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# *A GMO by Any Other Name . . . Might Be an SPS Risk!: Implications of Expanding the Scope of the WTO* Sanitary and Phytosanitary Measures Agreement

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## Abstract

*The lengthy WTO Panel report, recently issued in the* EC-Biotech *dispute, contains many noteworthy findings. Perhaps the most extraordinary and potentially far-reaching are those regarding the scope of the SPS Agreement. This Agreement has been the focus of much attention because of the requirement for scientific justification of national SPS measures, thereby casting doubt on the WTO validity of precautionary regimes like the EC's GMO regulations at issue in* EC-Biotech. *The Panel found that the SPS Agreement extends to trade-restrictive measures addressed to a range of health and environmental risks, even where those risks only indirectly relate to the introduction of 'pests' into a Member's territory. This article considers the consequences of an expanding ambit for the WTO SPS Agreement through the designation of a wider range of health and environmental regulations affecting trade as 'SPS measures'. The author contends that the* EC-Biotech *Panel's findings, if upheld, have the potential to work important changes in the relationship between the SPS Agreement and environmental regulatory regimes, both domestic and international. As a result, not only GMO regulations, but also other health and environmental measures with trade impacts, could become subject to SPS oversight, and consequently, the institutional rigours of the WTO regime.*

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# 1 Introduction

In early February 2006, a dispute settlement panel of the World Trade Organization (WTO) issued its interim report in the controversial *EC-Biotech* dispute, upholding, in part, the complainants' claims of WTO-incompatibility with respect to regulations for genetically modified organisms (GMOs) affecting international trade.[1] Barely was the ink dry on the thousands of pages of the Panel's rulings before the principal parties involved – the United States (US) and the European Communities (EC) – were at loggerheads over the implications of the report.[2] In the press, the protagonists in the dispute have each claimed a victory of sorts, acutely aware of the high political stakes attendant on the findings. US trade officials quickly announced the result as a win for farmers around the globe, removing barriers to the further development and dissemination of 'a safe and beneficial technology that is improving food security and helping to reduce poverty worldwide'.[3] Some in the environmental movement, on the other hand, saw the decision affirming claims of an unjustified EC GMO 'moratorium' as (another) endorsement of the notion 'that free trade should take precedence over the precautionary principle and the democratic right to regulate for the protection of either health or the environment'.[4] The EC, for its part, was anxious to avoid admitting such a comprehensive defeat in the dispute. Since the interim ruling was released and publicly 'leaked',[5] it has instead focused on the Panel's finding that any EC

[1] *European Communities – Measures Affecting the Approval and Marketing of Biotech Products*, Interim Reports of the Panel, WTO Docs WT/DS291/INTERIM, WT/DS292/INTERIM, WT/DS293/INTERIM, 7 Feb. 2006, http://www.foeeurope.org/biteback/WTO_decision.htm (accessed at 14 August 2006). The Panel's Final Report was issued on 29 Sept. 2006: *European Communities – Measures Affecting the Approval and Marketing of Biotech Products*, Reports of the Panel, WTO Docs WT/DS291/R, WT/DS292/R, WT/DS293/R, 29 Sept. 2006, http://www.wto.org/english/news_e/news06_e/291r_e.htm (accessed at 12 Oct. 2006). This article uses the shorthand *EC-Biotech* case for the dispute, however, even this designation has been controversial. The EC, for example, preferred to describe the products at dispute as GMOs or 'genetically modified' (GM) products.

[2] Cage, 'U.S., EU Again at Loggerheads on Trade as Both Claim Victory in WTO Biotech Ruling', *Associated Press Worldstream* (Geneva), 8 Feb. 2006, Business News. The other complainants challenging the EC's measures were Canada and Argentina.

[3] 'U.S. Trade Representative Rob Portman and U.S. Agricultural Secretary Mike Johanns on Agricultural Biotechnology and the WTO', Office of the United States Press Release, 7 Feb. 2006, http://www.ustr.gov/Trade_Agreements/Monitoring_Enforcement/Dispute_Settlement/Dispute_Settement_Press_Releases/Section_Index.html (accessed at 14 Aug. 2006).

[4] Cage, 'U.S. Says WTO Ruling against EU Biotech Curbs Should Bring Great Benefits to World Farmers', *Associated Press Worldstream* (Geneva), 8 Feb. 2006, Business News, quoting the comments of Caroline Lucas, a European lawmaker representing the British Green Party.

[5] Officially, a panel's interim report is not a public document as it is issued only to the parties in the dispute. Nevertheless, given the political divisions internationally and the level of public interest in the case, it is not surprising that the full interim *EC-Biotech* Panel report 'leaked' shortly after its release. The final Panel report was provided to the parties on 10 May 2006 but not publicly released until 29 Sept. 2006. References are provided to the final Panel report.

moratorium on imports of GM products is now at an end, apparently leaving intact the EC's pre-marketing approval scheme for such products.[6]

Although the focus of the disputing parties has been on alleged 'undue' delays in the EC's administration of its GMO regulations and the Panel's rulings in this regard,[7] there are many other, extraordinary findings buried in the thousand plus pages of the report. Some of these findings are at odds with the cautious tone taken by the Panel towards the end of its report, where it stresses that it has not determined 'whether biotech products in general are safe or not'.[8] One such set of findings by the Panel are those concerning the types of measures covered by the WTO's *Sanitary and Phytosanitary Measures Agreement* (SPS Agreement).[9] Going against conventional wisdom regarding the scope of the SPS Agreement,[10] these findings extend the Agreement to cover a range of health and environmental risks, even those linked only indirectly to the introduction of GMOs into the environment. In suggesting an expanding ambit of operation for the SPS Agreement, these rulings may have far-reaching effects for the area of sanitary and phytosanitary (SPS) risk management, and environmental regulation more generally.

In any dispute over domestic health and environmental measures coming before the WTO, a central question is often that of the applicability of the SPS Agreement to the measures.[11] The importance of this issue turns on the consequences of designating particular domestic regulations – like the GMO scheme at stake in the *EC-Biotech* case – as 'SPS measures'. If regulations, or parts thereof, are *not* SPS measures, then they come to be considered (if at all) in WTO dispute settlement under the requirements of the *Technical Barriers to Trade Agreement* (TBT Agreement)[12] or those of the *General Agreement on Tariffs and Trade* (GATT).[13] On the other hand, regulations classed as SPS measures attract assessment under the more stringent requirements of

[6] Geitner and Pollack, 'Unyielding Stances on Biotech: WTO Backs U.S. on Modified Food, but EU Stays Opposed', *The International Herald Tribune* (Paris), 10 Feb. 2006, at 14, quoting EU officials' comments that the decision was 'largely of historical interest' and '[n]othing in this panel finding will argue that states cannot set the rules they wish for GM products'.

[7] The Panel found that the EC had instituted a 'moratorium' on GMO approvals, which caused 'undue delay' in the processing of GM product applications generally and in 24 of 27 specific product applications cited by the complainants: *EC-Biotech*, Panel report, paras. 8.6, 8.7.

[8] *EC-Biotech*, Panel report, para. 8.3.

[9] *Agreement on the Application of Sanitary and Phytosanitary Measures*, opened for signature 15 Apr. 1994, 1867 UNTS 493 (entered into force 1 Jan. 1995) [hereinafter SPS Agreement].

[10] For instance, the Panel noted a Uruguay Round Secretariat background paper on the proposed *SPS Agreement*, cited by the EC, which records the negotiators' view that '[m]easures for environmental protection, per se, [ . . . ] are not covered by the proposed *[SPS] Agreement*': *EC-Biotech*, Panel report, para. 7.199.

[11] This issue was hotly contested by the parties in the *EC-Biotech* case: see Peel, Nelson and Godden, 'GMO Trade Wars: The Submissions in the *EC-GMO* Dispute in the WTO', 6(1) *Melbourne J. Int'l Law* (2005) 141, at 157–158.

[12] *Agreement on Technical Barriers to Trade*, opened for signature 15 Apr. 1994, 1868 UNTS 120 (entered into force 1 Jan. 1995) [hereinafter TBT Agreement].

[13] *General Agreement on Tariffs and Trade*, opened for signature 15 Apr. 1994, 55 UNTS 194, 1867 UNTS 187 (entered into force 1 Jan. 1995) [hereinafter GATT].

the SPS Agreement, which focus on the question of the scientific justification for measures, rather than their discriminatory trade effects.[14] In turn, the provisions of the SPS Agreement calling for a firm evidentiary basis for SPS regulations differ from the more broadly oriented, frequently 'precautionary', requirements of environmental treaties, which might provide an alternative forum for the discussion of disputed regulations.[15] Thus, the Panel's rulings in *EC-Biotech* – finding that a broad range of health and environmental concerns can be characterized as risks of an SPS nature – not only have potential implications for the inter-relationship between the SPS Agreement, TBT Agreement and GATT, but also for that between the WTO and overlapping environmental regimes. In this respect, an expansion in the scope of the SPS Agreement could contribute to 'fragmentation' of international law in the health and environmental area,[16] by facilitating complainants' framing of disputes in SPS terms so as to attract the more stringent requirements of the WTO SPS regime.

This article considers the potential consequences of an expanding ambit for the WTO SPS Agreement through the designation of a wider range of health and environmental regulations affecting trade as 'SPS measures'. The article first considers the arguments traditionally put forward in favour of a relatively narrow scope of operation for the SPS Agreement, illustrating these by reference to the 'broader' health and environmental risks which are the focus of the EC's GMO regulations. The article then turns to a discussion of the Panel's findings regarding the nature of 'SPS measures' in the *EC-Biotech* case, and the way these rulings act to widen the scope of the SPS Agreement. Particular attention is drawn to the Panel's reliance on an interpretative approach – also much favoured by the WTO Appellate Body in recent times – that

[14] Pauwelyn, 'The WTO Agreement on Sanitary and Phytosanitary (SPS) Measures as Applied in the First Three SPS Disputes EC – Hormones, Australia – Salmon and Japan Varietals', 2 *JIEL* (1999) 641, at 644.

[15] Winham, 'International Regime Conflict in Trade and Environment: The Biosafety Protocol and the WTO', 2 *World Trade Review* (2003) 131. Precautionary regulation is based on the principle that scientific uncertainty should not prevent regulatory action to address serious threats of environmental harm: see, e.g., Cameron, 'The Precautionary Principle in International Law', in T. O'Riordan, J. Cameron and A. Jordan (eds), *Reinterpreting the Precautionary Principle* (2001) 113.

[16] The topic of 'fragmentation' of international law is one receiving increasing attention in the international legal literature and is also the subject of a recent study issued by the International Law Commission: see Abi-Saab, 'Fragmentation or Unification: Some Concluding Remarks', 31 *NYU J. Int'l Law & Politics* (1999) 919; Dupuy, 'The Danger of Fragmentation or Unification of the International Legal System and the International Court of Justice', 31 *NYU J. Int'l Law & Politics* (1999) 791; Jackson, 'Fragmentation or Unification Among International Institutions: The World Trade Organization', 31 *NYU J. Int'l Law & Politics* (1999) 823; Koskenniemi and Leino, 'Fragmentation of International Law? Postmodern Anxieties', 15 *Leiden Journal of International Law* (2002) 552; Fischer-Lescano and Teubner, 'Regime-Collisions: The Vain Search for Legal Unity in the Fragmentation of Global Law', 25 *Michigan J. Int'l Law* (2004) 999; Hafner, 'Pros and Cons Ensuing from Fragmentation of International Law', 25 *Michigan J. Int'l Law* (2004) 849; Pauwelyn, 'Bridging Fragmentation and Unity: International Law as a Universe of Interconnected Islands', 25 *Michigan J. Int'l Law* (2004) 903; Rao, 'Multiple International Judicial Forums: A Reflection of the Growing Strength of International Law or its Fragmentation?', 25 *Michigan J. Int'l Law* (2004) 929; Simma, 'Fragmentation in a Positive Light', 25 *Michigan J. Int'l Law* (2004) 845; McLachlan, 'The Principle of Systemic Integration and Article 31(3)(c) of the Vienna Convention', 54 *ICLQ* (2005) 279; Koskenniemi, 'Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law', ILC, UN Doc. A/CN.4/L.682, 2006.

focuses on the literal meaning of the Agreement's text without reference to the wider socio-political context.[17] Indeed, the adoption of this approach by the Panel may enhance the prospect of its findings receiving the Appellate Body's endorsement in the event of an appeal. The final section of the article examines the implications of a broader scope for the SPS Agreement, arguing that if the *EC-Biotech* Panel's findings in this respect are followed they have the potential to work important changes in the relationship between the SPS Agreement and environmental regulatory regimes, both domestic and international. As a result, not only GMO regulations, but potentially also a range of other health and environmental measures with trade impacts, could become subject to SPS oversight, and with it, the institutional rigours of the WTO regime.

## 2 Scope of the SPS Agreement: The Conventional View

### A *'Specific' Focus of the SPS Agreement*

The SPS Agreement, the TBT Agreement and the 'national treatment' requirements of the GATT constitute the core of the WTO's rules regarding 'non-tariff' barriers to trade. Non-tariff trade barriers (NTBs) consist of domestic regulations purportedly introduced for various public policy purposes (health protection, environmental conservation, safeguarding consumers, etc) which nonetheless distort international trade.[18] Many such regulations are not discriminatory on their face, that is, they apply equally to domestically-produced products as well as to imports of the same product from other countries. Nevertheless, such measures may affect international trade by, for example, banning or restricting the use of a particular product in a WTO Member's territory or requiring compliance with detailed regulatory requirements that are thought to create unnecessary costs for exporters.[19] In the Uruguay round of trade negotiations that led to the establishment of the WTO, NTBs were one of the topics for which new agreements were proposed in order to supplement the general requirements of the GATT that imported products be 'accorded treatment no less favourable than that accorded to like products of national origin'.[20] Reworking of the Standards Code to produce the TBT Agreement was designed to deal with a broad range of 'technical' product standards and regulations that WTO Members might introduce for public policy reasons, including protection of the environment, human health or consumer safety.[21] On the other hand, the new SPS Agreement was to be

[17] For a discussion of this interpretative approach see Horn and Weiler, 'European Communities – Trade Description of Sardines: Textualism and its Discontent', in H. Horn and P. Mavroidis (eds), *The WTO Case Law of 2002* (2003) 248.

[18] Henson and Wilson, 'Introduction: A Review of Key Issues', in S. Henson and J. S. Wilson (eds), *The WTO and Technical Barriers to Trade* (2005) xi, at xi.

[19] O. Perez, *Ecological Sensitivity and Global Legal Pluralism: Rethinking the Trade and Environment Conflict* (2004), at121.

[20] GATT, Article III(4).

[21] TBT Agreement, Annex 1, para. 1.

directed to a particular category of NTBs, namely 'sanitary and phytosanitary regulations and barriers' with the potential for adverse effects on agricultural trade.[22] In this scheme, any 'residual' non-tariff regulatory measures falling outside the ambit of the SPS and TBT Agreements were to be left to the provisions of the GATT.

The inter-relationship between the SPS Agreement, the TBT Agreement and the GATT in any dispute over a WTO Member's health or environmentally-related NTBs poses a number of thorny questions, not least of which concerns how the agreements are to be applied where the measure is one addressing multiple regulatory purposes.[23] Nevertheless, in practice, these questions can mostly be avoided if the WTO dispute settlement organs assess compatibility under the more 'specific' agreement first, proceeding only to consider the other two agreements if no incompatibility is found.[24] The conventional view has been that of the three WTO agreements the SPS Agreement is the one that has the narrowest scope of operation. For instance, Doaa Motaal in her examination of the negotiating history of the SPS and TBT Agreements, states that 'the SPS Agreement can be seen as a carve-out from TBT', 'intended to deal with a limited set of measures'.[25] Likewise, commentators discussing potential trade disputes over domestic health or environmental measures, such as those establishing GMO approval systems or labelling requirements, generally canvass issues of compatibility under the TBT Agreement and GATT in addition to the SPS Agreement, reflecting a view that the former agreements capture the 'broader' purposes of the measures.[26] According to this approach, the SPS Agreement would cover only those trade-restrictive regulatory measures introduced to deal with issues of traditional 'sanitary and phytosanitary' concern, such as quarantine risks associated with the entry and spread of pests and diseases via traded agricultural products, or risks posed by toxins, additives or contaminants in imported human foods or animal feed.

[22] Ministerial Declaration on the Uruguay Round, MIN.DEC, 20 Sept. 1986, Part I, Section D Agriculture (iii).

[23] Marceau and Trachtman, 'The Technical Barriers to Trade Agreement, the Sanitary and Phytosanitary Measures Agreement, and the General Agreement on Tariffs and Trade', 36 *Journal of World Trade* (2002) 811, at 868–878. For its part, the *EC-Biotech* Panel ruled that a measure with distinctively different purposes could be assessable under more than one Agreement: *EC-Biotech*, Panel report, para. 7.165. However, it did not go on to make findings of compatibility under agreements other than the SPS Agreement.

[24] See *European Communities – Measures Concerning Meat and Meat Products*, Report of the Panel, WT/DS26/R & WT/DS48/R, 12 July 1999 [hereinafter *EC-Hormones* Panel Report], para. 8.42, observing that this manner of proceeding was 'the most efficient'.

[25] Motaal, 'The "Multilateral Scientific Consensus" and the World Trade Organization', 38 *J. World Trade* (2004) 855, at 856. See also Boisson de Chazournes and Mbengue, 'GMOs and Trade: Issues at Stake in the EC Biotech Dispute', 13(3) *Review of European Community and International Environmental Law* (2004) 289, at 295.

[26] See, e.g., Howse and Mavroidis, 'Europe's Evolving Regulatory Strategy for GMOs – The Issue of Consistency with WTO Law: Of Kine and Brine', 24 *Fordham Int'l L.J.* (2000) 317; Scott, 'European Regulation of GMOs and the WTO', 9 *Colum. J. Eur. L.* (2003) 213; Morgan and Goh, 'Genetically Modified Food Labelling and the WTO Agreements', 13 *Review of European Community and International Environmental Law* (2004) 306.

For many, this view of the scope of the SPS Agreement would be considered an axiomatic principle of the WTO rules on NTBs, simply reflecting the provisions of the agreements concerned. The 'sanitary and phytosanitary measures' to which the requirements of the SPS Agreement apply are specifically defined in Annex A, paragraph 1 of the Agreement as 'any measure' addressed to the prevention of one of four categories of risks. When determining whether a measure falls within the scope of the SPS Agreement, the practice of WTO panels and the Appellate Body in past cases has been to look to the purpose of the measure and whether this matches one or more of the risk categories set out in Annex A, paragraph 1.[27] Accordingly, a measure will be found to be an 'SPS measure' where it is applied:

(a) to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;
(b) to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;
(c) to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or
(d) to prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.

These definitions have particular significance in delimiting the coverage of the SPS regime *vis-à-vis* other WTO agreements given that Article 1.5 of the TBT Agreement states that its provisions 'do not apply to sanitary and phytosanitary measures as defined in Annex A of the Agreement on the Application of Sanitary and Phytosanitary Measures'. Added to this are the provisions of Article 2.4 of the SPS Agreement itself, which provide that SPS measures conforming to the requirements of the Agreement are 'presumed to be in accordance with the obligations of the Members under the provisions of GATT 1994 which relate to the use of sanitary or phytosanitary measures, in particular the provisions of Article XX(b)'. In the first dispute in which the SPS Agreement was considered, that of *EC-Hormones*, the Panel held that the SPS Agreement imposes obligations of a different nature to those under the GATT and its exception for health protective measures in article XX(b). In the Panel's view, the SPS Agreement provided 'for specific obligations to be met in order for a Member to enact or maintain specific types of measures, namely sanitary and phytosanitary measures'.[28]

In contrast to the SPS Agreement's apparently narrow concern with measures targeted to sanitary and phytosanitary risks, the provisions of the TBT Agreement and the GATT are more broadly focused, seemingly contemplating a wider range of regulatory purposes lying behind domestic measures. The exceptions of the GATT have a

[27] Pauwelyn, *supra* note 14, at 643.
[28] *EC-Hormones* Panel report, para. 8.39.

particularly extensive ambit, permitting the adoption of non-discriminatory, trade-restrictive measures which are 'necessary to protect public morals', 'necessary to protect human, animal or plant life or health', 'necessary to secure compliance with laws or regulations' of a national government, or 'relating to the conservation of exhaustible natural resources'.[29] The TBT Agreement also evidences a concern with a broad range of NTBs, covering 'technical regulations' directed, *inter alia*, to the 'prevention of deceptive practices' and the 'protection of human health or safety, animal or plant life or health or the environment'.[30] Indeed, given the specific (and exclusive) mention of 'environmental' concerns in the TBT Agreement, it is arguable that environmental risks fall entirely outside the scope of the SPS Agreement, at least to the extent that they do not involve direct injury, through pest or disease-action, to animal or plant life or health.[31]

Arguments in favour of a narrow scope of application for the SPS Agreement receive some support from the relevant negotiating history for the Agreement. This suggests that the focus of negotiators was on risks associated with agricultural products, such as meat or plant products that are imported into a country but may carry with them pests or diseases.[32] A long-running dispute between the US and the EC over hormone residues in beef products (that later gave rise to the case of *EC-Hormones*) also cast a 'shadow' over the negotiations,[33] resulting in the inclusion of provisions regarding measures addressed to food safety risks. In addition, some see the 'limited' ambit of the SPS Agreement as having supported the inclusion of stringent, science-based requirements for SPS measures, but not for measures falling under the 'broader' provisions of the TBT Agreement or the GATT.[34] In this respect, it is often maintained that the call for 'sufficient' supporting scientific evidence[35] and justificatory risk assessments[36] in the SPS Agreement was a response to fears that 'as tariff barriers in agriculture came down, domestic agricultural lobbies would resort to sanitary and phytosanitary measures to keep food and agricultural products out of their markets'.[37] Arguably, these are concerns that are more clearly applicable to quarantine and food safety measures – the measures generally used to impose restrictions or other requirements on imported agricultural products – rather than to broadly-targeted environmental regulations with incidental impacts on international trade.

Looking beyond the WTO regime to the sphere of multilateral environmental agreements (MEAs), there are a number of other indications that argue in support of a narrow ambit of operation of the SPS Agreement and its requirements for domestic

[29] GATT, Articles XX(a), (b), (d) and (g) respectively.

[30] TBT Agreement, Article 2.4.

[31] This was the argument put forward by the EC in the *EC-Biotech* case: see *EC-Biotech*, Panel report, para. 7.198.

[32] See, particularly, Motaal, *supra* note 25, for a detailed account of the negotiating history.

[33] Victor, 'The Sanitary and Phytosanitary Agreement of the World Trade Organization: An Assessment After Five Years', 32 *NYU J. Int'l Law & Politics* (2000) 865, at 872.

[34] Motaal, *supra* note 25, at 856.

[35] SPS Agreement, Article 2.2.

[36] SPS Agreement, Articles 5.1 and 5.2.

[37] Thompson, 'Australia-Salmon and Compliance Issues Surrounding the SPS Agreement: Sovereign Acceptance and Measure Adaptation', 33 *Law & Pol'y Int'l Bus.* (2002) 717, at 719.

SPS measures to be based on 'sound science'.[38] In contrast to the SPS regime's call for regulations to bear a 'rational relationship' to scientific evidence and a risk assessment,[39] environmental regimes invariably couple a requirement for reliance on scientific information with an instruction to act with caution in the face of scientific uncertainty.[40] While the SPS Agreement also allows some scope for 'precautionary' action through its exception for domestic SPS measures adopted in circumstances 'where relevant scientific evidence is insufficient',[41] this is generally considered to be a fairly 'weak' version of the principle of precaution found in international environmental law.[42] The broader scope, under environmental regimes, for precautionary action in conditions of scientific uncertainty (and not just in situations of 'insufficiency' of scientific evidence regarding risks)[43] may in turn reflect states' acknowledgement of the different nature of available scientific knowledge regarding most environmental problems, as opposed to those associated with quarantine pests or diseases, or toxins of concern for human health. Whereas scientific research is frequently extensive and well developed as regards human health (particularly cancer) risks or risks from quarantine pests with the potential to cause serious economic losses to agriculture, knowledge of ecosystem interactions and environmental problems is more often patchy, incomplete and subject to many uncertainties.[44]

[38] The latter requirements have been described as an emerging 'new pillar' of international trade law: Maruyama, 'A New Pillar of the WTO: Sound Science', 32 *International Lawyer* (1998) 651.

[39] These interpretations of the requirements of Articles 2.2 and 5.1 of the SPS Agreement were developed in the SPS disputes of *European Communities – Measures Concerning Meat and Meat Products*, Report of the WTO Appellate Body, WT/DS26/AB/R & WT/DS48/AB/R, 16 Jan. 1998 [hereinafter *EC-Hormones*], para. 193 and *Japan – Measures Affecting Agricultural Products*, Report of the WTO Appellate Body, WT/DS76/AB/R, 22 February 1999 [hereinafter *Japan-Varietals*], para. 84.

[40] See, e.g., *Convention on Biological Diversity*, opened for signature 5 June 1992, (1992) 31 ILM 818 (entered into force 29 Dec. 1993), preamble; *United Nations Framework Convention on Climate Change*, opened for signature 9 May 1992, 1771 UNTS 164 (entered into force 24 Mar. 1994), Article 3; *United Nations Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Migratory Fish Stocks*, opened for signature 4 Dec. 1995, (1995) 34 ILM 1542 (entered into force 11 Dec. 2001), Articles 5 and 6; *Convention on Persistent Organic Pollutants*, opened for signature 23 May 2001, (2001) 40 ILM 532 (entered into force 17 May 2004) [hereinafter POPs Convention], Article 8(9); *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, opened for signature 29 Jan. 2000, (2000) 39 ILM 1027 (entered into force 11 Sept. 2003) [hereinafter Biosafety Protocol], Articles 10(6) and 11(8).

[41] SPS Agreement, Article 5.7.

[42] Applegate, 'The Taming of the Precautionary Principle', 27 *William & Mary Envtl L. & Policy Review* (2002)13, at 51–55. Article 5.7 of the SPS Agreement permits only 'provisional' measures based on 'available pertinent information' and WTO Members adopting such measures are under additional obligations to 'seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time'.

[43] In its decision in *Japan – Measures Affecting the Importation of Apples*, Report of the WTO Appellate Body, WT/DS245/AB/R, 26 Nov. 2003, [hereinafter *Japan-Apples*], para. 184, the Appellate Body indicated scientific uncertainty is not the same as an insufficiency of relevant scientific evidence.

[44] As to the considerable uncertainties that often pertain in environmental science see Costanza and Cornwell, 'The 4P Approach to Dealing with Scientific Uncertainty', 34(9) *Environment* (1992) 12; Haag and Kaupenjohann, 'Parameters, Prediction, Post-normal Science and the Precautionary Principle – A Roadmap for Modelling for Decision-Making', 144 *Ecological Modelling* (2001) 45. This is not to say that there are not also many uncertainties in health risk assessment (see, e.g., Sullivan and Hunt, 'Risk Assessment: The Myth of Scientific Objectivity', 16 *Environmental and Planning Law Journal* (1999) 522), however, such risks tend to attract more research funding and generate more findings than ecological risks.

Moreover, if one accepts that a country agreeing to 'precautionary' provisions in the context of a MEA, while also accepting the science-focused requirements of the WTO SPS Agreement, 'acts as one and the same state (even though it does so in different fora)',[45] one plausible conclusion is that governments intended their SPS commitments to impact little on their broader responsibilities for 'precautionary' health or environmental protection.

## B *GMOs as an SPS Risk?*

Given the general view that the SPS Agreement is fairly narrow in scope, concerns that its requirements could be brought to bear on broadly-framed environmental regulations with adverse trade impacts might seem far-fetched, even a little surreal. While there are some indications in the text of the SPS Agreement that it was intended to apply more broadly than simply to quarantine and food safety measures affecting agricultural trade, these references themselves are rather obscure. For example, a footnote to Annex A of the SPS Agreement provides that for the purpose of the definitions in paragraph 1, '"animal" includes fish and wild fauna; "plant" includes forests and wild flora; "pests" include weeds; and "contaminants" include pesticide and veterinary drug residues and extraneous matter'. The latter clarification indicates that the negotiators of the SPS Agreement in the 1980s had in their sights food safety measures like the EC's regulations governing hormone residues in meat, which became the subject of the first SPS dispute in *EC-Hormones*.[46] Beyond that, however, there is little to suggest that negotiators contemplated the application of the SPS Agreement to broader health or environmental requirements incidentally impacting trade.

Prior to the Panel's decision in *EC-Biotech*, there was therefore some force behind criticism of the US strategy in the case of presenting arguments only on the SPS compatibility of the EC's GMO regulations.[47] Presenting GMO authorization and approval requirements as 'SPS measures' required a rather constrained and literal reading of the relevant definitions in Annex A of the SPS Agreement. For instance, it was argued by the complainants that GM crops 'escaping' from an area of cultivation could be classified as 'weeds' (included within the definition of a 'pest'), which might then outcompete native species or other crop plants, thus threatening the health of 'wild flora' (included within the definition of a 'plant') or causing 'other damage', ranging from

[45] Pauwelyn supra note 16, at 904. However, this may overestimate the coherence of modern government policy and action where the situation can frequently be one of the 'left hand' being unaware of what the 'right hand' is doing. This compounds the problem of 'fragmentation' discussed further below if the trade departments of governments run arguments for a broad ambit of operation of WTO requirements without regard to potentially conflicting environmental commitments.

[46] A useful summary of the background to this dispute is provided by McNiel, 'The First Case under the WTO's Sanitary and Phytosanitary Agreement: The European Union's Hormone Ban', 39 *Virginia J. Int'l Law* (1998) 89.

[47] By contrast, both Canada and Argentina also made arguments under the TBT Agreement and GATT. In the end, the Panel ruled as a matter of 'judicial economy' that it was not necessary to make findings on the consistency of the EC measures with these Agreements.

impacts on biodiversity to endangering the continued viability of organic farming practices.[48] By contrast, there seemed to be a readier fit between the EC measures and provisions of the TBT Agreement dealing with technical regulations directed to the prevention of 'environmental' risks, or even those of the GATT Article XX(a) allowing non-discriminatory measures 'necessary to protect public morals', given the strong thread of ethical concern running through public debates over GMOs.[49] Undoubtedly, the advantage of a focus on the SPS-compatibility of GMO regulations from the complainants' perspective was not the ease of characterizing such regulations as 'SPS measures', but rather the more limited flexibility the SPS Agreement offered the EC to justify its measures on public policy grounds.

In the *EC-Biotech* case, the unsurprising response of the EC to the complainants' arguments that the SPS Agreement was of primary relevance in assessing its GMO regulations was that this fundamentally under-estimated the breadth of the risks dealt with in its GMO regulatory regime. Indeed, the EC questioned the competence of the WTO dispute settlement system to decide the issues raised by the complainants,[50] contending that its regulatory scheme should instead be judged in light of relevant MEAs, such as the *Cartagena Biosafety Protocol to the Convention on Biological Diversity* (Biosafety Protocol).[51] The rationale behind such arguments is readily apparent on examination of the EC's scheme for the approval of GM crops and foods, which in terms of both process and coverage is an extremely complex one that has evolved significantly since its initial introduction in 1990.[52] Applications for the approval of GMOs under this scheme proceed through a multi-layered process of Member State and Community-level decision-making, informed by scientific assessments and political considerations brought to the process by national authorities and various EC-level committees.[53] The assessments that are carried out are broadly concerned with the potential health and environmental risks relating to the deliberate environmental release of GMOs as GM crops and the use of GMOs as, or in, foods.[54] The breadth of the

[48] See, e.g., *European Communities – Measures Affecting the Approval and Marketing of Biotech Products*, WTO Docs WT/DS291, WT/DS292, WT/DS293 (2004) (First Submission of the US), http://www.tradeenvironment.org/page/theme/tewto/biotechcase.htm (accessed 14 August 2006), paras. 78–80.

[49] Wynne, 'Creating Public Alienation: Expert Cultures of Risk and Ethics on GMOs', 10(4) *Science as Culture* (2001) 445.

[50] *European Communities – Measures Affecting the Approval and Marketing of Biotech Products*, WTO Docs WT/DS291, WT/DS292, WT/DS293 (2004) (First Written Submission by the EC), http://www.tradeenvironment.org/page/theme/tewto/biotechcase.htm (accessed at 14 Aug. 2006), para. 10.

[51] Biosafety Protocol. The Biosafety Protocol governs trade in certain categories of GMOs, permitting countries to impose import bans following a risk assessment process.

[52] Regulatory provisions are found in an EC directive dealing with the environmental release of GMOs, Directive 2001/18/EC, [2001] OJ L 106/1 (which replaced the earlier Directive 90/220/EEC [1990] OJ L 117/15) and a Council Regulation 258/97 [1997] OJ L 43/1 governing the approval of novel foods, including those containing GMOs.

[53] For a detailed account of the scheme see Brosset, 'The Prior Authorisation Procedure Adopted for the Deliberate Release into the Environment of Genetically Modified Organisms: The Complexities of Balancing Community and National Competencies', 10 *ELJ* (2004) 555.

[54] See Directive 90/220/EEC and Directive 2001/18/EC, Article 1. The *EC-Biotech* Panel lists the range of risk concerns addressed by the measures at paras. 7.189-7.194 of its Report.

potential GMO risks dealt with by the regulations – which has in turn been informed by robust public and scientific debates in the EC and other parts of world – seems inadequately captured by the four categories of 'SPS measures' defined in the SPS Agreement.

Like an increasing number of domestic regulatory frameworks concerned with GMOs, the EC scheme deals with two different kinds of concerns over GMOs, some of which would seem to extend far beyond harms associated with the spread of 'pests' or the consumption of 'toxin' or 'additive' containing food products.[55] The first such category of risk concerns might be described as the 'direct' potential impacts of GMOs on the environment and human health. Included in this suite of risks are the possible allergenic or toxic effects of a GMO for humans or animals if, for instance, a GM plant is consumed as or in a food, or produces substances which are toxic to insects that eat its pollen, seed or leaves. In an environmental context, the 'direct' impacts of GMOs might also extend to potential 'gene transfer' from a GM plant to non-GM wild or cultivated plants, leading to the development of 'superweeds' that out-compete other, unmodified, plants. Another possible 'direct' impact of GM agriculture on the environment relates to the situation where a GM plant (or its seed) accidentally 'escapes' from an area of cultivation, allowing the GMO to establish in other areas, including areas of native forest.

The other category of GMO risk concerns dealt with by the EC regulatory scheme are best described as 'indirect' impacts of GM agriculture on human health or the environment. These concerns reflect the way in which the direct impacts of a product on health or the environment are often linked, both temporally and spatially, with a range of other potential harms, many of which extend to issues of 'social' or 'economic' concern rather than 'pure' health or environmental damage. For instance, potential adverse effects of GMOs regulated under the EC scheme include:

- effects on the dynamics and genetic diversity of populations of species in the receiving environment;
- risks associated with compromising prophylactic or therapeutic medical, veterinary, or plant protection treatments;
- effects on biogeochemical cycles, particularly carbon and nitrogen recycling through changes in soil decomposition of organic material; and
- effects on human or farm animal health, or effects on wild fauna, from increased insecticide use associated with the spread of GM plants.[56]

Characteristic of these types of risk concerns is that they seek to anticipate how a GMO might interact with human health or the environment over time and space, taking account of the ecological and social context in which GM agriculture takes place.

[55] A number of government reports have canvassed issues of GMO risk: see Senate Community Affairs Committee, *A Cautionary Tale: Fish Don't Lay Tomatoes (A Report on the Gene Technology Bill 2000)* (2000); Royal Society of Canada, *Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada* (2001); National Research Council, *Environmental Effects of Transgenic Plants: The Scope and Adequacy of Regulation* (2002).

[56] See *EC-Biotech*, Panel report, paras. 7.190, 7.194.

In this conception, not only is, say, potential gene transfer between a GM and non-GM plant of concern, but also the long-term effects of such a transfer on the biodiversity of a region, the implications for agricultural practices such as weed management and insecticide use, and the flow-on economic or other damage that may occur to farming areas seeking to preserve scope for non-GM cropping.[57] In domestic health and environmental regulatory systems it is increasingly considered to be 'best practice' to adopt a broad approach to conceptualizing possible risk pathways as this helps to map assessment processes to the inter-connected nature of most ecosystems and the reality of complex, multi-faceted risk problems.[58] Yet, applied under an international trade agreement, a broad conception of health and environmental risk, covering direct and indirect effects, may have very different consequences. In the case of the SPS Agreement, extending its provisions to an expansive range of trade-restrictive risk regulatory measures may expose the preventative and precautionary structures that address such concerns to scrutiny under the science-based disciplines of the Agreement.[59]

## 3 Broader Definition of SPS Measures: The *EC-Biotech* Findings

In the Panel's *EC-Biotech* report there is little to indicate its awareness of concerns over extending the scope of the SPS Agreement, and the impact that this might have for broader international relationships between trade and environmental rules. At the level of inter-governmental activity in the WTO, issues of trade and environment interaction have been ones generating significant discussion and debate, with a frequent reiteration of the belief that 'the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive'.[60] Eschewing such political imperatives, however, the Panel's analysis of whether the EC's GMO regulations could be classed as 'SPS measures' was instead based on a close examination of the text of the SPS Agreement. Looking largely to the 'ordinary meaning' of the terms in Annex A and the *Oxford English Dictionary* for guidance, the *EC-Biotech* Panel developed far-reaching interpretations of

[57] On the impact of different 'risk framings' on GMO risk assessment see Levidow *et al.*, 'European Biotechnology Regulation: Framing the Risk Assessment of a Herbicide-Tolerant Crop', 22 *Science, Technology and Human Values* (1997) 472.

[58] See Harte, 'Land Use, Biodiversity, and Ecosystem Integrity: The Challenge of Preserving the Earth's Life Support System', 27 *Ecology Law Quarterly* (2001) 929; Stirling and Gee, 'Science, Precaution and Practice', 117*Public Health Reports* (2002) 521.

[59] On the notions of harm prevention and precaution that underlie much of environmental regulation see N. de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (2002).

[60] *Ministerial Declaration*, Doha WTO Ministerial, 14 November 2001, Qatar, (2002) 41 ILM 746, 6. See also *Plan of Implementation of the World Summit on Sustainable Development*, Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 Aug. to 4 Sept. 2002, A/CONF.199/20, 91 and the preambular recitals in MEAs such as the Biosafety Protocol and POPs Convention.

the nature of SPS risks, bringing within the ambit of the SPS Agreement a wide range of environmental, health, agricultural and economic flow-on effects of GMO use and food production.

A central plank of the Panel's analysis in construing the definitions in Annex A of the SPS Agreement was that the frequently-used phrase 'animal or plant life or health' was 'meant to be comprehensive in coverage'.[61] In this regard, the footnote reference in Annex A, to animals as including 'wild fauna' and plants as including 'wild flora', provided the Panel with the means to bring broadly-framed environmental concerns within the scope of the risks addressed by the SPS Agreement. According to the Panel, risks to 'animal or plant life or health' could therefore encompass concerns relating to the effects of GM crops on micro-flora and micro-fauna (such as soil organisms), as well as 'non-target' organisms such as insects that are indirectly affected by the cultivation of an insecticide-producing GM crop (for example, if they consume the pollen of such plants).[62] In the Panel's construction, a possible environmental flow-on risk of GMOs – such as the potential for trans-genes from GM plants to be introduced into soil and thence, via run-off, into waterways where they could have a detrimental impact on aquatic micro-organisms – was a risk that could be adequately described as one concerned with 'animal or plant life or health'.[63]

Of even greater significance, in terms of expanding the scope of the SPS Agreement, was the Panel's interpretation of the phrase 'risks arising from', which is the terminology used in three of the four Annex A definitions of 'SPS measures'. Once again focusing on the text, the Panel noted that the phrase 'risks arising from' in the relevant definitions of Annex A is 'broad and unqualified'.[64] The Panel drew from the omission of qualifications in the text support for applying the phrase to cover both actual and *potential* risks that arise as a result of a pest, disease, disease-carrying organism or disease-causing organism.[65] Using a similar logic, it also found that '[t]here is nothing in Annex A(1)(a) which indicates that potential risks to animal or plant life or health must necessarily be the direct or immediate result of, e.g., the spread of a pest'.[66] Hence, it held that 'measures taken to protect animal or plant life or health from risks that arise *indirectly* or *in the longer term* from pests, diseases, disease-carrying organisms or disease-causing organisms' are not excluded from the scope of the SPS Agreement.[67] These rulings are significant in that they suggest that the SPS Agreement is not confined simply to risk situations for which there are 'direct and immediate' links between the product at issue, and potential harms to human, animal or plant life or health associated with pests and diseases. Provided a plausible chain of causation can be demonstrated or hypothesized to connect a product with a given health or environmental risk it seems a measure directed to mitigating that risk

[61] *EC-Biotech*, Panel report, para. 7.219.
[62] *Ibid.*
[63] *Ibid.*, para. 7.220.
[64] *Ibid.*, para. 7.225.
[65] *Ibid.*
[66] *Ibid.*, para. 7.226.
[67] *Ibid.* (emphasis added).

is potentially an SPS measure.[68] In the context of GMOs, this means that both concerns related to their potential for 'direct' adverse effects as 'pests' (for instance, the scenario where GM crops 'escape' and establish in other areas) *and* their possible 'pest effects' (for example, through gene transfer to other plants, leading to a reduction in genetic and species diversity) are matters appropriately treated as SPS risks.[69]

In the SPS Agreement, the term 'pest' is undefined, other than via the qualifying footnote that states that 'pests' include 'weeds'.[70] In interpreting this term, the *EC-Biotech* Panel looked to its 'ordinary', dictionary-derived meaning, finding that it connoted 'a troublesome, annoying or destructive person, animal, or thing'.[71] However, in light of the SPS Agreement's reference to matters of 'health' as well as 'life', and the inclusion of 'other damage' from pests in paragraph (d) of the definitions in Annex A, paragraph 1, the Panel concluded that 'in the context of the SPS Agreement the term "pest" should be understood as referring to an animal or plant which is destructive, or causes harm to the health of other animals, plants or humans, or *other harm*, or a troublesome or annoying animal or plant'.[72] This interpretation (as the Panel itself noted) departs from narrower definitions of 'pests' under relevant international standards, such as those of international organizations referenced by the SPS Agreement like the International Plant Protection Convention.[73] This did not deter the Panel though, which found, moreover, that the effects of pests extend to a broad range of 'other harms' beyond impacts on agricultural plants and animals. Accordingly, a GMO may be a 'pest' if by growing where it is not wanted it 'may necessitate control or eradication efforts by a farmer (e.g., in the case of weeds) or diminish the economic value of the crop the farmer is seeking to grow (e.g., because his/her market is non-GMO with low or little tolerance for impurities)'.[74] At a later point in its report, the Panel suggested that the phrase 'other damage' in Annex A(1)(d) might have an even broader scope, extending to damage to property or infrastructure (such as water intake systems), economic damage (through lost sales), damage to non-biological components of the environment (such as soil nutrient cycles), or adverse effects on the dynamics of species in the broader, receiving environment.[75] By coupling this understanding of the term 'pest' with its earlier ruling as to the inclusion of 'indirect effects' of GMOs within the scope of the SPS Agreement, the Panel was readily able to classify a wide range of potential environmental effects of GMOs as SPS matters.[76]

[68] The measure would also need to be one directly or indirectly affecting international trade: SPS Agreement, Article 1.1. This requirement is discussed further below.

[69] *EC-Biotech*, Panel report, para. 7.231.

[70] SPS Agreement, Annex A, footnote 4.

[71] *EC-Biotech*, Panel report, para. 7.238.

[72] *Ibid.*, para. 7.240.

[73] *Ibid.*, para. 7.241. The relevant definition used by the International Plant Protection Convention defines the term 'pest' as '[a]ny species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products'.

[74] *Ibid.*, para. 7.244.

[75] *Ibid.*, para. 7.370.

[76] *Ibid.*, paras. 7.373–7.378.

In relation to health risks, the *EC-Biotech* Panel's approach was similarly broad and also driven by a close analysis of the relevant text. For example, relying on dictionary definitions of terms such as 'additives', the Panel concluded that genes, including antibiotic resistance marker genes, can be considered 'substances added in the manufacture of the food plant'.[77] Hence, according to the Panel, 'genes, intentionally added for a technological purpose to GM plants that are eaten or being used as an input into processed foods, can be considered "additives in foods" within the meaning of Annex A(1)(b)'.[78] This interpretation not only represents an artificial understanding of the role of introduced genes like antibiotic resistance marker genes in GMOs,[79] but also departs from relevant international practice (for instance, the term 'additives', where used in Codex Alimentarius standards, is restricted to substances added during food production processes).[80] Nonetheless, the Panel persisted with a literal approach in its interpretation of other terms in Annex A(1)(b), such as the word 'food'. This led the Panel to conclude that possible risks associated with the consumption of GM pollen or seeds by insects and wild fauna were properly regarded as 'food' safety risks, despite the overtly environmental nature of these concerns.[81]

In the *EC-Biotech* case, the end result of the Panel's analysis, applying its broad understanding of terms in Annex A of the SPS Agreement, was that the entire EC legislative scheme relating to the environmental release of GM crops, and a substantial portion of its regulations of dealing with novel food authorizations, were found to be SPS measures.[82] That such a complex, multi-faceted risk regulatory scheme could be characterized as one directed to protecting against pest and food safety risks illustrates the potential scope of the SPS Agreement, where it is interpreted in a literal, decontextualized fashion. In the field of GMO regulation, there would be few national (or indeed supranational) schemes that would not qualify as SPS-related on this analysis.[83] Moreover, the Panel's interpretations of the Annex A definitions – particularly its extension of these provisions to measures dealing with the indirect health and environmental effects of pests, diseases and food additives – suggests the scope for

[77] *Ibid.*, para. 7.299.

[78] *Ibid.*, para. 7.301.

[79] Such genes are not so much 'added' as integrated into the genetic material of the GM plant. Moreover, it is not the gene itself, but rather the protein produced if the gene is expressed, that is the substance that may be linked to adverse health effects for consumers.

[80] *EC-Biotech*, Panel report, para. 7.299. The Codex Alimentarius Commission is the international organization designated by the SPS Agreement as the relevant international standard-setting body in the area of food safety.

[81] *Ibid.*, para. 7.292.

[82] The only risk concern found to be potentially outside the SPS Agreement's net was one referenced by the novel food regulation directing labelling to prevent consumers being misled. Hence, while the procedures for approval of GMOs set out in Directives 90/220 and 2001/18 were held to be directed to risks of the types covered by the SPS Agreement, the Panel found procedures for the approval of foods and food ingredients set out in Regulation 258/97 were 'in part' SPS measures: *ibid.*, para. 8.4.

[83] In fact, the EC scheme is one of the broadest existing GMO regulatory schemes and the model for many other countries introducing biotechnology regulations. For a review of different countries' regulations see Baumüller, 'Domestic Import Regulations for Genetically Modified Organisms and their Compatibility with WTO Rules', 6 *Asian Biotechnology and Development Review* (2004) 33.

more than just GMO environmental regulations to be caught by the SPS Agreement in the future.

## 4 Implications of Expanding the Scope of the SPS Agreement

If the *EC-Biotech* Panel's interpretations of the ambit of SPS measures are allowed to stand on Appellate Body review, they have the potential to effect a seismic shift in respect of the scope of operation of the SPS Agreement. In the area of biotechnology regulation, it would seem that few schemes are likely, on the Panel's approach, to fall outside the scope of SPS review, provided they also have identified impacts on international trade, for example, by banning imports of GMOs or imposing significant regulatory costs on traders attempting to export such products to the market concerned. While the *EC-Biotech* Panel might not have ruled upon the 'safety' of GMOs or their 'likeness' to non-GM products in this dispute,[84] its interpretation of the SPS Agreement ensures that in any subsequent challenge to GMO regulations, SPS disciplines will be of primary relevance. As regards the EC regulatory scheme, any such SPS challenge will have to await a future dispute as the complainants in the *EC-Biotech* case did not raise the issue of the SPS-compatibility of the EC's pre-marketing approval scheme for GM products before the Panel. However, the Panel's treatment of the 'safeguard' measures adopted by EC Member States pursuant to the broader regulatory scheme (that *were* challenged by the complainants and found to be SPS measures) gives an indication of how a future evaluation of SPS compliance of GMO regulations might proceed.[85] Questions over GMO safety would need to be substantiated according to the scientific basis for any risk concerns and would stand or fall on the risk assessments that can be produced in support of the potential for detrimental health or environmental impacts. Given the increasingly stringent approach that panels and the Appellate Body have adopted in recent case law construing the scientific evidence requirements of the SPS Agreement,[86] the precautionary tenor of much national and international regulation of biotechnology may make it particularly susceptible to WTO challenge.[87]

While the likely inclusion of GMO regulatory schemes within the ambit of the SPS Agreement is an important consequence of the Panel's findings in *EC-Biotech*, this is not the only potential implication of the broad approach taken to construing the scope of SPS measures. A widening area of operation for the SPS Agreement may also have ramifications for other areas of domestic environmental regulation, as well as international environmental agreements that overlap with the trade regime. At one and the same time, this could expose a broader array of *national* environmental measures to

[84] *EC-Biotech*, Panel report, para. 8.3.

[85] *Ibid.*, paras. 8.9, 8.10.

[86] Perez, *supra* note 19, at 136.

[87] Precaution has become particularly important in the biotechnology field due to the Biosafety Protocol's 'operationalization' of the principle in decision-making on GMO imports: see R. Mackenzie *et al.*, 'An Explanatory Guide to the Cartagena Protocol on Biosafety', *IUCN Environmental Policy and Law Paper No. 46* (2003), at 14.

SPS, science-based disciplines, while also encouraging *international* disagreements over such measures to be preferentially discussed and determined in fora of the WTO rather than under the auspices of multilateral environmental institutions and treaties.

## A *Extending the SPS Agreement to Domestic Environmental Regulations*

Beyond the GMO context, the Panel's interpretations of the SPS Agreement's Annex A definitions in *EC-Biotech* suggest the potential for other domestic environmental laws to become subject to SPS scrutiny and challenge in the future. If an environmental protection purpose, *per se*, is no longer a bar to SPS scrutiny and indirect or long-term risks may be covered, then it is possible to foresee application of the SPS Agreement to a range of environmental regulatory measures. For instance, controls on imported products are often put in place to protect against the introduction of species that are likely to become 'invasive' in a country's environment, threatening biodiversity by out-competing native species.[88] Conceivably, there is also scope to take the *EC-Biotech* Panel's analysis even further if it is accepted that 'measures taken to protect animal or plant life or health from risks that arise indirectly or in the longer-term from pests, diseases, disease-carrying or disease-causing organisms' fall within the ambit of the SPS Agreement.[89] For example, regulations designed to protect bio-diverse marine ecosystems from the adverse effects of pesticide run-off might become, on this analysis, a measure arising indirectly from the introduction of a pest through trade.

If the analytical trends intimated in the Panel's *EC-Biotech* rulings are pursued it would take the SPS Agreement into an entirely new territory of environmental risk management. The concern here is that this is quite a different field from the Agreement's traditional subject matter of quarantine or food safety risk and, moreover, one where regulatory approaches of a very different hue conventionally apply. In the last few decades, uncertainties regarding the nature and extent of impacts, especially over the longer term, have become a core concern of environmental regulation in many countries, reflected in the widespread adoption of structures for precautionary action and harm prevention.[90] A capacity for regulators to act in advance of conclusive scientific evidence demonstrating environmental damage is a feature of regulatory systems in place even in those countries which do not subscribe to international notions of the precautionary principle.[91] In

[88] Riley, 'Invasive Alien Species and the Protection of Biodiversity: The Role of Quarantine Laws in Resolving Inadequacies in the International Legal Regime', 17 *Journal of Environmental Law* (2005) 323.

[89] *EC-Biotech*, Panel report, para. 7.226.

[90] E. Fisher, J. Jones and R. von Schomberg (eds), *Implementing the Precautionary Principle* (2006, forthcoming) (copy on file with the author). See also, Fisher and Harding, 'The Precautionary Principle in Australia: From Aspiration to Practice?', in O'Riordan, Cameron and Jordan, *supra* note 15, 215; Abouchar, 'The Precautionary Principle in Canada: The First Decade', 32 *Environmental Law Reporter* (2002) 11407; de Sadeleer, 'The Precautionary Principle in EC Health and Environmental Law', 12 *ELJ* (2006)139.

[91] For example, the US, which denies the status of precaution as a 'principle' of general international law, has long allowed 'precautionary' regulatory action under its federal health and environmental legislation: see Weiner, 'Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems', 13 *Duke Journal of Comparative and International Law* (2003) 207.

addition, contemporary environmental regulatory systems in industrialized democracies tend to base risk decision-making on broad foundations, which extend beyond science and expert inputs to encompass public participation.[92] Conventional tools of impact assessment in the environmental field are thus not generally limited to science-based risk assessment, but seek to gather wide-ranging, contextualized information on the environmental effects of an activity and any associated socio-economic implications. However, when measured against an SPS benchmark – and particularly the Agreement's requirements for the scientific justification of measures and supporting risk assessments – environmental regulatory measures may be found wanting. Further, the more constrained notions of precaution developed under the SPS Agreement may need to be applied such that the 'insufficiency' of scientific evidence for expert risk assessment becomes the focus,[93] rather than areas of ignorance, problems of indeterminacy or indications of community concern over risk.[94]

At this point, the objection might be raised that the scope of the SPS Agreement is not only determined by a capacity to characterize the risk concerns addressed by a measure as 'SPS risks', but also by whether measures are ones 'which may, directly or indirectly, affect international trade'.[95] Are domestic environmental regulations, targeted to biodiversity or chemical pollution risks, ones that could be said to affect, directly or indirectly, international trade? At a theoretical level, this is certainly possible, especially given the degree of global economic integration brought about by the success of the trade liberalization project to date, and the pressures of global competition that may make even incidental trade effects significant. As David Driesen remarks, 'in a globally integrated world, most regulations . . . might be described as non-tariff trade barriers, since they burden commercial activity, much of which is international'.[96] Nevertheless, at the level of disputes coming before the WTO dispute settlement system it is generally the case that the trade impacts at issue must be substantial enough to attract the concern of groups of exporters with sufficient political clout to lobby their respective governments to initiate WTO challenges.[97]

A diminished likelihood of WTO disputes under the SPS Agreement being brought in respect of environmental regulations that incidentally impact trade is not necessarily the end of the matter. As the *EC-Biotech* case shows, a wider definition of the scope of 'SPS measures' allows the 'broader' elements of domestic regulatory schemes to be

[92] Rayner, 'Democracy in the Age of Assessment: Reflections on the Roles of Expertise and Democracy in Public-Sector Decision Making', 30 *Science and Public Policy* (2003) 163.

[93] See *Japan-Apples*, para. 179.

[94] For a discussion of such 'broader' sources of uncertainty in risk assessment see Wynne, 'Science and Social Responsibility', in J. Ansell and F. Wharton (eds), *Risk: Analysis, Assessment and Management* (1992) 137, at 141–142.

[95] SPS Agreement, Article 1.1.

[96] Driesen, 'What is Free Trade?: The Real Issue Lurking behind the Trade and Environment Debate', 41 *Virginia Journal of International Law* (2001) 279, at 283.

[97] Unlike some regimes for the protection of investors' rights, the WTO dispute settlement system remains one restricted to intergovernmental disputes: see Marrakesh Agreement Establishing the World Trade Organization, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995), Annex 2 (*Understanding on Rules and Procedures Governing the Settlement of Disputes*) 1869 UNTS 401.

targeted in an SPS dispute; for instance, not just approval processes addressed to the potential for GM products to act as environmental 'pests', but also the flow-on effects for natural ecosystems, waterways, and so on. In addition, even if not subject to an international trade challenge, the knowledge that environmental regulations could be called to account under the SPS disciplines has the potential to exercise a dampening effect on national regulatory practices considering the introduction, extension or revision of such measures. The review of regulations for their international legal compatibility and trade impacts prior to introduction is becoming a feature of 'due diligence' processes adopted by governments in a globalized regulatory environment.[98] If environmental regulations are treated as 'SPS measures' they would also be subject to the inter-governmental transparency requirements imposed by the SPS Agreement.[99] Indeed, some governments may see the potential for SPS scrutiny as a bargaining chip in domestic debates over the adoption of science-based versus more precautionary or participatory regulatory structures, providing a justification for the extension of processes of scientific justification and risk assessment beyond quarantine and food safety to the broader environmental arena. One further possibility suggested by the *EC-Biotech* Panel's expansive definition of 'SPS measures' is that it may strengthen arguments that different categories of environmental risks – some quarantine-focused, some biodiversity-focused – are in fact 'comparable' risks of the kind dealt with by Article 5.5 of the SPS Agreement. Pursuant to this provision, WTO Members, in the interests of regulatory 'consistency', are to avoid determining different levels of acceptable risk applicable in different risk-management situations where this could result in discrimination or a disguised restriction on international trade. By this means, acceptable risk levels determined according to SPS requirements for quarantine risks might also become a benchmark for regulation of other environmental risks.[100]

## B *Facilitating 'Fragmentation' of Trade and Environmental Regimes*

The implications of a broad ambit of operation for the SPS Agreement potentially extend to effects on international environmental regimes as well as domestic ones. At the global level, environmental risk concerns are increasingly difficult to separate from trade concerns, both because of the growing use of trade measures as a compliance tool in MEAs, and as a result of the amplification of WTO rules regarding NTBs stemming from domestic health or environmental measures.[101] Hence there now exists significant potential for conflict to arise between the requirements of the WTO regime and those of MEAs. In respect of the GATT (and most likely also the TBT Agreement),[102]

[98] See, e.g., Office of Regulation Review, *A Guide to Regulation* (2nd edn., 1998).

[99] SPS Agreement, Article 7 and Annex B.

[100] On the problems of comparing different kinds of SPS risks see Atik, 'The Weakest Link: Demonstrating the Inconsistency of "Appropriate Levels of Protection" in *Australia-Salmon*', 24 *Risk Analysis* (2004) 483.

[101] Esty, 'Economic Integration and Environmental Protection', in R. Axelrod, D. Downie and N. Vig (eds), *The Global Environment: Institutions, Law and Policy* (2005) 146.

[102] No cases considering the 'environmental' exceptions of the TBT Agreement have been decided to date, though its provisions are closer to those of GATT than the SPS Agreement.

concerns over possible conflicts with environmental treaties eased after the WTO Appellate Body's decision in the *Shrimp/Turtle* case, which contained a strong suggestion that trade-restrictive, multilaterally-endorsed environmental measures are unlikely to be found WTO-incompatible if challenged.[103] However, the relationship between the SPS Agreement and MEAs with which it may overlap remains a murky one, especially as the Appellate Body has declared that the precautionary principle – a virtual *leitmotif* of contemporary MEAs – cannot be relied upon to exempt WTO Members from their obligations under the SPS Agreement.[104] Expansion in the sphere of operation of the SPS Agreement thus has the potential to increase competition between the Agreement and relevant MEAs, and also to exercise a 'chilling effect' over negotiations for new MEAs or supplementary protocols that might overlap with the (extended) ambit of the SPS Agreement.[105]

Regime competition of this kind can be conceptualized as part of the broader phenomenon of 'fragmentation' in international law.[106] The fear is that such competition will facilitate the development of 'self-contained' regimes, attendant only to their own internal concerns and lacking regard for the broader coherence of international law.[107] In a recent study undertaken under the auspices of the International Law Commission (ILC), it was argued that treaty interpretation rules provide a 'professional toolbox' for managing global legal fragmentation by requiring decision-makers considering claims under one treaty regime to situate those claims in the wider 'normative environment' of international law.[108] In its report, the ILC study group criticized the *EC-Biotech* Panel decision for rejecting the relevance of other treaties, such as the Biosafety Protocol, to the interpretation of provisions of the SPS Agreement. The Panel found that it would only be obliged to refer to non-WTO law in interpretation where the rules of international law concerned were ones 'applicable in the relations between the WTO Members'.[109] The result of the *EC-Biotech* Panel's approach, according to the ILC study group, 'would be the isolation of multilateral agreements as "islands" permitting no references *inter se* in their application', something which it believed to be 'contrary to the legislative ethos behind most of multilateral treaty-making and, presumably, with the intent of treaty-makers'.[110]

Yet even if decision-makers in the WTO regime can be persuaded to adopt principles of 'systemic integration' in their consideration and application of the SPS

[103] For a discussion of this view see Knox, 'The Judicial Resolution of Conflicts between Trade and the Environment', 28 *Harvard Environmental Law Review* (2004) 1.

[104] *EC-Hormones*, para. 124.

[105] See Eckersley, 'The Big Chill: The WTO and Multilateral Environmental Agreements', 4 *Global Environmental Politics* (2004) 24.

[106] M. Koskenniemi, 'Global Legal Pluralism: Multiple Regimes and Multiple Modes of Thought', available at http://www.valt.helsinki.fi/blogs/eci/post82.htm, 2005, at 6–7.

[107] See, particularly, Pauwelyn, *supra* note 16.

[108] Koskenniemi, *supra* note 16.

[109] *EC-Biotech*, Panel report, para. 7.68.

[110] Koskenniemi, *supra* note 16, at 200.

Agreement,[111] this is unlikely to head off all conflicts between the Agreement and overlapping MEAs. For instance, parties to a particular dispute decided under the SPS Agreement may not all be parties to a competing MEA (as was the case for the Biosafety Protocol in the *EC-Biotech* dispute).[112] Indeed, the WTO Member that has most aggressively pursued claims under the SPS Agreement to date – the US – stands outside a number of major MEAs that address SPS risk-type concerns (a category of agreements that only expands if a broader understanding of the scope of 'SPS measures' is adopted).[113] Further, even where countries have obligations under both trade and environmental regimes, these regimes do not exist on an equal footing in international law. As Robyn Eckersley has observed, compared with the global trade regime, most MEAs 'provide a more fragmented form of governance that lacks the coherence, reach, financial backing and organizational structure of the WTO'.[114] When the compulsory jurisdiction of the WTO dispute settlement system (a feature lacking in the vast majority of MEAs)[115] is added to the mix, powerful incentives are created for disputed health or environmental regulations to be preferentially raised within the institutional structures of the trade regime. These incentives are only enhanced where complainants have a greater opportunity to frame their claims as ones about 'SPS measures', so attracting to the measures the application of the more stringent requirements of the SPS Agreement.

## 5 Conclusion

While the nature of 'SPS measures' covered by the WTO SPS Agreement is only one small aspect of the very lengthy rulings of the Panel in the *EC-Biotech* case, they are findings which have the potential to leave a large imprint on environmental regulation, both at the domestic and international level. The Panel's report was publicly released on 29 September 2006 and it is uncertain at this stage whether the parties involved will take an appeal to the WTO Appellate Body.[116] If one or more were to do so, legal issues of interpretation raised by the Panel's construction of the definitions in Annex A of the SPS Agreement could well be aired before the Appellate Body. Faced with controversial SPS disputes in the past, such as *EC-Hormones*, the Appellate Body has displayed considerable 'political astuteness',[117] which, if applied in *EC-Biotech*, might see some of the broader aspects of the Panel's findings regarding SPS measures

[111] Such principles are derived particularly from Article 31(3)(c) of the Vienna Convention on the Law of Treaties, opened for signature 23 May 1969, 1155 UNTS 332 (entered into force 27 Jan. 1980). For an explanation of the role of 'systemic integration' in combating international legal fragmentation see McLachlan, *supra* note 16.

[112] Of the parties to the *EC-Biotech* dispute, only the EC is a party to the Biosafety Protocol, although both Argentina and Canada are signatories.

[113] Eckersley, *supra* note 105, at 38–39.

[114] *Ibid.*, at 24.

[115] *Ibid.*, at 36.

[116] ICTSD, 'Biotech Panel Calls on EU to Conform with WTO Rules' 6(17) *Bridges Trade BioRes*, 6 Oct. 2006, http://www.ictsd.org/biores/06-10-06/story1.htm (accessed at 12 Oct. 2006).

[117] Victor, *supra* note 33, at 936.

overturned or toned down. Nonetheless, the Panel's interpretations of the definitions in Annex A of the SPS Agreement – based as they are on a rigid adherence to the literal, dictionary-based meaning of terms construed without reference to the wider socio-political context – is not such a radical departure from interpretative practices adopted by the Appellate Body itself, including in other SPS disputes.[118]

In some ways, the notions of SPS risk developed by the Panel in *EC-Biotech* could be said to be quite progressive in that there is an increasing trend in the field of environmental regulation to consider risk pathways in a holistic fashion, embracing both the direct and indirect impacts of activities. However, applying such a broad approach to the risks covered by the SPS Agreement has the potential not only to upset conventional understandings regarding its scope of operation, but also to expose precautionary environmental regulations to the harsher glare of science-based SPS scrutiny. Actual WTO challenges may be reserved for those measures that have the most severe adverse effects on international trade. Yet, even potential SPS coverage of environmental regulations with incidental trade impacts may be enough to discourage use (or expansion) of precautionary regulatory methods in some areas of environmental concern, or to shift issues from discussion and consideration in MEA fora to trade-related ones.

Of course, it may also be that the Panel's broad interpretation of the scope of the SPS Agreement in *EC-Biotech* is a symptom, not a cause of greater emphasis being placed upon the need for firm scientific underpinnings to health and environmental regulation. It was, after all, the EC through its regulatory scheme that constructed GMO concerns primarily as a matter of health and environmental risk, susceptible to 'objective' scientific analysis and risk assessment. This way of framing debates over issues of health and environmental concern is consistent with efforts by Western governments more generally to represent technological disputes as issues solely of scientifically-assessed risk, rather than recognizing broader questions and concerns.[119] The latter – voiced in different contexts by non-governmental organizations, developing countries and the public – often emphasize the social, economic and ethical dimensions of technological risk, yet are frequently marginalized in regulatory systems that privilege matters of scientific 'fact' over questions of 'value'.[120] Ironically, the Panel's decision in *EC-Biotech* may serve to increase the prominence of such alternative discourses on GMO and other environmental risks by reason of the fact that they are less able to be subsumed within the kind of wide-ranging, textually-focused reading of the WTO SPS Agreement advanced by the Panel.

[118] See, particularly, *Japan-Varietals* and *Australia – Measures Affecting Importation of Salmon*, Report of the WTO Appellate Body, WT/DS18/AB/R, 20 Oct. 1998.

[119] Andrée, 'The Cartagena Protocol on Biosafety and Shifts in the Discourse of Precaution', 5 *Global Environmental Politics* (2005) 25.

[120] Levidow and Carr, 'How Biotechnology Regulation Sets a Risk/Ethics Boundary', 14 *Agriculture and Human Values* (1997) 29; Gupta, 'Advanced Informed Agreement: A Shared Basis for Governing Trade in Genetically Modified Organisms', 9 *Indiana Journal of Global Legal Studies* (2001) 265; Wynne, *supra* note 49.