

SUMMARY OF ARGUMENTS AND CONCLUSIONS

The precautionary principle is a red rag in international trade relations. Originally developed in environmental law, it was invoked by the European Communities in several trade conflicts arising from hormone-treated beef or genetically modified organisms (GMOs). Agricultural exporters fiercely protest against this "phony concept" and the United States and Canada maintain that no internationally agreed definition of a precautionary principle exists but, at best, a precautionary "approach" which varies from context to context. The Appellate Body pointed to the crux of the precautionary principle in international trade relations when holding that "at least outside the field of international environmental law, [it] still awaits authoritative formulation". The lack of a clear definition invites suspicions that the principle might be abused for protectionist purposes. Moreover, the Appellate Body emphasized that WTO law has its own specific filter to deal with scientific uncertainty in Article 5.7 of the *Uruguay Round Agreement on the Application of Sanitary and Phytosanitary Measures* (the "SPS Agreement"), in which the precautionary principle "finds reflection". The negotiations of the *Cartagena Protocol on Biosafety* (the "Cartagena Protocol") and the *Draft Codex Working Principles for Risk Analysis* (the "Codex Principles") put the spotlight on the links between the precautionary principles contained therein and the *SPS Agreement*.

This thesis has analyzed the key legal issues arising from the precautionary principle in WTO law. Below are all findings and conclusions of my thesis, as developed in the course of my analysis.

1. The precautionary principle is enshrined in several continental European legal orders. A closer look at the roots of the precautionary principle in German law shows that it emanates from protective duties of the government. It marks the point at which a risk becomes unacceptable and justifies interference with markets. While, e.g., the United States, use a "catch-all" concept of risk, the legal term precaution (*Vorsorge*) was developed to delineate, on a spectrum of different degrees of risk, an

acceptable risk from a merely residual risk. The precautionary principle itself is not defined in German statutory law, but courts have carved out triggering factors, i.e. a remote possibility of risk, even if only supported by minority opinions, and limiting factors, including the principle of proportionality. Apart from India, most common law jurisdictions have not articulated a precautionary principle. However, comparative analyses have concluded that most of them, e.g., the system of the United States, are "precautionary in nature", in particular in the area of health and food safety.

2. The European Communities are currently the chief promoter of the precautionary principle. It is recognized in the *EC Treaty* for the area of environmental protection. However, in the field of human health and food safety, where the European Communities took "precautionary measures" it is not yet articulated. As a partial response to the trade conflicts regarding hormone-treated beef, GMOs, BSE, and antibiotics, Community institutions are currently striving to formulate the first over-arching and general articulation of the precautionary principle. The triggering factors, e.g., "reasonable grounds for concern" or that "the desired level of protection could be jeopardized" are still oscillating. They reflect the low thresholds of risk which justified the European Community measures regarding GMOs, BSE and antibiotics, where it was sufficient that adverse effects on human health could not be "excluded" or "ruled out". A mere consumer threshold is not envisaged and, indeed, all contentious measures of the European Communities, although responding to consumer fears, were taken with a view to scientific evidence. The limiting factors include necessity, regulatory consistency, and the principle of proportionality, which does not allow a "zero risk" policy, but permits the prevention of long-term adverse effects. A significant legal development are the process-oriented steps to be followed, including an evaluation of the risk, identification of topics for further research and transparency.

3. The adoption of the *Cartagena Protocol* as well as the negotiations of the *Codex Principles* indicate an emerging consensus at the international level that precaution is necessary, but that clear limits need to be placed on its use to avoid disguised protectionism. The *Cartagena Protocol* recognizes a right to precaution in its operative provisions and sets forth specific and detailed conditions governing import restrictions on GMOs, including the review of precautionary measures. As regards human health and food safety, a precautionary principle is currently being negotiated under the Codex Alimentarius Commission. Albeit not yet defined, some emerging features of a precautionary principle for food safety could be distilled. The threshold of risk triggering a protective measure is lower than in environmental protection, albeit not aiming at zero risk. Pure consumer concerns cannot justify interference with markets. Other than in the area of environmental protection, there is a trend towards a reversal of the burden of proof. The new precautionary principles are more "process-oriented". They require governments to evaluate the risk, review the measures and involve foreign stake-holders. Thus, in the field particularly relevant for international trade, the precautionary principle is now "close to authoritative formulation".

4. The WTO faces the flip-side of the precautionary principle. As the guardian of liberal trade, it has to deal with the allegation of exporters that precautionary measures result in disguised protectionism of inefficient agricultural markets. According to *Sykes*, even health and environmental measures which apply indistinctly to imported and domestic goods, might result in "regulatory protectionism", if they disadvantage foreign producers "in a manner unnecessary to the attainment of some genuine non-protectionist regulatory objective". A welfare economic analysis of the two examples of GMOs and hormone-treated beef indicates, that the measures taken by the European Communities would be protectionist, *if* there was no genuine risk. However, the crux of uncertain risks is that the determination of whether preventive measures would be "dead-weight" costs can only be made after a risk has manifested itself, as illustrated, e.g., in the BSE crisis. The theory of public choice would explain the trade conflicts of hormones and GMOs with diverging consumer values and risk aversenesses which

result in time intervals between governmental responses and differing degrees of market intervention. While the precautionary principle itself only tackles the balancing of human health and environment versus domestic economic interests, the WTO needs to balance national regulatory choices with the economic interests of foreign firms.

5. The long-festering trade conflict arising from the ban on hormone-treated beef showed that the "accordion-like concept" of the "like" product test under Article III:4 of the GATT 1947, coupled with the exception under Article XX of the GATT 1947, could not grasp the difficulties of scientific uncertainty. The *SPS Agreement* takes a different approach. It uses a right-limit technique. Members may choose their own appropriate level of protection, but must comply with a set of seven obligations, including a science test, a harmonization requirement, a necessity test, an obligation to ensure regulatory consistency and transparency. As indicated by the Appellate Body, Members enjoy an autonomous "right to precaution" in the form of a right to determine the appropriate level of protection or "acceptable level of risk", which may be higher than that implied in international standards, and even be zero risk. The determination of the appropriate level of protection is a "prerogative" of each Member and cannot be second-guessed by WTO panels. Thus, Members are free to decide how much risk they want to accept, e.g. the death of one woman in a million or one butterfly in a million.

6. Whether the precautionary principle finds reflection in WTO law depends on the conditions for the taking of precautionary measures. This term which is more and more used when discussing trade measures that pose particular problems of scientific uncertainty, can be defined as measure taken pursuant to the precautionary principle to protect human, animal, and plant life or health, or the environment, which is taken in situations of scientific uncertainty and may directly or indirectly affect trade. To ensure a precise analysis of the conditions for precautionary measures, further fine-tuning is necessary. First, distinctions can be made between differing degrees of scientific uncertainty. GMOs, involve a high degree of scientific uncertainty, i.e., short term data stand against a few controversial studies

and a bunch of "what if...?" questions. More evidence has been gathered on the effects of hormones, where scientists rather disagree which inferences to draw from existing data. Second, there are considerable differences between "old" pre-Uruguay Round measures, where Members were scientifically idle, e.g. in *Japan – Agricultural Products*, and recent measures taken in the antibiotic cases or Hormones II, which refer to scientific evidence in their Preambles and are labeled provisional, or temporary. Third, trade practitioners use the term "emergency measures" for situations like the BSE crisis, where governments react quickly to the release of scientific findings. Finally, the issue of "mixed measures" has been risen where governments pursue several different legislative goals, e.g. protection of health and consumer concerns and market stabilization in the first Hormones Directive.

7. The chief limits of precaution are set by the obligations under Articles 2.2, 5.1 and 5.7 of the *SPS Agreement* which, according to the Appellate Body, are "essential for the maintenance of the delicate and carefully negotiated balance in the *SPS Agreement*, between the shared, but sometimes competing, interests of promoting international trade and of protecting health". The basic obligation under Article 2.2 of the *SPS Agreement* to ensure that a measure is "not maintained without sufficient scientific evidence" is applied by using a rational relationship test. This concept has been criticized as "we no it when we see it stance". The analysis of the full case law bearing on the rational relationship test, debunked the myth that Article 2.2 of the *SPS Agreement* implies a "sound scientific evidence" standard. The Appellate Body correctly permitted the consideration of minority views as opposed to the preponderance of scientific thinking. This reflection of the precautionary principle not only applies to human health, but has also been extended to animal and plant life or health. The hot debate about the requirements for the consideration of minority views is overstated. The Appellate Body correctly applies a standard whereby the "quantity and quality" of the scientific evidence counts. The minimum standards for sufficient scientific evidence are that studies must be specific and systematic. They must come from qualified and respected sources, and be authored by scientists who have, themselves

investigated the issue at hand. Moreover, few experimental data is not sufficient, in particular if it is not free of error. These further conditions can be legally buttressed by the text of Annex A.3, the relationship between Article 2.2 and 5.7, and the purpose of the *SPS Agreement* to prevent countries from using "stone-wall strategies" by giving "general declarations" rather than "explanations" for their measures.

8. The specific obligation under Article 5.1 of the *SPS Agreement* requires that a measure be "based" on an "assessment of the risk". The notion of risk assessment is defined under Annex A.4, which provides different conditions depending on whether a risk is "food-borne" or "pest or disease related". The *SPS Agreement* does not prescribe a certain notion of risk. Governments may take account of consumer concerns albeit only *together* with scientific evidence when assessing adverse effects on human, animal or plant life or health. Thus, those precautionary measures which respond to a mixture of health and consumer concerns can still meet the risk assessment requirement under Article 5.1 of the *SPS Agreement*. A risk must be "ascertainable" as opposed to "theoretical" uncertainty, i.e. speculations which are not verifiable by using scientific methods. This notion of risk does not diminish the spectrum of risks reflected in the precautionary principle.

9. However, there is a paradoxon created by the case law of the Appellate Body which may cause insecurity whether the *SPS Agreement* sets a minimum threshold of risk higher than the ones established by the precautionary principle. On the one hand, the Appellate Body stressed the difference between the requirement in Annex A.4 to evaluate the "likelihood" versus "potential" of adverse effects by interpreting it as "probability" versus "possibility". On the other hand, the Appellate Body emphasized that no minimum magnitude of risk is required. To square this, it can be argued that the obligation to evaluate risks and to provide sufficient scientific evidence is purely process-oriented. WTO Panels are only called upon to examine whether a Member has *assessed* the risk, but not whether there *is* a *risk*. More specifically, Members must assess and evaluate the "potential" respectively "likelihood" of adverse effects, but can determine

what is a "potential" or "likelihood". Yet, the procedural obligations under Annex A.3 are strict. The Appellate Body requires Members to specifically evaluate the adverse effects arising from a certain substance. "Some evaluation" and reference to "uncertain elements" is not enough. Although a recent DSU Article 21.5 Panel adopted a less stringent reasonable confidence and objectivity standard, this obligation might, *de facto* create a significant hurdle for most precautionary measures

10. Indeed, the analysis of the hypotheticals under Articles 2.2, and 5.1 of the *SPS Agreement* suggests that, although the rational relationship test leaves room for manouvre, the hurdle of sufficiently specific and systematic evidence, supported by experimental data might not be taken by most precautionary measures. A moratorium on imports of GM foods, for example, which is based on the Monarch Butterfly study, might be turned down for not specifically scrutinizing the effects of all GMO imports on human health. As regards the Hormones II measure, it would be difficult to decide whether the new data on oestradiol 17 β are sufficiently specific and free of errors so as to stand against the existing body of scientific evidence which concludes that the administration of hormones is safe when following a good husbandry practice. The fact that the European Communities have based their implementation measure with respect to the five remaining hormones on Article 5.7 by only prohibiting them provisionally illustrates the relevance of the safeguard for scientific uncertainty.

11. There is much confusion regarding the legal nature of Article 5.7. Other than Article XX of the GATT, it is not titled "general exception". It has been characterized as exception, exemption, derogation, and autonomous right. The Appellate Body calls it a "*qualified* exemption". The interpretation of the provision in its context suggests that Article 5.7 is not an exception. Thus, the burden of proof does not automatically shift to the respondent and it does not have to be interpreted narrowly. Article 5.7, like other safeguards, under the ATC or Article 3.3 of the *SPS Agreement*, transgresses the traditional distinction between obligations and exceptions. The term "exemption" stems from taxation law. WTO law uses the concept, e.g. in Article II of the GATS when allowing Members to maintain, on a

temporary basis, measures that violate the MFN obligation. This suggests that an exemption excludes certain measures from the reach of an obligation, while an exception justifies a violation of an obligation.

12. The four-pronged test for Article 5.7 of the *SPS Agreement* set forth by the Appellate Body requires that "a provisional measure must be (1) imposed in respect of a situation "where relevant scientific information is insufficient"; and (2) adopted "on the basis of available pertinent information". According to the second sentence, a Member may not maintain a provisional measure unless it (3) seeks to "obtain the additional information necessary for a more objective assessment of risk" and (4) reviews the "measure accordingly within a reasonable period of time". These elements are cumulative in nature, i.e. a Member must comply with all of them when taking a precautionary measure. That test reflects the ordinary meaning of Article 5.7 of the *SPS Agreement* but for the element "provisionally" which has flown into the overarching term "provisional measure".

13. The entrance requirement of Article 5.7 of the *SPS Agreement* denotes its scope of application. The term "cases in which relevant scientific information is insufficient" is co-extensive to Article 2.2 of the *SPS Agreement*, i.e. all measures which fall through the first hurdle of the science test are generally eligible for the mechanism under Article 5.7.

The decisive triggering factor for a provisional measure is that it is adopted "on the basis of available pertinent information". To date, there is no case law on this element. A contextual analysis of the first sentence of Article 5.7 suggests that it might imply a "mini-risk evaluation" obligation to carry out a "less objective assessment of risk" which evaluates some information that triggers a specific and researchable scientific hypothesis about a risk for human, animal or plant life or health and identifies the remaining uncertainties. The term "on the basis of" might be interpreted as a "mini-rational relationship" test. It would be another "we know it when we see it test". In particular at both ends of the spectrum of scientific uncertainty, it

would be difficult to delineate "pertinent information" from "theoretical risks" and "sufficient scientific evidence".

14. Whether the requirement to "seek to obtain additional information necessary for a more objective assessment of the risk" entails an obligation of the importing country to provide and pay for scientific studies is unclear. In line with WTO jurisdiction, one could arguably distinguish between (i) the obligation to show that a product is safe in pre-marketing approval and quarantine proceedings (ii) the obligation to ensure that a measure has been based on a risk assessment and (iii) the burden of proof in WTO dispute settlement proceedings. The text of the *SPS Agreement* can be used to support that WTO law does not change the precautionary principle whereby a producer has to prove that a new product is safe. As regards the question "what" kind of information must be sought, the Appellate Body ruled that such information must be "germane" to "conducting a more objective assessment of the risk". Thus, building on the information and scientific hypothesis which warrants the provisional measure, further evidence must be sought which allows the Member to carry out a risk assessment pursuant to Article 5.1 of the *SPS Agreement*. To fulfil these conditions, the information to be sought must be specific.

15. The term "provisionally" has raised much concern that Article 5.7 of the *SPS Agreement* would only justify a limited amount of measures which are explicitly applied on an interim or temporary basis, e.g. the emergency measures in the BSE cases, but does not cover the whole range of precautionary measures, in particular measures affecting biotechnology products, where long term risks are suspected. Disputants and scholars keep suggesting certain time limits up to 20 years to flesh out the element "provisionally". The case-to-case test developed by the Appellate Body does not explicitly include the element "provisionally", but measures the reasonable period of time according to the "specific circumstances of the case" the "difficulty of obtaining the additional information necessary" and the "characteristics of the provisional" measure. This test reflects the wording of Article 5.7 read in light of the negotiating history. Clear time-

limits as set for provisional safeguard or anti-dumping measures or as spelled out in Article 21.3 c) of the DSU cannot be given for Article 5.7 of the *SPS Agreement* because scientific evidence is constantly evolving and the outcome of the scientific process is unpredictable. Yet, drawing on limited experience from the DSU 21.3(c) arbitration in *European Communities - Hormones*, it should be possible to measure how long it might take scientists to obtain the additional information in an individual case. The case-to-case test developed by the Appellate Body permits emergency measures such as those taken in the BSE crisis, or temporary bans, e.g., a two year moratorium on GMOs. Long-term bans on GMOs and *Hormones II* are difficult to appraise. The term "provisionally" would disallow *de facto* permanent bans which are disguised as "provisional measure". *Hormones II* poses the interesting question whether a permanent ban can be turned into a provisional one. Considering the relationship between Article 5.7 and Article 21.5 of the DSU it can be argued that, as long as new information exists which warrants further research, a never-ending "spiral of new science" under Article 5.7 might be preferable to a never-ending "spiral of retaliation and carousel retaliation".

16. Testing the Article 5.7 filter with the hypotheticals shows that it produces relatively good results for "model" provisional measures, e.g. the emergency actions taken in the BSE cases. The procedural requirements under Article 5.7 second sentence work well to catch blatant cases of "scientific idleness", i.e. most "old" measures, where imports have been blocked for years on the basis of scientific assumptions. However, at both ends of the spectrum, i.e. *Hormones II* and the "what if..?" questions involved in the biotechnology cases, WTO adjudicators, when faced with new measures, might be forced to "determine" whether Members have adopted the measures "on the basis of available pertinent information". Although the interpretation of the requirement gave some guidance on the application of this possible mini-rational relationship test, WTO adjudicators might well come down on both sides. Thus, the conditions for the taking of precautionary measures are not clear. When looking back, the accordion-like concept of the "like-product" test, coupled with the exception

under Article XX of the GATT, has, in the end been replaced by another accordion, albeit with fewer keys.

17. Where the substantive tests boil down to the assessment of scientific information on a case-to-case basis, the rules on fact-finding play a crucial role. The scientific facts involved in trade conflicts about precautionary measures are complex and highly disputed. The burden of proof is the first important determinant. The analysis of the case law with a view to identifying how much proof is necessary to make a *prima facie* case of inconsistency with Articles 2.2, and 5.1 of the *SPS Agreement* indicates that it is easier to make a *prima facie* case of inconsistency than to refute it. The precise standard of proof varied between the mere absence of scientific evidence regarding MGA, which was enough to show that no risk assessment existed in *European Communities – Hormones*, and *Japan – Agricultural Products*, where the Appellate Body set the bar higher to ensure that to prove a violation of Article 2.2, mere allegations that there is no scientific evidence are not enough. Important for precautionary measures is the question, whether a successful *prima facie* case shifts the burden of proof in the strict sense, i.e. the risk of non-persuasion in situations where the evidence is in equipoise. Here, the case law of the Appellate Body created some uncertainty. However, it can be argued that the *prima facie* case, as generally in international law, only shifts the burden of evidence.

18. Although Article 5.7 of the *SPS Agreement* transgresses the distinction between general obligations and exceptions, by operating as "qualified exemption", the general burden of proof under the *SPS Agreement* is applicable to that provision. As indicated in WTO jurisdiction, the complaining country must make a *prima facie* case that the conditions for a provisional measure are not fulfilled. The use of presumption techniques, following Article 5.8 of the *SPS Agreement*, as well as the general obligation to disclose information under Article 13.1 of the DSU can ensure that neither party can withhold information to the detriment of the other disputant.

19. The point up to which WTO adjudicators may second-guess national risk determinations is not marked by a clear standard of review in the *SPS Agreement* as incorporated in Article 17.6 of the *Anti-Dumping Agreement*. The Appellate Body applies Article 11 of the DSU as standard of review, requiring panels to make an objective assessment of law and facts. As regards the interpretation of most legal concepts under the *SPS Agreement*, e.g., risk and risk assessment, the Appellate Body has paid a considerable degree of legal deference towards Members. Problematic is the second-guessing of factual determinations. Here, the standard of review developed by the Appellate Body is rather a standard of appellate review. Apart from "wilful distortions" of facts and "egregious errors" factual determinations of the panel fall outside the scope of appellate review.

The assessment of the facts in the first SPS cases was heavily criticized for re-doing the national risk assessment. When taking a closer look at what the panels did in all four SPS rulings, there appears to be a clear difference between early cases and the more recent *Australia – Salmon 21.5* decision. As regards the "old" measures, the defendants only gathered evidence after the measure was challenged. This evidence was then re-evaluated by the Panel. In *Australia – Salmon 21.5*, however, Australia carried out a risk assessment following the requirements of Article 5.1 and Annex A.4. The 21.5 Panel employed a "reasonable confidence" standard after verifying that Australia had followed the steps prescribed in Annex A.3. Whether this standard would be upheld by the Appellate Body and could develop into a reasonableness standard similar to the one set forth by Article 17.6 of the *Anti-Dumping Agreement* would depend on further refinement of the process of risk determinations, in particular under Article 5.7 of the *SPS Agreement*. National standards of review cannot be transplanted. However, the new process-oriented precautionary principles negotiated under the Codex Alimentarius Commission might mark the "trade-off" between national responsibility for food safety and cooperation between the WTO Members.

20. The development of new precautionary principles in the *Cartagena Protocol on Biosafety* and the Codex Alimentarius Commission puts the

spotlight on the link between these norms and WTO law. Observers have expressed concerns that the new precautionary principles might be a "slippery slope" towards eroding the science based mechanism of the *SPS Agreement*. The *SPS Agreement* envisages a more nuanced relationship to "outside" norms than other WTO agreements. First, Article 3.2 of the DSU directs WTO adjudicators to "clarify the existing provisions of [the covered] agreements in accordance with customary rules of interpretation of public international law". Second, the *SPS Agreement* incorporates standards, guidelines and recommendations of relevant international organizations as the basis of harmonization or risk assessment techniques (Articles 3.1, 3.2, 3.3, 5.1 and Annex A.3 of the *SPS Agreement*). Third, Article 11.3 of the *SPS Agreement* contains a savings clause regulating possible conflicts with other international agreements by stipulating: "Nothing in this Agreement shall impair the rights of Members under other international agreements, including the right to resort to good offices or dispute settlement mechanisms of other international organizations or established under any international agreement."

21. The Appellate Body, in *European Communities – Hormones* and *Japan – Agricultural Products*, consistently held that the precautionary principle cannot be a "ground for justifying SPS measures that are otherwise inconsistent with the obligations of the Members set out in the *SPS Agreement*". This is in line with Articles 3.2, 7.2 and 11 of the DSU and Article 11.3 of the *SPS Agreement*, whereby "outside" principles cannot form the legal basis of a WTO dispute, but can only have an interpretative function pursuant to Article 31.3(c) of the *Vienna Convention*.

22. The interpretative function of the precautionary principle in the *SPS Agreement* has been generally acknowledged by the Appellate Body, but consistently rejected *in casu*. When carefully analyzing the reasoning in *European Communities – Hormones* and *Japan – Agricultural Products*, three main reasons stand out why the Appellate Body has refused to read Articles 2.2 and 5.1 in the light of the precautionary principle. First, this would have broadened the scope of these provisions to the detriment of Article 5.7 of the *SPS Agreement*, which would have "overridden" the text

of the *SPS Agreement*. The ruling in *United States – Shrimp* has shown that an "outside" rule can only be considered if both are not "mutually exclusive" i.e. conflict. This correctly reflects Article 31.3(c) of the *Vienna Convention* which is a principle of harmonious treaty interpretation whereby the governing treaty, i.e. WTO law, retains the primary role. Second the Appellate Body exercised jurisdictional self-restraint towards the International Court of Justice by declining to determine the status of the precautionary principle in international law. Third, even assumed that, as argued, the precautionary principle in the form of Principle 15 of the *Rio Declaration*, has attained the status of a customary rule of international law, it would have had no relevant content for a dispute under the *SPS Agreement* relating to food safety. This reasoning is in line with the conditions set forth by Article 31.3(c) of the *Vienna Convention*. However, it does not exclude a reading of Article 5.7 of the *SPS Agreement*, which is ambiguous and needs clarification in the light of norms which provide relevant guidance on the subject matter. A general precautionary principle applying to all subject matters, i.e. both environment and health as well as all geographical areas of application does not (yet) exist. Of the specific precautionary principles identified in Part 1 of the thesis, only the (still to be negotiated) *Codex Principles* in the area of food safety and the *Cartagena Protocol*, which relates to GMOs would be relevant norms within the meaning of Article 31.3(c) of the *Vienna Convention*.

23. Precautionary Principles can become incorporated standards in the *SPS Agreement*. A precautionary principle developed under the Codex Alimentarius Commission would, upon its adoption, automatically attain the status of a privileged standard according to Article A.3(a) of the *SPS Agreement*. Other than suggested by *Charnovitz*, the *Cartagena Protocol* does not meet the requirements set out by Annex A.3(d) of the *SPS Agreement* to become an incorporated standard, because its subject-matter is or might be covered by the Codex and the IPPC. Even if the respective scopes and roles of these organizations will be clarified after a period of alignment, the *Cartagena Protocol* would first need to be identified by the SPS Committee through a consensus decision.

24. The *Codex Principles* could have an useful interpretative effect on both, Articles 5.1 and 5.7 of the *SPS Agreement*. They do not prescribe a certain measure and can, therefore, not form the basis of harmonization under Article 3 of the *SPS Agreement*. However, they could, arguably, have effect through the obligation under Article 5.1 "taking into account risk assessment techniques developed by the relevant international organizations". Where the definition of risk assessment does not provide further guidelines, these standards can refine the obligations, for example the rules for the choice of experts, could contribute to resolving the issue of minority opinions. However, the real treasury lies in the "criteria" set forth for precautionary measures, more specifically, the conditions for a "preliminary risk assessment". These could refine the hazy obligation under Article 5.7 of the *SPS Agreement* and further the elaboration of processes which are the precondition for paying more deference towards Members in the assessment of risks.

25. The *Cartagena Protocol* is not an amicable settlement between the United States and other WTO Members regarding their trade conflicts on GMOs. However, it sets forth detailed provisions governing precautionary measures in the area of biotechnology, where the WTO mechanism does not produce predictable results. A conflict between precautionary import restrictions under the Protocol and the *SPS Agreement* was one of the major sticking points in the negotiations. The Protocol does not use a savings or trumping clause to regulate its relationship with WTO law, but envisages a "mutually supportive" relationship between "trade and environment agreements". It mandates that the Protocol "shall not be *interpreted*" as implying a change in the obligations under other international agreements, albeit not being "subordinated" to them. This suggests that the relationship between WTO law and this environmental treaty has advanced to a stage beyond conflict, where both sets of rules can apply cumulatively and cross-fertilizations are possible by interpreting WTO law in the light of the Protocol and *vice versa*.

26. WTO law and jurisdiction support the concept of "mutual supportiveness". The Appellate Body, in *United States – Shrimp* already

moved far ahead by allowing cross-fertilizations at three levels: First, where a term, e.g., "exhaustible natural resources" in Article XX(g) of the GATT 1994 is ambiguous, it can be interpreted "evolutionary" with a view to multilateral environmental agreements as long as the texts are not "mutually exclusive". Second, the Appellate Body referred to the fact-finding under a multilateral environmental agreement. Third, it noted that a "jointly determined solution" can mark out the "line of equilibrium". The legal hurdle to be taken by the *Cartagena Protocol* in a WTO dispute involving the United States, who, although having participated in the negotiations and openly endorsed their outcome, are not likely to become a party, might be less dramatic than sometimes suggested. The Appellate Body, in *United States – Shrimp*, did not apply the requirement that a norm of international law must be "applicable in the relations *between the parties*" to be taken into account in the treaty interpretation under Article 31.3(c) of the *Vienna Convention*, strictly, but referred to the principle of effectiveness of treaty interpretation. An emerging consensus on the party/non-party issue in the CTE supports this approach although the precise conditions are not fixed yet. Because the *Cartagena Protocol* is open to Membership to all WTO Members, enjoys broad-based support including the United States, and has been negotiated with a view to WTO law, it might fulfil the conditions set by Article 3.2 of the DSU read together with Article 31.3(c) of the *Vienna Convention*, to be taken into account by WTO adjudicators when interpreting Article 5.7 of the *SPS Agreement* in a GMO dispute *if* the precautionary principle of the Protocol does not "override" Article 5.7 of the *SPS Agreement*.

27. Precisely the provisions on the precautionary principle in the *Cartagena Protocol* have raised concerns that there might be a conflict between the Protocol and the *SPS Agreement*. The devil is in the detail, because six provisions of the Protocol govern the taking of precautionary measures. A careful comparison of the respective obligations concerning import restrictions on LMOs under the Advance Informed Agreement Procedure (10.6 of the CPB) as well as for LMOs declared to be used directly as food or feed, or for processing (11.8 of the CPB), with Article 5.7 of the *SPS Agreement* indicates that the Protocol has been negotiated

with a view to Article 5.7. As regards the triggering factor for a precautionary import restriction, the *Cartagena Protocol* not only uses similar concepts but is even stricter than Article 5.7 of the *SPS Agreement*, because Annex A.III.8(f) of the CPB requires Members to identify "specific issues of concern". By contrast, although Article 12 of the CPB sets forth review obligations similar to the ones contained in Article 5.7, second sentence of the *SPS Agreement*, these are less burdensome than Article 5.7 of the *SPS Agreement*. More specifically, under the Protocol, a measure is not bound to be provisional and must not automatically be reviewed after a reasonable period of time, but only upon request of the exporter who submits new information. For the area of food safety, no review obligations have been included into the Protocol.

28. Despite the legal differences there is no "conflict" between the respective provisions of the *Cartagena Protocol* and the *SPS Agreement*. Applying the general international law notion of conflict, whereby two provisions must be "mutually exclusive", which has also been adopted by the WTO Appellate Body in *United States – Shrimp*, one can argue that both agreements only permit, but do not require certain precautionary measures. They only differ in the conditions placed upon the right to precaution. However, adherence to the stricter conditions set by the *SPS Agreement* would not violate the less stringent conditions under the *Cartagena Protocol*. The preambular language of the *Cartagena Protocol* clarifies that it shall not be interpreted so as to authorize a deviation from the stricter WTO law provisions. Finally, as analyzed above, Article 5.7 of the *SPS Agreement* sets forth broad case-to-case tests, which have, e.g., dropped the term "provisionally" and might allow WTO panels to come down on both sides.

29. States have gone beyond *legal* conflict between trade and biosafety. However, disagreements about restrictions on GMOs will continue. Because the United States, as major trading nation in biotechnological products, are legally prevented from becoming a party of the Protocol until they have ratified the *Biodiversity Convention*, it is realistic to expect that trade conflicts will be brought to the WTO dispute settlement proceedings.

The final section has explored several ways of how Panels could refer to the *Cartagena Protocol* when resolving a case under Article 5.7 of the *SPS Agreement*. First, the provisions of the *Cartagena Protocol* clarify the practically and financially important issue of the burden to provide evidence under Article 5.7 of the *SPS Agreement* by distinguishing more carefully between the obligation to "ensure that a risk assessment is *carried out*" and the obligation "to *carry out* the risk assessment and to pay for the studies" which, according to the Protocol, can be placed on the exporter. As regards the element "on the basis of available pertinent information", the *Cartagena Protocol* works in favour of exporters. Although generally acknowledging concerns that centers of genetic diversity might be adversely affected by LMOs, the Protocol requires the country of import to identify "specific issues of concern". By contrast, through the omission of the "provisionally" element, the Protocol might influence the determination of the "reasonable period of time" for review under Article 5.7 of the *SPS Agreement* in favour of the country of import.

Most importantly, where left in doubt, WTO adjudicators could refer to the fact-finding carried out under the Protocol, i.e. they could refer to the negative list of LMOs deemed not to pose risks of adverse effects by the Parties to the Protocol. With regard to LMOs that are not "negative-listed", there could be a presumption that scientific evidence on the potential effects of these LMOs is still insufficient and that a measure is based on available pertinent information.

30. The thesis concluded that the precautionary principle is developing from cause to cure. The trade conflicts on hormone-treated beef and GMOs have spurred WTO Members to jointly determine its boundaries. A fascinating process of legal cross-reflections between WTO law and "outside" norms which take account of Article 5.7 of the *SPS Agreement*, but further refine the limits of precaution without blurring the mutual rights and obligations of WTO Members is taking place. Yet, there should be no illusions. Many issues and challenges remain. Even the most accurately defined precautionary principle would be open to abuse. The cultural, economic and scientific factors which incensed trade conflicts endure and

will trigger new rows with the advent of novel technologies or unexpected diseases. The hormone conflict has highlighted many constitutional issues of global governance, in particular the question: Who determines whether a risk is genuine? The consumer? A national authority, or the WTO? The nuanced links between the *SPS Agreement* and other international organizations and conventions might, over the long run, develop towards cooperative fact-finding procedures, where the WTO dispute settlement mechanism can build upon the facts determined elsewhere. For the time being, the new process-oriented element in the precautionary principle might allow panels to gradually pay more and more deference to Members who follow them, and assist them in marking out the line of equilibrium between precaution and precautionism.