently, despite proposals for clarification, no agreement has been reached, despite attempts to revisit the issue in the previous Triennial Review and in the Triennial Review currently underway.

57 Article 14.2
58 Response From the European Commission (note 54), p. 27.
59 Australia / New Zealand Food Standards Code, Standard 1.5.2, clause 7(e).
60 There is a more detailed discussion of the differing academic interpretations in Jan McDonald, “Domestic Regulation, Harmonization, and Technical Barriers to Trade” Paper accompanying this one.
64 See, for example, Canada’s proposal (report of the discussion at the March 1996 meeting of the TBT Committee in G/TBT/M/4, para 82) and Switzerland’s proposal (Marking and labelling requirements, Submission from Switzerland, G/TBT/W/162 and G/CTE/W/192, 19 June 2001).
65 Second Triennial Review of the Operations and Implementation of the Agreement on Technical Barriers to Trade, G/TBT/9, 13 November 2000, para. 48.
Notwithstanding this failure of members to agree and the apparent understanding during the negotiation of the TBT Agreement, a plain-text reading of the definition in Annex 1 highlights the difference between the references to PPMs for a technical regulation in general (“. . . their related processes and production methods”) and for labelling specifically (“. . . terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method”). The absence of “related” in the labelling-specific reference to PPMs supports the interpretation that labelling can refer to all PPMs, whether product-related or not. It is likely that genetic modification would be considered to be a PPM. Thus, the definition of technical regulations would encompass, in addition to labelling where the genetic modification is detectable in the GM food, labelling of products such as highly refined oils and sugars where there is no detectable, genetically modified DNA or protein.

Consequently, it is probable that all GM labelling regulations that are not SPS measures will fall within the scope of the TBT Agreement. What will be at issue therefore is whether such labelling regulations are consistent with the obligations therein. Consistency with the non-discrimination obligations in Article 2.1 will turn on whether GM food are like products to their non-GM counterparts. This is discussed in Section III.B of the paper below.

Article 2.2 sets out an indicative list of legitimate objectives, including: the prevention of deceptive practices; and protection of health or safety, animal or plant life or health, or the environment. WTO panels might also be expected to accord governments considerable deference on what constitutes a legitimate objective. There is little doubt for example that informing consumers to allow them to make choices on GM foods would constitute a legitimate objective within the meaning of Article 2.2.

Even if labelling regimes are consistent with the TBT Agreement, they may also be subject to the disciplines of GATT 1994, in particular Article III:4. If the effect of the labelling regulation were to prohibit the entry of imported GM food then Article XI may apply (as it proscribes prohibitions made effective through any measure).

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66 The negotiating history of the TBT Agreement prepared by the WTO Secretariat supports the view that Members envisaged that only labelling schemes based on product-related (i.e. incorporated) PPMs would be encompassed by the definition of a technical regulation. WTO Secretariat Note for the Committee on Trade and Environment, Negotiating history of the coverage of the Agreement on Technical Barriers to Trade with regard to labelling requirements, voluntary standards, and processes and production methods unrelated to product characteristics, WT/CTE/W/10 and G/TBT/W/11, 29 August 1995.

67 See Marceau and Trachtman (note 37), pp. 861-862 and 876, and McDonald (note 60), section 3.1.4.

68 This would be consistent with the practice of WTO Members. One purpose of the labelling regulation at issue in the EC – Sardines dispute was “to provide appropriate information to consumers” (Report of the Panel, European Communities – Trade Description of Sardines WT/DS231/R, para. 4.60). This was not challenged by the complainant or third parties (ibid., para. 4.66 and paras 5.1-5.83). Similarly, WTO Members do not appear to have challenged this purpose for technical regulations in the TBT Committee’s consideration of notifications.

69 It would seem unlikely that Article IX, which deals with marks of origin, could have application but see Rex Zedalis, “Labeling of Genetically Modified Foods: The Limits of GATT Rules”, Journal of World Trade 35:2 (2001), pp. 301-347 (who acknowledges that his argument may be tenuous).

70 However, the Note Ad Article III provides that Article III measures imposed at the border are to be subject to the provisions of Article III and a number of WTO and GATT panels (but not the Appellate Body) have found
between Articles III and XI remains unclear, especially when PPMs are involved. In the limited jurisprudence to date on labelling issues, it has been Article III:4 that has been identified as the relevant provision of GATT 1994.\footnote{71}

A labelling regime that is consistent with Article 2.2 of the TBT Agreement is likely to also be consistent with GATT 1994 given the application of Article XX (General Exceptions). A requirement that was found to meet the legitimate objective test is also likely to fall within one of the exceptions of Article XX of GATT 1994. However, it is not clear whether the obligation in Article 2.2 of the TBT Agreement to be “not more trade restrictive than necessary” encompasses the additional and fundamental disciplines of the chapeau of Article XX that measures not be applied in a manner which would constitute “a means of arbitrary or unjustifiable discrimination” or “a disguised restriction on international trade”.

3. Product tracing

Uncertainty also surrounds the question of which Agreement applies to product-tracing requirements, particularly when there are multiple purposes for these requirements. Product tracing may be used to enable products to be recalled if there is a food-safety crisis or other serious risks to human health. Food recall systems can be characterised as measures applied to protect people from food-borne risks and could fall within the definition of an SPS measure under the SPS Agreement.\footnote{72}

On the other hand, product tracing has also been applied for non-food safety purposes such as for “organic” foods or “free range eggs”. In both instances, product tracing may be implemented either voluntarily or as a result of mandatory requirements. There is potential scope for confusion in relation to GM foods where the declared regulatory purpose of product tracing is ambiguous or where product tracing is stated to pursue multiple objectives.

EU Regulation 1830/2003 provides for mandatory traceability for GM food. Operators are required to record and transmit information on a product in terms of the individual GMOs it contains or whether it is produced from GMOs. This is through recording the unique identifier for each GMO in products in all documentation. The requirements apply throughout the production chain – from the point of production, through to processing, wholesale and retail distribution. Information must be retained for a period of no less than five years. A purpose of traceability is to “facilitate both the withdrawal of products where unforeseen adverse effects on human health, animal health or the environment, including ecosystems, are established, and the targeting of monitoring to examine potential effects on, in particular, the environment”.\footnote{73} Additional purposes include facilitating accurate

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\footnote{71}{See Peru’s arguments in \textit{EC – Sardines}. However, the Panel did not examine these arguments on the grounds of judicial economy, and they were not at issue in the appeal.}

\footnote{72}{A food recall system which attaches requirements to products \textit{ex ante} an identified risk to health is not necessarily inconsistent with the requirement under Article 5.1 of the SPS Agreement to base measures on a risk assessment. Such a system attaches requirements to food products to manage potential risks that might in the future arise in relation to some products. Annex A of the SPS Agreement defines a food safety risk assessment in terms of an evaluation of potential risks to health, as opposed to a likelihood or probability of risk. By contrast, Annex A defines a pest or disease risk assessment in terms of an evaluation of the likelihood of entry, establishment or spread of the pest or disease according to the SPS measures that might be applied, and the associated potential biological and economic consequences.}

\footnote{73}{EC Regulation 1830/2003, third recital.}
labelling. Importantly, these traceability requirements are additional to the general product recall requirements for all foods.

No similar provisions exist in a range of other countries. In a number of countries, voluntary product-tracing is required to substantiate claims that products are GM-free. The Australia / New Zealand standard does not expressly provide for mandatory product-tracing requirements for GM food. However, food businesses should take all reasonable steps to determine if their food or ingredients are produced using gene technology; find out if the food or ingredient produced using gene technology is approved; and determine what the labelling requirements are for the GM food or ingredient.

Both Australia and New Zealand also impose product tracing requirements as part of a general food labelling regime. Australia / New Zealand Standard 1.2.2 (Food Identification Requirements) requires food for retail sale to be labelled with the name of the food, lot identification (such as a batch or serial number) and the name and address of the supplier. Chapter 3 of the Food Standards Code – which only applies to Australia – also requires manufacturers, wholesalers, distributors and importers of food to have in place a written recall plan to enable the recall of unsafe food from the market place.

The issue of product tracing or traceability nevertheless remains contentious. There is a lack of international consensus as to its meaning or legitimate applications, with a divergence of views among governments in the Codex Alimentarius Commission. Some countries view product tracing requirements as having the potential, if misused by governments, to impose significant costs on producers with little scientific justification. On the other hand, other countries are pushing for ingredient-by-ingredient tracing and cite the mad cow and dioxin crises in Europe as justifying stringent product tracing throughout the product chain.

Efforts by the EU to clarify its GM traceability requirements are potentially confusing. The European Commission has stated that:

[T]raceability is not a ‘safety measure’ *per se*, but when appropriately implemented can be used to ‘facilitate’ the application of other measures, such as product withdrawals and monitoring, as a means to ensure safety. Traceability is considered to be a useful risk management tool both by companies and by control authorities.

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74 *ibid.*, fourth recital  
75 See Foster *et al* (note 19), DFAT (note 19) and Baumüller (note 19).  
76 Food Standards Australia New Zealand (note 23).  
77 The Food Industry Recall Protocol (September 2002) also sets out general responsibilities for food businesses in relation to food recall, including: to maintain records in a form that can be quickly retrieved and establish procedures that will facilitate a recall; to have a written recall plan; to initiate the action for implementing a recall; and to contact overseas suppliers/manufacturers when initiating a recall. The Protocol also strongly recommends that businesses have a system in place that is able to produce up-to-date lists of distributors and retailers when needed. There are also commercial advantages for businesses implementing voluntary systems, including providing added confidence to consumers and minimising commercial impacts in the event of a food safety failure.  
78 *Response From the European Commission* (note 54), p. 9
On the other hand, the European Commission has advised that “traceability systems can have uses other than for the purpose of safety and in certain cases there is no scientific basis whatsoever for such requirements.”

Given the level of international and national uncertainty on the policy purpose of GM product-tracing requirements, it is unclear whether such requirements constitute SPS measures under the SPS Agreement. Statements of regulatory purpose by the WTO Member implementing such requirements will be a relevant factor, as will the structure and application of the measure.

If GM product-tracing regulations were found to constitute SPS measures then they would need to comply with the substantive obligations of the SPS Agreement. This may be problematic where regulations impose additional obligations on GM foods to those imposed on other foods.

Many countries already maintain effective food-recall systems that incorporate product-tracing elements that allow food to be taken off the market in situations where a risk to human health has been identified. Food recalls are effected by batch numbers and experience has shown no additional need for strict ingredient-by-ingredient tracing. Given the availability of reasonably alternative measures, it remains to be established whether strict GMO-by-GMO tracing would be necessary to protect life or health in the event of a food recall. The fact that few, if any, countries require ingredient-by-ingredient tracing requirements for non-GM food also suggests that such mechanisms are not necessary.

The SPS-consistency of a product-tracing regime may also be relevant to the consistency of related labelling requirements: to the extent that labelling is necessary to enforce product-tracing requirements (and thus, potentially, to enable product recalls to occur), it may be consistent with the SPS Agreement.

Where GM product tracing requirements fall outside the scope of the SPS Agreement, they may still be subject to the disciplines of the TBT Agreement and GATT 1994. Product tracing requirements could for example be characterised as measures that implement, or are ancillary to, GM labelling requirements that are not SPS measures. Product tracing requirements may also go towards preventing misleading and deceptive practices or consumer fraud (consumer protection) by allowing the verification of labelling claims.

B. “Like Products”

Whether GM foods are “like” their non-GM counterparts will be relevant to an evaluation of GM labelling and product tracing requirements under the TBT Agreement and GATT 1994. Article III:4 of GATT 1994 requires that imported products be accorded no less favourable treatment than “like products of national origin” in respect of laws, regulations and requirements affecting internal sale, offering for sale, purchase, transportation, distribution or use. Article 2.1 of the TBT Agreement imposes similar national treatment obligations. This provides in respect of technical regulations that products imported from the territory of any WTO Member shall be accorded no less favourable treatment than that accorded to “like products of national origin”.

79 ibid.
While the issue of what are like products has been the subject of extensive consideration in WTO and GATT disputes, it has not yet been considered in the context of the TBT Agreement. Consequently, the following discussion looks first at the jurisprudence relating to GATT Article III before considering how the term may be interpreted in Article 2.2 of the TBT Agreement.

1. **GATT 1994**

The test for “like product” under Article III of GATT 1994 is well-established in WTO/GATT jurisprudence. The Appellate Body in *Japan – Alcoholic Beverages* recalled the long-standing approach of the GATT Working Party on *Border Tax Adjustments* that the term in Article III:2 should be examined on a case-by-case basis. Relevant factors that could be considered include: “the product’s end-uses in a given market; consumers’ tastes and habits, which change from country to country; the product’s properties, nature and quality”.

The tariff classification of products under the harmonised system may also be relevant to an examination of “likeness”.

In *EC – Asbestos*, the Appellate Body stressed that the criteria articulated in *Border Tax Adjustments* are neither treaty-mandated nor exhaustive, although they are a useful tool.

The Appellate Body also identified important contextual differences between like product in Article III:2, which deals with internal taxation, and Article III:4. Likeness in Article III:4 is to be interpreted more broadly and is “fundamentally, a determination about the nature and extent of a competitive relationship between and among [imported and domestic] products.”

**a) Physical properties, nature and qualities**

Whether GM foods are “like” their non-GM counterparts in terms of physical properties, nature and qualities can only be assessed on a product-by-product basis. Factors that may be relevant include the degree of genetic modification, and the extent to which this modification is reflected in the physical properties, nature and qualities of the final product. However, the fact that a product has one (or, with some GMOs, more than one) gene that has been inserted through recombinant DNA technology rather than some other process of genetic modification is unlikely – by itself – to constitute a sufficient difference in physical properties, nature or qualities.

Even where genetic modification translated into differences in the physical properties, nature or qualities of the end product, products might still be like. Different varieties of fruits (e.g. apples), vegetables (e.g. potatoes) and other agricultural products (e.g. wheat) have different genetic make-up and differences in appearance and taste.

In *Spain – Unroasted Coffee*, different varieties of coffee were found to be like. The GATT Panel “did not consider that [organoleptic] differences were sufficient reason to allow for a different tariff treatment”. It was moreover “not unusual in the case of agricultural products that the taste and aroma of the end-product would differ because of one or several of . . .

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82 Para. 102
83 *EC – Asbestos*, paras 94-96
84 ibid., para. 99
geographical, cultivation methods, the processing of the beans and the genetic factor.” The Appellate Body in *EC – Asbestos* has also stated that even if the properties of products are physically quite different, it might still be demonstrated that “despite the pronounced physical differences, there is a competitive relationship between the products such that all of the evidence, taken together, demonstrates that the products are ‘like’ under Article III:4 of GATT 1994.”

The issue becomes more complex when genes are transferred from one species to another. It can be argued that such transgenic GM foods – for example, a potato with a fish gene – are not only less like their non-GM counterparts than other GM foods where the modification involves genetic material from the same species, but are sufficiently different not to be like. Transgenic GM foods could raise ethical, religious and cultural issues (e.g. the use of bovine or pig genes). They could also give rise to allergens or health risks where a person allergic for example to a gene in fish or nuts, unknowingly consumes a transgenic potato with the same gene.

The degree of processing will be a relevant consideration. Even if the GMO from which a processed product is derived is physically unlike its non-GM counterpart, the final processed product may be like in terms of its physical properties. Highly refined oils and sugars for example contain no protein. Canola oil derived from GM canola would not normally be physically distinguishable from oils derived from non-GM canola. Consequently, labelling regimes such as that in Australia and New Zealand do not require such products to be labelled.

Another consideration may be whether particular GM foods are considered to be substantially equivalent to their non-GM counterparts. While this is the underlying assumption in the United States and Canada, both for approval for sale and labelling, it is not the case in the EU or in Australia and New Zealand. However, the EU’s Novel Food Regulation for example provides for a simplified procedure for substantially equivalent foods produced from GMOs, where the product no longer contains any GM material. Products derived from four types of canola and two types of corn, as well as cottonseed oil from two types of GM cottonseed have been approved under this procedure. Notwithstanding this approval, the EU’s GM labelling and traceability requirements apply to food produced from GMOs, even if no genetically modified DNA or protein is detectable in the product.

Finally, the health risks associated with a product will be relevant to the issue of “likeness” and physical properties. Unlike asbestos however – for which the health risks have long

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85 *Spain – Tariff Treatment of Unroasted Coffee* (1981, BISD 28S/112), para. 4.6
86 para. 118, emphasis in original.
87 See text at notes 57-59.
88 Adler (note 7), pp. 177-182
89 The EU explicitly does not consider GM foods, except those approved under the relevant provisions of the Novel Foods Directive, as substantially equivalent. While Australia and New Zealand have not been as explicit, the fact that they require pre-market release safety assessments and labelling for GM foods suggests they do not consider them to be substantially equivalent to their non-GM counterparts.
90 European Commission (note 8), p. 4. On equivalence more broadly, the EU and the USA have expressed contrasting views about the relationship between “substantial equivalence” and the obligation in SPS Article 4.1 to accept equivalent measures. Sheldon and Josling (note 29), pp. 15-16
91 EU Regulation 1830/2003.
92 Appellate Body Report, *EC – Asbestos*, paras 113-147. One member of the Appellate Body went further and argued that the health risks associated with asbestos should justify a finding that the products in question not only were not alike, they were, in fact, unlike. *Ibid.*, paras 149-154.
been established scientifically and subject to international standards – there have been no studies identifying risks to human health from GMOs that have been approved for human consumption. Some GM foods may however give rise to specific risks, such as in relation to allergens or nutrition.

(b) **Tariff classification and end uses**

The tariff classification of products under the Harmonised System (HS) can be pertinent to an assessment of “like product”. The Appellate Body in *Japan – Alcoholic Beverages II* considered that tariff classification, if sufficiently detailed, can be a helpful sign of product similarity. Customs classification under the HS system primarily turns on the physical characteristics or properties of products. GM and non-GM food currently share the same tariff classification under the Harmonized System.

Whether GM food shares the same end uses as non-GM food may depend on the conditions under which GMOs have been approved, as well as consumer preferences. Government regulatory intervention for health or safety may itself affect the end uses of products. Some GM varieties have only been approved for animal feed, for example Starlink corn, and are not intended for human consumption. In addition, many varieties of plants have been modified through selective breeding or other forms of genetic modification to be better suited to particular end uses (e.g. durum wheat for making pasta). Differences in end uses may not therefore be a consequence of the method of genetic modification.

(c) **Consumer perceptions and preferences**

The Appellate Body in *EC – Asbestos* clarified that a determination of likeness under Article III:4 is “fundamentally, a determination about the nature and extent of a competitive relationship between and among products” while recognising that there is “a spectrum of degrees” of competitiveness or substitutability of products in the marketplace. Consumer perceptions or preferences are relevant given they relate to the competitive relationship between products. Consumer perceptions may also “similarly influence – modify or even render obsolete – traditional uses of the products.”

Factors relevant to GM food might include: scientific assessments suggesting that consumer concerns about possible health, safety or environmental risks are unfounded; the willingness of consumers to use GM vaccines, pharmaceuticals and other therapeutic goods; the widespread consumption by millions of consumers in other markets, mainly North America, of GM foods for more than seven years without any reports of fatalities or illness attributable

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93 See note 14. Some GMOs, most famously Starlink corn, have only been approved for animal feed.
94 p. 27.
95 This distinction is not unique to GMOs: some varieties of rapeseed, the naturally occurring plant from which canola was bred, have high levels of erucic acid which makes their oil toxic for humans but ideal for industrial use. Similarly, some legumes such as certain varieties of vetch are poisonous for humans but are used as stockfeed.
96 Para. 102.
97 The European Commission has acknowledged that: “GM plants and derived products developed and marketed in the European Community, following usual risk assessment procedures, have not shown any new risks to human health or the environment, beyond the usual uncertainties of conventional plant breeding, or risks that are likely to put in danger the chosen level of health or environmental protection in the European Community.” *Response From the European Commission* (note 54), p. 5.
to such consumption; and consumption by European consumers of food products processed using GMOs.98

Consumer differentiation might also be on the basis of the perceived environmental, safety or quality properties of goods. Such properties may or may not be expressed in the physical characteristics of the product but may relate to its processing or production methods (PPMs). Examples of consumer preferences include “organic” fruits and vegetables, “non-battery hen” eggs, and “dolphin-free” tuna. Public awareness of the link between dolphins and tuna is for example high in the United States and US tuna canneries have insisted on more expensive dolphin-friendly methods of production so they could label product as such.99

Notwithstanding the Appellate Body’s findings in the United States – Shrimp dispute, the use of trade measures applied on the basis of processes and production methods (PPMs) remains contentious.100

It has been suggested that European consumers are distinct from their North American counterparts and perceive GM and non-GM food as different. A number of supermarket chains, such as Tesco and Sainsburys in the UK, have required suppliers of meat to certify that the animals were not fed with GM feed.101 The experience that consumer confidence in GM food declines when it is labelled as such also suggests consumer differentiation between GM and non-GM food. On the other hand, a number of WTO and GATT panel reports have rejected claims on the basis of cultural considerations. In Japan – Alcoholic Beverages I, the GATT Panel focused on “objective product differences” to determine likeness, rejecting Japanese arguments that local consumer traditions made shochu not a like product of other alcoholic beverages.102

The degree to which European consumer preferences have been influenced by regulatory intervention is however a pertinent issue. In EC – Sardines, an EU regulation that restricted the use of the labelling and marketing term “sardines” to only a species of fish found in European waters had created consumer expectations that were subsequently used to justify maintaining the regulation. The Panel ruled that accepting such a situation “would be endorsing the permissibility of “self-justifying” regulatory trade barriers”.103 This could have implications for products such as highly refined oils and sugars that are required to be labelled under EU Regulation 1830/2003, but which were not previously labelled because they contain no genetically modified protein or DNA.

Consumer preferences are however not static and consumer trends can change and evolve over time. In such circumstances, a complaining party may submit evidence of latent or suppressed consumer demand in that market, or evidence of substitutability from relevant

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98 These include baked goods that use amylase, cheese made using GM chymosin (a starter of the coagulation process) and a large number of processed foods that use lecithin, a soy-derived emulsifier.
100 Charnovitz argues that WTO rules do not forbid governments from maintaining environmental measures linked to the processes and production methods used in exporting countries and that the myth that PPMs violate WTO rules is one reason why many environmentalists are wary of the WTO: Charnovitz (note 63), p. 59.
101 Personal interview with Dr Geoff Spriegel, Director, Quality and Innovation Group, J Sainsbury plc, 16 March 2001
103 Para. 6.11
third markets. Evidence on the competitive relationships of GM and non-GM food in other markets such as the United States and Canada may therefore be relevant.

2. **TBT**

In contrast to the extensive jurisprudence on the meaning of like products in GATT 1994 (and GATT 1947), the issue of like products has not yet been tested under the TBT Agreement. The issue was not considered in *EC – Sardines* for reasons of judicial economy. In *EC – Asbestos*, the measures at issue were found by the Appellate Body to be TBT measures. The Appellate Body however held that it lacked, in the particular case, “an adequate basis” to examine any claims of inconsistency with the TBT Agreement.

While the relationship between Article III:4 of GATT 1994 and the TBT Agreement is a close one, it does not follow that the interpretation of the term “like products” will be (or, indeed, should be) the same. Two important and related factors that may support a narrower interpretation of the term are: the absence of any equivalent in the TBT Agreement of GATT Article XX and the likely non-availability of an Article XX defence to a violation of the TBT Agreement; and the recognition in the TBT Agreement that governments may choose to impose technical regulations for a variety of legitimate objectives.

In relation the first issue, Article XX operates as a conditional exception for measures otherwise found to infringe a substantive obligation in GATT 1994, such as Article III:4. Article 2.2 of the TBT Agreement on the other hand operates as a substantive obligation in its own right. It does not operate as a defence to, for example, a violation of Article 2.1. On the second issue, the scope of “legitimate objectives” that might be pursued is broader under the TBT Agreement than Article XX of GATT 1994. Article XX provides an exhaustive list of objectives that might be pursued by governments in contrast to the illustrative list in Article 2.2 of the TBT Agreement. This paper has also suggested that WTO panels can be expected to accord governments wide discretion on what constitutes a legitimate objective given this very much goes to the question of sovereignty. All this suggests that “like products” could be interpreted more narrowly in Article 2.1 of the TBT Agreement than under Article III:4 of GATT 1994.

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105 The arguments of the parties on this issue are summarised in paras 4.122–4.133 of the Panel report.
106 Para. 83
107 In *EC – Asbestos*, the Appellate Body felt it necessary to “note . . . and . . . emphasize” that not “all internal measures covered by Article III:4 . . . are, necessarily, ‘technical regulations’ . . .” (para. 79, emphasis in original)
108 An alternative view is that, absent any provision setting out the relationship between the TBT Agreement and GATT 1994, GATT Article XX may be invoked to defend a violation of the TBT Agreement. Arguably, the AB’s findings in *EC – Asbestos* (that the measure was a TBT one but failing to complete the analysis of claims of violation of the TBT Agreement and then finding that the measure, while not a violation of Article III:4, was nonetheless still defensible under Article XX(b) ) could be interpreted as supporting the view that Article XX can justify a violation of the TBT Agreement. However, as Marceau and Trachtman (note 37) argue persuasively (p. 823), the legitimate objectives set out in Article 2.2 (and the others allowed given that it is an illustrative list), together with the references in the preamble to protection of essential security interests and other purposes, encompass the exceptions listed in GATT Articles XX and XXI. They also note that Article XX belongs to a different agreement.
109 McDonald (note 60), Section 3.2.2
110 Marceau and Trachtman (note 37) suggest (p. 874) that an interpretation that products could be regarded as unlike based on the characteristic that underpins the legitimate regulation would require “a rather heroic approach to interpretation”. They prefer an emphasis on the obligation that imports not be accorded less favourable treatment than their like domestic products (p. 875). We discuss this obligation below.
There are, however, arguments supporting an alternative approach of interpreting likeness in the TBT Agreement in a similar manner to the interpretation under GATT Article III:4. These include the Appellate Body’s argument in overturning the Panel’s finding in EC – Asbestos that health factors should be considered in relation to an Article XX(b) defence and not in determining likeness under Article III:4. The Appellate Body reasoned that the scope and meaning of Article III:4 “should not be broadened or restricted beyond what is required by the normal customary international law rules off treaty interpretation, simply because Article XX(b) exists and may be available to justify measures inconsistent with Article III:4.”

3. Conclusion

Whether GM foods and their non-GM counterparts are “like” will depend on the particular product at issue and the characteristics of the particular market. Given that different products give rise to a multiplicity of different end-uses, physical properties and different consumer preferences, generalised conclusions on GMOs – and GM labelling and product tracing requirements – are difficult.

The effect of regulatory intervention in determining appropriate end-uses and potentially creating consumer preferences only adds to the complexity of the analysis. Consumer preferences in Europe have for example been influenced – if not created – by EU regulatory intervention over a number of years, in particular the underlying premise that GM foods are different from their non-GM counterparts.

A panel examining the issue will need to balance a multiplicity of potentially competing factors relevant to the factual matrix of the particular dispute. All of the evidence must be weighed, “along with any other relevant evidence, in making an overall determination of whether the products at issue could be characterized as ‘like’.” A panel’s approach to the issue of “like product” will likely be coloured by its perceptions of the reasonableness of the regulatory approach of the WTO Member being challenged.

It is moreover “a discretionary decision that must be made in considering the various characteristics of products in individual cases”. The Appellate Body has noted that “WTO rules are not so rigid or so inflexible as not to leave room for reasoned judgements in confronting the endless and ever-changing ebb and flow of real facts in real cases in the real world”. There is therefore some merit in the EU’s argument that a WTO assessment of its GM labelling and traceability requirements can only be undertaken on a case-by-case basis with respect to an identified product.

C. Competitive Opportunities

An important element of the consideration of likeness under both Article 2.1 of the TBT Agreement and Article III:4 of GATT 1994 is the requirement that imported products be accorded treatment “no less favourable” than like domestic products in the application of internal laws or technical regulations. The Appellate Body has interpreted the term “no less
favourable” treatment under Article III:4 of GATT 1994 as relating to the “conditions of competition” affecting imported and domestic products.\textsuperscript{115}

Article 2.1 of the TBT Agreement has not, to date, been examined in a WTO dispute. A panel is however likely to adopt a similar approach to Article III:4 of GATT 1994 with respect to the meaning of “no less favourable” treatment. In both its findings in \textit{Korea – Beef}\textsuperscript{116} and an observation in \textit{EC – Asbestos}\textsuperscript{117} the Appellate Body interpretation of this term suggests that, in the context of Article 2.1 of the TBT Agreement and the absence of any equivalent of GATT Article XX, the legitimate objectives set out in Article 2.2 could be taken into account.\textsuperscript{118}

A fundamental criticism by producers and traders of GM foods of mandatory labelling and product tracing requirements is their commercial impact on the competitiveness of GM foods in the marketplace. Mandatory GM labelling can affect consumer demand and marketability of GM foods. When labelling and product tracing requirements are more onerous than those for non-GM foods, they also result in significant implementation and compliance costs on producers, traders and users of GM foods, discouraging their use.

\textbf{1. Labelling and Consumer Demand}

Mandatory labelling may directly affect the competitive opportunities of GM foods by encouraging consumer perceptions of differences between GM and non-GM foods, or by reinforcing adverse consumer perceptions about the quality or safety of GM foods.

The experience of some food processors has been that in many markets, consumer confidence in and demand for products declines when they are labelled as containing or otherwise linked with GMOs.\textsuperscript{119} Consequently, food companies in a number of developed country markets, particularly in Western Europe, have chosen to re-source their ingredients or reformulate their products so as to avoid the use of GM ingredients. This has been the policy adopted by almost all food processors selling into, for example, the Australian market.\textsuperscript{120}

Closely related to this has been the actions of supermarket chains which have seen commercial advantage in promoting themselves as GM free and have consequently been unwilling to stock products that are labelled as consisting of or being made from GMOs. This was a major factor influencing public perceptions of and willingness to consume GM foods in the UK, where the rivalry between the five major chains, particularly the battle for market leadership between Tesco and Sainsburys, led to Tesco’s marketing pitch of being GM free (in the beginning for its house-brand products) being copied by the other chains.\textsuperscript{121}


\textsuperscript{116}Para. 137

\textsuperscript{117}Para. 100

\textsuperscript{118}Marceau and Trachtman (note 37), p. 875

\textsuperscript{119}Representative of Gerber Baby Food Company, Stakeholder Forum, Pew Initiative on Food and Biotechnology, Washington DC, 29 November 2001 and Foster \textit{et al} (note 19), p. 9. See also Tegene \textit{et al} (note 26) for an analysis of the effects of different information on potential consumers in an experimental auction.

\textsuperscript{120}Representative of General Mills Company, Stakeholder Forum, Pew Initiative on Food and Biotechnology, Washington DC, 29 November 2001. See also the summary of the experience in Australia in Foster \textit{et al} (note 19), p. 9

\textsuperscript{121}This decision was connected with the exclusive marketing rights held by Sainsburys for GM tomatoes for the UK market. Personal interview with Dr Geoff Spriegel, Director, Quality and Innovation Group, J Sainsbury plc, 16 March 2001
Supermarket chains in other European countries (such as Carrefour and the Auchen Group in France) were also active in seeking to brand themselves as GM-free. This has also been the experience in New Zealand following the decision in 2003 by the New Zealand government to lift the moratorium on the commercial release of GMOs.

Even in markets such as Canada where GM foods have been extensively consumed and traded, the introduction of GM labelling requirements could have a suppressive effect on consumer demand. The survey by the Consumers’ Association of Canada finding 91 per cent support for mandatory GM labelling suggests that labelling could influence consumer decisions in the market place.

The potential for labelling/signage requirements to create adverse consumer perceptions have been the subject of WTO/GATT disputes. The GATT dispute on US – Hawaiian Regulations concerned a claim by Australia that a United States signage requirement violated Article III:4 of GATT. Under the requirement, firms that sold imported eggs were required to display a sign stating “We sell foreign eggs”. The complaint was withdrawn following a United States domestic court decision that declared the law unconstitutional and contrary to Article III:4 of GATT.

In Korea – Beef, Australia argued that a requirement for specialised imported-beef stores to display a sign “Specialized Imported Beef Store” had the effect of emphasising any negative perceptions about the quality of imported beef. This had a detrimental effect on the marketability of imported beef and a dampening effect on prices. The panel found that the requirement went beyond the indication of origin on products and was contrary to Article III:4 of GATT.

The potential influence of labelling in creating consumer perceptions was also recognised by the Panel in EC – Sardines. It found that an EC regulation that restricted the use of the marketing term “sardines” to only a species of fish found in European waters had created consumer expectations that were subsequently used to justify maintaining the regulation.

2. Implementation and Compliance Costs

Mandatory GM labelling and product tracing requirements could impose significant implementation costs on traders and users of GM food. These include the cost of mandatory GM-labelling, with producers of non-GM food not required to label their product as such.

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122 See the company profiles in Department of Foreign Affairs and Trade, Subsistence to Supermarket II: Agrifood Globalisation and Asia Volume II – Changing Agrifood Distribution in Asia (Canberra: DFAT, 2002), pp. 132-164.
123 http://www.GEinfo.org.nz/112003/03.html
126 Panel Report, Korea – Beef, paras 198 and 640.
127 ibid., para. 641.
128 Para. 6.11
129 Foster et al (note 19), p. 9 suggest that the costs of the segregation and identity preservation systems necessary to ensure that non-GM foods can be distinguished from and are not contaminated by GM foods can also increase the cost of GM-free products.
Product-tracing requirements may impose compliance costs on GM food through administrative and record-keeping requirements. EU Regulation 1830/2003 requires the recording of the unique identifiers of GMOs, and that this information be communicated throughout the production and distribution chain – from farm-gate, through to processing, and final point of consumer sale. The European Commission considers that “the transmission and retention of information can largely be incorporated into existing (documentary) systems for transactions and as such should not imply significant extra costs for operators and consumers.”

Opponents of the regulation have however argued that this would, in practice, impose costs on GM foods additional to those on non-GM foods. Growers, traders, distributors and retailers may be required to maintain segregation and identity preservation systems for GM foods. These could include separate storage, transportation and distribution systems for GM foods as well as on-farm measures such as buffer zones to prevent contamination of non-GM crops.

A number of studies, including by the European Commission, have also estimated that the cost of such segregation and identity preservation systems would be significant. Estimates of the increase in farm-gate prices range from 6-17 per cent. Given the higher costs associated with GM food, GM product-tracing requirements could have the effect of discouraging traders and processors from trading or using GM foods.

IV. Conclusion

Given the fundamental philosophical differences underpinning regulatory approaches in the EU and North America, the regulation of GM foods will continue to be the subject of international controversy. To critics of the WTO, the issue has also become something of a litmus test for the WTO’s legitimacy. Attempts to use WTO-consistency arguments to pressure other Members or, a fortiori, any finding by a WTO dispute settlement panel that is seen as threatening the right of Members to determine their domestic regulatory approach, will therefore attract significant criticism. At the same time, Members will not lightly give up the rights (such as non-discriminatory access to markets) that are an integral part of the contractual bargain that WTO membership entails.

The evidence suggests that GM labelling and product-tracing requirements can impose significant barriers to trade by limiting the competitive opportunities of GM food in the marketplace. The application and interpretation of the relevant WTO rules is however less clear. Of particular interest will be which WTO agreements are applicable to the measures at issue and whether GM foods are like products to their non-GM products.

It remains to be seen whether formal WTO dispute settlement processes constitute the best means of resolving these issues. Some of the evidence to date – such as the continuing disagreement over the EU’s measures on beef hormones – suggests that dispute settlement action on contentious food safety / health issues does little to resolve the problems. The feasibility of political fixes – such as the waiver eventually agreed to by WTO Members to resolve EC – Bananas – is however questionable given the fundamental philosophical differences between Europe and North America on GMOs. What is apparent is that any WTO panel examining the issue faces a legal and political challenge of Gordian complexity.

130 Response From the European Commission (note 54), p. 4
131 These studies are summarised in Stone et al (note 12), pp. 34-38