SHORTER ARTICLES, COMMENTS AND NOTES

INTERNATIONAL TRADE IN LIVING MODIFIED ORGANISMS: THE NEW REGIMES*

I. INTRODUCTION

NEW technologies bring new problems as well as benefits. New technologies also involve unknown dangers and fears. So it is with biotechnology and living modified organisms (LMOs).

Living modified organisms, also called genetically modified organisms (or GMOs), are living organisms that contain novel combinations of genetic material as a result of the application of biotechnology. Thus far the principle introduction of LMOs has been in agriculture. Dozens of agricultural biotechnology products are on the market and more are on the way.[1] Over 30 varieties of biotech crops have been approved for sale in the U.S., and U.S. and Canadian farmers planted 81 million acres of bioengineered seed in 1999, which accounted for 47 percent of the US soybean harvest and 37 percent of the US corn crop.[2] Virtually every processed food sold in the US today contains LMOs of some kind.[3]

Of course, the manipulation of genetic traits of agricultural plants is not new. Natural selection and breeding techniques have long been used to develop favourable plant varieties. What is new is that through genetic bioengineering desirable traits can now be directly implanted from genes derived from totally different varieties of living organisms.

So far the purpose of most genetic alterations has been to enhance traits useful in the production or marketing of foods. Examples are tolerance of weed-killing herbicides, resistance to insects, improvement in taste, colour and lengthened shelf-life. However, a new generation of LMOs could provide medical or nutritional benefits to consumers, such as foods with less saturated fat and more vitamin and nutritional value. LMOs could also benefit the environment by allowing greater production per acre, freeing rural lands for parks, natural areas and green space, and reducing the need for environmentally destructive pesticides and chemical fertilizers. Thus, we may be at the dawn of an agricultural revolution that will benefit society.

Nevertheless, controversy over LMOs is increasing. Criticism began in Europe, where food safety was an important issue because of several unrelated incidents,

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1. See "To Plant or not to Plant", *The Economist*, 15 Jan. 2000, p.30.

2. Source: Biotechnology Industry Association, Washington D.C. as reported by *USA Today*, 13 Jan. 2000, p.1.

3. "Sticky Labels", *The Economist*, 1 May 1999, pp.75–76. In the United States, three governmental agencies regulate the introduction of genetically-modified plants and foods: the U.S. Department of Agriculture has responsibility for protecting plants and American agriculture under the Federal Plant Pest Act, 7 U.S.C. ss.150aa–190jj; the Food and Drug Administration regulates novel foods under the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. ss.301–395; and the US Environmental Protection Agency regulates genetic techniques to develop plants that produce their own pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. ss.136–136y.

such as bovine spongiform encephalopathy ("mad cow disease") that resulted in an EC ban on imports of beef from Britain and the chicken-dioxin problem in Belgium in 1999. Recently, unease over LMOs has spread to the United States and other countries.

Critics make several points: first, although there is no scientific evidence of any danger to consumers of genetically modified foods, some urge caution and demand that GM foods be labelled or marketed separately. Second, environmental groups argue that LMOs may pose a danger for the environment if LMO plants invade native ecosystems; cross-pollinate with native plants; or prove toxic to native species of animals, birds or butterflies. Again, there is little evidence of this apart from a study on monarch butterflies[4] and a flawed British study over the effects of GM potatoes on experimental animals.[5] Third, critics argue that widespread LMO technology in agriculture will benefit a few large multinational companies and allow them to establish a global cartel to the detriment of the world's consumers and farmers. An antitrust suit has already been filed on this ground in the United States.[6] In developing countries critics argue that using GM seeds will disrupt traditional farming practices and raise costs to farmers.[7] Thus the issue of LMOs raises serious health, environmental, economic and social issues, but the nature and extent of these problems are ill-defined.[8]

While LMOs obviously pose a great many legal and political issues, the focus of this paper is on the regulation of LMOs in international trade. Two international agreements now regulate LMO/GMOs. The first, the Agreement on the Application of Sanitary and Phytosanitary measures (SPS Agreement)[9] which was negotiated at the World Trade Organization (WTO) at the conclusion of the Uruguay Round in 1994, covers measures restricting international trade in LMOs for the purpose of protecting human, animal and plant health and safety. The second, the Cartagena Protocol on Biosafety[10] of 29 January 2000, is a broader agreement that governs the transboundary movement of most bioengineered

4. An entomological study indicated that monarch butterfly caterpillars could be killed by pollen from GM corn crops planted in the vicinity of the milkweed plants on which the caterpillars feed. This conclusion was debated at a Monarch Butterfly Research Symposium hosted by the U.S. Environmental Protection Agency in Chicago, 2 Nov. 1999. Peer reviewers minimised the problem, but research is continuing on possible "sub-lethal" effects on caterpillars, 22 *Int'l Envt. Rptr*, (BNA) 822 (Current Developments, 10 Nov. 1999).

5. A study carried out in the United Kingdom which concluded that GM potatoes have negative impacts on the health of rats was criticised by scientists as "half-baked" and "hopelessly confused" because of procedural flaws. *The Economist*, 16 October 1999, p.85.

6. The case is *Bruce Pickett, et al.* v. *Monsanto Co.*, Case No. 1: 99CV03337 (Antitrust), United States District Court for the District of Columbia.

7. Susan Boensch Meyer, "Genetically Modified Organisms" *YB Colo. J. Int'l Envt. L. & Pol'y* 102, 111 (1998).

8. For perhaps the most comprehensive review to date of the issues and problems as well as recommendations for future research, see *Genetically Modified Pest-Protected Plants: Science and Regulation* (U.S. National Academy of Sciences, 2000).

9. Legal Texts of the Uruguay Round 69 (WTO, 1994).

10. Conference of the Parties to the Convention on Biological Diversity, First Extraordinary Meeting, Montreal, 24–28 Jan. 2000, Draft Final Text.

products. The two international regimes overlap to some extent, and this sows the seeds of future problems.[11]

II. AGREEMENT ON THE APPLICATION OF SANITARY AND PHYTOSANITARY MEASURES

THE SPS Agreement is based on a provision of the 1947 General Agreement on Tariffs and Trade (GATT),[12] which contains a "general exception" for measures to protect human, plant, or animal health and safety.[13] Article 2 of the SPS Agreement sets out two relevant "basic rights and obligations":

> 2. Members shall ensure that any sanitary and phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence, except as provided for in paragraph 7 of Article 5.
> 3. Members shall ensure that their sanitary and phytosanitary measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail, including between their own territory and that of other Members. Sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade.

Article 3 of the SPS Agreement sets out a further obligation on WTO members to engage in a process to *harmonise* their phytosanitary measures "on as wide a basis as possible", in conformance with or based upon international standards.[14] However, higher-level national standards may be employed "if there is a scientific justification or as a consequence of the level of ... protection a Member determines to be appropriate in accordance with ... Article 5 [of the Agreement]." Article 5, in turn, requires that Members undertake a "risk assessment", taking "into account economic factors," when adopting national standards.[15] Members must also minimise "negative trade effects"[16] and avoid "arbitrary or unjustifiable" discrimination and "disguised restrictions on international trade".[17] Measures also cannot be more trade restrictive than required to achieve their objectives.[18]

In cases where scientific evidence is insufficient, provisional restrictions may be adopted, but the information needed for a more objective assessment of risk must be obtained "within a reasonable period of time".[19]

11. This was duly predicted by John H. Barton, "Biotechnology, the Environment, and International Agricultural Trade", 9 *Geo. Int'l Envt'l L. Rev.* 95, 112–115 (1996).
12. 30 Oct. 1947, TIAS No. 1700, 55 UNTS 188. As a result of the Uruguay Round of trade negotiations, this was repromulgated as "GATT 1994". Legal Texts, *supra* at 481.
13. GATT, Article XX(b). This is specifically referred to by the SPS Agreement, Article 2:4.
14. SPS Agreement, Arts.3.1 and 3.2.
15. *Id.* Art.5.1–5.3.
16. *Id.* Art.5.4.
17. *Id.* Art.5.5
18. *Id.* Art.5.6.
19. *Id.* Art.5.7.

These provisions were first interpreted in the WTO decision on *Hormones*.[20] In ruling against the EC/EU import ban on hormone-fed beef, the WTO Appellate Body made a number of points:

1. In a case where a WTO member seeks to enforce an SPS measure that differs from international norms, it has the burden of justifying such a measure after a complaining member has made a *prima facie* case of violation of a provision of the SPS Agreement.[21]
2. A WTO panel is entitled to review a national measure on the basis of an "objective assessment of the facts of the case and the applicability of and conformity with the relevant agreements".[22]
3. It is "less than clear" that the precautionary principle is a principle of general or customary international law, and this cannot, in any case, override the provisions of the SPS Agreement.[23]
4. Where a WTO member exercises its right under Article 3.3 of the SPS Agreement to set its own level of SPS protection, it must have "sufficient scientific evidence" gathered as a result of a "risk assessment" required under SPS Article 5.[24]

The key interpretative problem in the *Hormones* case involved Article 3.3, which ambiguously provides as follows:

> Members may introduce or maintain sanitary or phytosanitary measures which result in a higher level of sanitary or phytosanitary protection than would be achieved by measures based on the relevant international standards, guidelines or recommendations, if there is a scientific justification, or as a consequence of the level of sanitary or phytosanitary protection a Member determines to be appropriate in accordance with the relevant provisions of paragraphs 1 through 8 of Article 5. Notwithstanding the above, all measures which result in a level of sanitary or phytosanitary protection different from that which would be achieved by measures based on international standards, guidelines or recommendations shall not be inconsistent with any other provision of this Agreement.

The European Community argued that the "or" clause allows national standards for which there is simply "a scientific justification" that satisfies Article 2.2 without a risk assessment meeting the standards of Article 5.[25] The Appellate Body rejected this argument, citing the "notwithstanding" clause to mean that all higher protection measures must meet the standards of Article 5.[26] This effectively transforms the "or" in Article 3.3 into an "and".

In a subsequent decision under the SPS Agreement, the WTO Appellate Body clarified some of the key concepts of Article 5. The occasion was review of an

20. European Communities, Measures Concerning Meat and Meat Products, WTO Doc. WT/DS 26/AB/R & WT/DS48/AB/R (World Trade Organization Appellate Body, 16 Jan. 16, 1998). ("*Hormones*").
21. *Id.*, para.109.
22. *Id.*, paras.118–119.
23. *Id.*, paras.123–125.
24. *Id.*, para.177.
25. *Id.*, para.174.
26. *Id.*, paras.175–176.

import prohibition taken by Australia on fresh, chilled, and frozen salmon.[27] The Appellate Body ruled that the import measures in question did not comply with Article 5 and, by implication, with the standards of Article 2 of the SPS Agreement.

In particular, the Appellate Body addressed three important points. First, it developed the standards for risk assessment under Article 5.1:

> [W]e consider that, in this case, a risk assessment within the meaning of Article 5. 1 must:
> (1) *identify* the diseases whose entry, establishment or spread a Member wants to prevent within its territory, as well as the potential biological and economic consequence associated with the entry, establishment or spread of these diseases;
> (2) *evaluate the likelihood* of entry, establishment or spread of these diseases according to the SPS measures which might be applied.

The Appellate Body faulted Australia for failing to meet the standard for a risk assessment, specifically by inadequately assessing the biological and economic consequences of potential diseases as well as inadequately evaluating the effectiveness of the import measures in reducing these risks.[28]

Secondly, the import measures undertaken by Australia were held to be arbitrary, unjustifiable, and disguised restrictions on international trade in violation of Article 5.5 because the import bans were levied only against ocean-caught Pacific salmon, while other imported fish not banned carried similar risks of diseases.[29]

Third, the Appellate Body set out its interpretation of Article 5.6 of the SPS Agreement:

> 194. We agree with the Panel that Article 5.6 and, in particular, the footnote to this provision, clearly provides a three-pronged test to establish a violation of Article 5.6. As already noted, the three elements of this test under Article 5.6 are that there is an SPS measure which:
> (1) is reasonably available taking into account technical and economic feasibility;
> (2) achieves the Member's appropriate level of sanitary or phytosanitary protection; and
> (3) is significantly less restrictive to trade than the SPS measure contested.

The Appellate Body found that it was not in a position to evaluate whether there was another measure that achieves the same level of sanitary protection.[30] However, the import ban could not be maintained in the face of an inadequate risk assessment and the arbitrary and unjustifiable discrimination involved.

27. Australia—Measures Affecting Importation of Salmon, WTO Doc. WT/DS18/AB/R (World Trade Organization Appellate Body, 6 Nov. 1998). A similar case was decided by a WTO Dispute Settlement Panel, which ruled that Japan violated Articles 2.2 and 5.6 of the SPS Agreement by maintaining phytosanitary measures without sufficient scientific evidence and failing to ensure that they were not more trade restrictive than necessary. Japan also breached its duty of transparency under paragraph 1 of Annex B and Article 7 of the SPS Agreement. Japan Measures Affecting Agricultural Products, WTO Doc. WT/DS76/R (World Trade Organization Panel Report, 27 Oct. 1998).

28. *Id.*, paras.128–138.

29. *Id.*, paras.141–178.

30. *Id.*, para.211.

III. THE CARTAGENA BIOSAFETY PROTOCOL

THE Cartagena Biosafety Protocol (BSP) effectively covers ground already addressed by the WTO in the SPS Agreement. However, it attempts a reconciliation with this Agreement by stating that rights and obligations under other international agreements are preserved.[31] However, the Protocol is not to be subordinated to the SPS Agreement.[32] This will make it difficult to resolve the inevitable conflicts between the two agreements.

Importantly, the Biosafety Protocol sets up a Clearing-House, which is intended to be a means of sharing information on all aspects of international information on biotechnology.[33] This will include information on national laws and regulations, international agreements, importation decisions, and risk assessments or environmental reviews. This Clearing-House will be an important institution that will allow harmonisation of risk assessment and management techniques and will be a source of transparency to dispel myths about the dangers of GM products.

The Biosafety Protocol divides LMOs into two groups for the purpose of international regulatory action. First, the transboundary movements of living modified organisms (LMOs) are subject to an "Advance Informed Agreement" procedure under which the transboundary movement may proceed only after advance written consent by the competent national authority of the putative importing State.[34] The Advance Informed Agreement procedure (AIA procedure) involves several steps: (1) notification by the party of export;[35] (2) acknowledgment of receipt of notification by the party of import;[36] (3) a decision procedure;[37] and (4) possible review of decisions in the light of new scientific information. Decisions regarding importation must be made using scientifically sound risk assessment procedures and recognised risk assessment techniques.[38] Importantly, however, lack of scientific certainty due to insufficient scientific evidence can be resolved in favour of banning importation.[39] Risk management techniques also may be used by the importing State.[40]

There are several exceptions to the AIA Procedure: (1) pharmaceuticals;[41] (2) transit LMOs;[42] (3) contained-use LMOs;[43] and (4) LMOs "intended for direct use as food, feed, or for processing".[44] In addition, the Conference of the Parties may exempt other LMOs from the AIA Procedure.[45]

31. Biosafety Protocol, Preamble.
32. *Id.*
33. *Id.*, Art.20.
34. *Id.*, Art.10.
35. *Id.*, Art.8.
36. *Id.*, Art.9.
37. *Id.*, Art.10.
38. *Id.*, Art.15.
39. *Id.*, Art.10.6
40. *Id.*, Art.16.
41. *Id.*, Art.5
42. *Id.*, Art.6.
43. *Id.*
44. *Id.*, Art.7.1–7.2.
45. *Id.*, Art.7.4.

LMOs intended for direct use as food, feed, or for processing are subject to a less rigorous regulatory regime. This is appropriate because most such LMOs are also subject to the WTO's SPS Agreement. Food, feed and processed LMOs (FFP-LMOs) are not subject to the AIA Procedure, but a party may make a decision to ban or limit imports of FFP-LMOs under its "domestic regulatory framework" as long as it is "consistent with the objective of the [Biosafety] Protocol".[46]

Obviously, this opens the door to import regulation, subject to the international discipline of the WTO's SPS Agreement. Thus, it may not be difficult to harmonise the BSP with the SPS Agreement except for one important point. The BSP explicitly adopts the precautionary principle for the regulation of FFP-LMOs, allowing import regulation even in the face of "lack of scientific certainty due to insufficient scientific information".[47] This undoubtedly will result in future conflict with the SPS Agreement, which allows the precautionary principle only for preliminary regulatory decisions.[48]

The BSP also breaks new ground compared with the SPS Agreement in subjecting LMOs to international standards regarding transport, packaging, and labelling.[49] FFP-LMOs, in particular, are subject to labelling and identification in three respects: (1) that they "may contain" LMOs, (2) that they are not intended for intentional introduction into the environment, and (3) that they specify a contact for further information.[50]

The BSP also envisages the development of a standard international labelling system. LMOs intended for introduction into the environment are subject to a different labelling regime that identifies them as LMOs, specifies their identity and relevant traits, requirements for safe handling, storage, transport and use, a contact point for further information, the name of the exporter, and a declaration of compliance with regulatory requirements.

Additional provisions of the BSP require notification of any international transboundary movement of an LMO[51] and prevention of illegal transboundary movements.[52] The Secretariat and Conference of the Parties, and the financial mechanism of the Convention on Biological Diversity also serve the BSP.[53] Provision is made for monitoring, reporting, and the assessment and review of compliance.[54] The important matter of liability and redress for damages is left for future consideration, but the parties "shall endeavor to complete this process within four years".[55] The BSP will enter into force 90 days after the 50th ratification is received.[56]

46. *Id.*, Art.11.
47. *Id.*, Art.11.8.
48. See discussion accompanying notes 53–56, *infra.*
49. *Id.*, Art.18.
50. *Id.*, Art.18(b).
51. *Id.*, Art.17.
52. *Id.*, Art.25.
53. *Id.*, Arts.28–31.
54. *Id.*, Arts.33–35.
55. *Id.*, Art.27.
56. *Id.*, Art.37.

IV. EVALUATION AND SYNTHESIS

CAN these two agreements be reconciled? Who will decide the inevitable conflicts and disputes? Are these two international regimes reasonable and workable?

The best way of reconciling and synthesising the two agreements is to read them together as setting up two distinctly different procedures for regulation in international trade.

On the one hand are LMOs intended for direct use as food, feed, or for processing. These are largely exempt from the BSP and are left to the discipline of the SPS Agreement. As such FFP-LMOs can be sold in international trade without advance informed agreement, and any restrictions on trade will have to meet all the requirements of the SPS Agreement, most importantly scientific justification as the result of a risk assessment. Trade restrictions also cannot involve arbitrary or unjustifiable distinctions or a disguised restriction on international trade.

On the other hand, the transboundary movement of non-FFP-LMOs (with minor exceptions), in particular those intended for introduction into the environment, are subject to a much stricter international regulatory regime, the Advance Informed Agreement procedure of the BSP. This ensures that international trade in such LMOs will not take place absent the written consent of the country of import. This AIA procedure requires a risk assessment under the BSP, but the precautionary principle applies.

FFP-LMOs are not subject to the risk assessment requirements of the BSP or the AIA Procedures. Nevertheless, FFP-LMOs must meet BSP standards in three key respects. First, information concerning regulatory matters and risk assessments must be transmitted to the Biosafety Clearing House.[57] This is a needed reform that should not pose any problems. Second, FFP-LMOs must comply with the BSP provisions on handling, transport, packaging and identification.[58] Most notably this involves development of an international labelling regime.[59] Again, this should not pose any problems. The development of international labelling requirements is much preferable to having to comply with a large variety of national labelling requirements. Moreover, the weak "may contain" labelling requirement will not necessitate the segregation of GMO foods; GMOs can continue to be combined with non-GMO foods as is now the case.

The third and by far most important point which the BSP adds to regulation of FFP-LMOs under the SPS Agreement is the language of BSP Article 11.8 which states as follows:

> 8. Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, taking also into account risks to human health, shall not prevent that Party from taking a decision, as appropriate, with regard to the import of that living modified organism intended for direct use as food or feed, or for processing in order to avoid or minimize such potential adverse effects.

57. BSP, Arts.11 and 20.
58. *Id.*, Art.18.
59. *Id.*, Art.18.2(a).

This provision is a statement of the precautionary principle as a method of dealing with scientific uncertainty.[60] Under the BSP, it is fully applicable to national trade restrictions involving FFP-LMOs. *In effect, therefore, Article 11.8 injects the precautionary principle into the SPS Agreement.* This effectively reverses the finding of the WTO Appellate Body in the *Hormones* case that the precautionary principle is not yet customary international law capable of overriding the specific provisions of the SPS Agreement.

The key question is, therefore, although the *Hormones* case itself will be unaffected by the BSP, since hormone-fed beef is not an LMO, will an import ban of a GM food be upheld without sufficient scientific evidence as required by the Appellate Body in the *Hormones* case? The answer to this question depends on several factors. .

First, does Article 11.8 extend the precautionary principle to human health? The wording is clumsy: "adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the party of import, taking into account risks to human health". Clearly this applies the precautionary principle to biological diversity, but it is less direct regarding human health concerns. Yet it would be extraordinary to interpret Article 11.8 as protecting only animal and plant health and welfare. Surely the phrase "taking into account" is intended to allow the precautionary principle to be applied to human health as well.

Second, what is the relationship between the two treaties? This is addressed in the Preamble to the BSP as follows:

> *Emphasizing* that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements.
> *Understanding* that the above recital is not intended to subordinate this Protocol to other international agreements.

These two statements appear to cancel one another out to some degree. The matter may be resolved with reference to the Vienna Convention on the Law of Treaties.[61] Article 30 on the application of successive treaties relating to the same subject matter[62] would not seem to apply in the light of the Preamble, which clearly intends both Agreements to be regarded on the same level; neither is intended to be superior to the other. Thus, the applicable rule of interpretation would be Article 31.3 of the Vienna Convention, which provides that "There shall

60. The "precautionary principle" appears in a number of international documents and agreements, but has never been definitively codified, and scholars differ in the content and whether it is an emerging norm of international law. A version of the precautionary principle was adopted as Principle 15 of the Rio Declaration on Environment and Development, a non-binding declaration adopted in 1992. See Edith Brown Weiss, Stephen C. McCaffrey, Daniel B. McGraw, Paul C. Szasz and Robert E. Lutz, *International Environmental Law and Policy* 127–135 (1998).

61. U.N. Doc. A/Conf. 39/27 (1969), 8 I.L.M.679 (1969). Done in Vienna on 23 May 1969, entered into force on 27 Jan. 1980.

62. Article 30 reads as follows in relevant part: "2. When a treaty specifies that it is subject to, or that it is not to be considered as incompatible with, an earlier or later treaty, the provisions of that other treaty will prevail. 3. When all parties to the earlier treaty are parties also to the later treaty but the earlier treaty is not terminated or suspended in operation under article 59, the earlier treaty applies only to the extent that its provisions are compatible with those of the later treaty."

be taken into account, together with the context, any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions".

The application of this rule of interpretation would appear to mean that the statement of the precautionary principle in the BSP Article 11.8 is intended to supplement the risk assessment requirements of the SPS Agreement. This interpretation is the only one that gives maximum effect to both the BSP and SPS agreements so that neither cancels out the other. This interpretation, however, has a great impact: it potentially reverses the Appellate Body's reasoning in the *Hormones* case. Specifically, it would seem to allow import restrictions on GM food in the face of insufficient scientific evidence as long as a risk assessment was carried out using available scientific evidence and areas of scientific uncertainty were identified and addressed.

Another point of interpretation arising out of the overlap of the two agreements has to do with the fact that, literally speaking, LMOs in international trade may soon be subject to a dual barrier approach. This is because the SPS Agreement defines SPS measures broadly to include all legal requirements and procedures applied to protect human, animal or plant life and health.[63] This would include measures passed to implement the AIA procedure of the BSP with respect to LMOs. Thus, it could be argued that trade restrictions represented by the AIA procedures are also subject to the SPS Agreement, which has stricter risk assessment standards. However, this would be clearly duplicative and could not have been intended by the drafters of the BSP despite the Preamble savings-clause language.

Still another point of conflict between the BSP and SPS Agreements will come to the fore when mandatory labelling for GM foods is developed. This is permissible under the "may contain" standard agreed in the BSP. However, mandatory labels as a food safety measure would be subject to the "scientific principles" and "sufficient scientific evidence" standards of the SPS Agreement.[64]

Who will decide these questions and other interpretative disputes over the two agreements? The BSP has no dispute settlement provision but refers to the mechanisms of the Convention on Biological Diversity.[65] Under Article 27 of the

63. See the definition in Annex A of the SPS Agreement.

64. SPS Agreement, Annex A, Definition 1. See the discussion in Sara Pardo Quintillan, Free Trade, Public Health Protection and Consumer Information in the European and WTO Context, 33 *J. World Trade* 147, 171–172, and 190–191 (1999).

65. BSP, Art.34.

CBD, dispute settlement is largely optional.[66] Thus, disputes over these two regimes is likely to be resolved through the WTO dispute settlement mechanism.

V. CONCLUSION

THE international regimes agreed upon to regulate trade in living modified organisms are in many respects a reasonable compromise to solve difficult issues and to resolve a key conflict in the trade and environment debate. Although there is to date no credible scientific evidence that LMOs pose a danger either to human health or the environment,[67] there is profound political and public concern in many quarters. The key legal issue in this debate is the extent to which the precautionary principle should be applied. Unfortunately, the BSP and SPS Agreements contradict each other on this point. This will lead to future conflicts. Hopefully, these questions can be worked out in the future.

It is preferable to resolve these potential conflicts by negotiation rather than litigation. These questions are currently being discussed at meetings of the Codex Alimentarius Commission, a food safety body that was jointly established by the Food and Agriculture Organization. This body is now considering the adoption of standards for foods derived from biotechnology, which would become international standards under the WTO's SPS Agreement. So far the negotiations are deadlocked over the question of the appropriate wording of a precautionary approach.[68] Hopefully, the negotiations can agree on a version of the precautionary principle that would supplement but not override the SPS Agreement. Precaution, labelling and public information, rather than import bans, are the best methods of dealing with biotechnology trade issues.

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66. Article 27 provides as follows:

> 1. In the event of a dispute between Contracting Parties concerning the interpretation or application of this Convention, the parties concerned shall seek solution by negotiation.
> 2. If the parties concerned cannot reach agreement by negotiation, they may jointly seek the good offices of, or request mediation by, a third party.
> 3. When ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a State or regional economic integration organization may declare in writing to the Depositary that for a dispute not resolved in accordance with paragraph 1 or paragraph 2 above, it accepts one or both of the following means of dispute settlement as compulsory:
>
> (a) Arbitration in accordance with the procedure laid down in Part 1 of Annex II;
>
> (b) Submission of the dispute to the International Court of Justice.
>
> 4. If the parties to the dispute have not, in accordance with paragraph 3 above, accepted the same or any procedure, the dispute shall be submitted to conciliation in accordance with Part 2 of Annex II unless the parties otherwise agree.
> 5. The provisions of this Article shall apply with respect to any protocol except as otherwise provided in the protocol concerned.

67. See the Report of the U.S. Academy of Sciences, *supra* note 10, at 6.

68. For details, see "U.S. Split on Approach to Precautionary Principle in Codex", Inside U.S. Trade, Vol.28, No.7, p.1 (April 28, 2000).

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