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Volume 16 Number 2 2015/p.78-110 www.usask.ca/esteyjournal

The Estey

Journal of International Law and Trade Policy

Reflections on the India–Agricultural Products Dispute in the Light of "Risk Assessment" and the SPS Agreement: Why Has India Failed so Miserably?

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Science and scientific evidence occupy a crucial place in the Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement), which consequently calls for an assessment of risks posed to the lives and health of human, animal and plant life prior to the application of an SPS measure by a WTO member country in accordance with internationally accepted standards. The recent report of the dispute settlement panel in the *India–Measures concerning the Importation of Certain Agricultural Products* dispute has, in turn, assumed a significant role in the development and understanding of "risk assessment", which has been a contentious issue in the majority of disputes concerning the implementation of the SPS Agreement. The United States challenged India's measures, claiming that Indian law, *vide* the Livestock Importation Act in conjunction with the Statutory Order issued to give effect to the former, was not in compliance with WTO law and in particular the SPS Agreement. The agreement requires scientific evidence that is based on scientific principles, along with an assessment of the risk posed to human, animal and plant life, in cases where the importation of certain agricultural products is prohibited or restricted. Consequently, India erred in various aspects when it based its risk assessment concerning Avian Influenza on methods that were outside the scope and ambit of the standards prescribed by the Terrestrial Code. While the Terrestrial Code authorized a prohibition of the importation of livestock products merely from zones

and compartments within the country affected with AI, in contrast India imposed a complete ban on livestock from countries that reported Avian Influenza (irrespective of whether such products originate from Avian Influenza–free zones or not). In doing so, India violated the requirement that its SPS measure be based on scientific principles; its measure did not conform to scientific principles. Consequently, despite the fact that India had a right to determine the level of protection it considers appropriate as per the agreement, it also over-stepped this right when it failed to perform its duty of ensuring that the SPS measure was not more trade restrictive than necessary. The panel's interpretation of the use and significance of risk assessment as a basic premise is therefore noteworthy, not merely given increasing concerns pertaining to agricultural protectionism in deterring the goals of free trade policy, but at the same time considering the limited jurisprudence on the subject matter – namely the relationship between scientific principles and evidence on the one hand, and risk assessment on the other. This article, hence, provides insight into the recent panel report in the *India–Agricultural Products* dispute against the backdrop of the requirement of risk assessment in the SPS Agreement.

Keywords: dispute, India, science, SPS, standards, United States, WTO

1. Introduction

The principles of international trade law have evolved over the last decade, in turn leading to a wide array of agreements to cover subject matters including antidumping,[1] subsidies,[2] intellectual property,[3] technical barriers to trade[4] and the like. While the initial aim of international trade regulation by the GATT was simply the liberalization of tariffs and reduction of barriers to international trade, in subsequent years more emphasis has been placed on members' approaches to the environment and the health of not merely their citizens, but also animal and plant life.[5] Interestingly though, while these endeavours to protect and preserve the life and health of humans, animals and plants could be perceived as a legitimate policy objective of members of the World Trade Organization,[6] they have often been misused as facilitators for economic protection.

Due to worries that measures under the guise of protecting human, animal and plant life could actually be acts of protection, the Uruguay Round of the WTO saw the successful negotiation of the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement),[7] which sets out the measures that WTO members are permitted to take for the protection of human, animal and plant health and requires that they be based on international standards and scientific evidence. In a related vein, this agreement highlights the fact that agricultural protectionism could often run counter to the goals of free trade policy; thus, measures that in effect decrease international trade by means of such protectionism should have to meet the test of being based on international standards and scientific principles.

Against this backdrop, where at one point the traditional mandate of the international trade regime of the WTO was non-discrimination, now science, scientific principles and scientific evidence form the crux of the Agreement on Sanitary and Phytosanitary Measures.[8] The focus of the SPS Agreement on science has nevertheless brought with it extensive controversies as to the exact role of science and its influence on the agreement. Major disputes involving SPS measures have been rare – seven to be exact,[9] but the significance of "risk assessment" and, in particular, its relationship with scientific evidence has been central to most of these disputes.

This article therefore endeavours to reflect upon the role of risk assessment in the light of the SPS Agreement and in view of the dispute settlement panel's recent report in the *India–Measures concerning the Importation of Certain Agricultural Products* dispute (hereinafter referred to as the *India–Agricultural Products* dispute).[10] With this aim in mind, the article reflects upon the jurisprudence and mandate of the SPS Agreement in the initial part and subsequently analyzes the concept of risk assessment as it appears in the agreement against the backdrop of the *India–Agricultural Products* dispute and in the light of past disputes where risk assessment under the SPS Agreement has been an issue of contention.

2. Understanding the Basic Elements of the SPS Agreement

As pointed out earlier, the SPS Agreement was a result of the successful negotiations of the Uruguay Round, with the primary objective of ensuring food safety against the backdrop of certain serious diseases (*inter alia* plague, mad cow disease, cholera, yellow fever) that were detrimental to the health of humans, animals and plants.[11] The SPS Agreement was a successor to the Agreement on Technical Barriers to Trade (TBT Agreement), which was passed during the Tokyo Round in order to regulate international trade in food.[12] Both the original TBT and the SPS agreements marked a major departure from liberalization of trade through the reduction of barriers being the exclusive mandate of the international trade regime. It was realized that there was the need to prevent governmental measures by respective members of the WTO being justified under the guise of protecting human, animal or plant health, but in actuality simply being protectionist policies that act as barriers to trade in agricultural products.[13] Thus, measures undertaken to protect and preserve human, animal or plant life were to be based on international standards and scientific evidence.[14] When such a trade measure is applied either towards protecting human or animal life or health from additives, contaminants or diseased organisms in beverages or feedstuffs,[15] or in order to protect animal or plant life or health from pests or other risks arising from diseases, there must be a scientific justification.[16] A significant

caveat, however, to the application of SPS measures in order to achieve the purposes aforementioned is the fact that these measures must be applied based on an assessment of the risks that would arise depending on the "likelihood"[17] or the "potential"[18] that the product that would be subject to such a measure will have an adverse effect on the health and life of humans, animals or plants. In other words, risk assessment remains at the very core of this agreement and in turn relies on "the risk assessment techniques developed by the relevant International Organizations."[19] Against this backdrop, three international organizations are looked to for the effective implementation of the SPS Agreement through their development of appropriate risk assessment techniques. The organizations are the World Health Organization's (WHO) Codex Alimentarius Commission, which operates in collaboration with the Food and Agriculture Organization and endeavours to regulate food safety for the purpose of international trade in food;[20] the International Office of Epizootics (popularly referred to as the OIE), which regulates the spread of zoonosis in order to prevent diseases and pathogens spreading during the course of international trade in animals and animal products;[21] and the International Plant Protection Convention (IPPC), which endeavours to prevent the international spread of diseases and pests in plants.[22] These international scientific organizations are charged with the duty of developing the necessary risk assessment techniques, which are particularly important given the agenda of the SPS Agreement. The SPS recognizes the need to harmonize standards, guidelines or recommendations wherever they exist.[23]

At the outset, the members of the WTO have the right to ensure safety in international trade in food, for which purpose they are permitted to take the requisite sanitary and phytosanitary measures, so long as they do not create an arbitrary or disguised restriction on international trade; the measures must, hence, be in keeping with the other provisions of the SPS Agreement.[24] The right to impose measures that restrict international trade in food based on the need to take certain sanitary or phytosanitary measures, however, like most rights, comes with certain limitations. On the one hand, the SPS Agreement provides a right to the members to undertake measures for the protection of human, animal and plant health and life; at the same time, it creates a "ceiling" on this right. The resolution of these somewhat contradictory obligations does not, however, necessarily require the formal juggling of a cost-benefit analysis.[25] Firstly, as aforementioned, the (SPS) measures designed to protect human, animal or plant life must be "based on scientific principles", which must, in turn, be maintained in the presence of "sufficient scientific evidence".[26] Once it has been established that the SPS measure has been invoked based on "sufficient scientific evidence", there lies an additional onus on the member invoking the same to

further prove that such SPS measure has also been based on an analysis of the assessment of the risk that importation of such a food product may pose for the health and lives of humans, animals and plants.[27] The risk assessment techniques, as aforementioned, are those that have been developed by international organizations for this purpose.[28] The SPS Agreement, however, recognizes the right of members to adopt sanitary and phytosanitary measures that aim to achieve a higher level of protection than those already provided for in the pre-existing international standards, provided that the member is able to prove there is a scientific justification[29] for imposing a higher level of SPS measure, which also satisfies the prerequisites of Article 5 of the agreement pertaining to risk assessment.[30] A significant concomitant of a member's right to base its SPS measures on standards higher than those recognized by the international organizations, provided there exists a scientific justification for the same, is that the agreement, in turn, provides a corresponding right to the member(s) against whose product(s) such an SPS measure has been invoked to request from the invoking member an explanation of the reasons for such an invocation, when the former has reason to believe that such a measure has the potential to constrain its exports and that such a measure may not in fact be based on the relevant international standards, guidelines or recommendations or, worse still, these may not even exist.[31] In this regard, while the mandate of the SPS Agreement highlights the fact that the member seeking to impose an SPS measure must rely on scientific evidence, which has been based on scientific principles, the SPS additionally recognizes the fact that, occasionally, the scientific evidence may, in fact, be insufficient.[32] For this reason, the agreement permits its members to *provisionally adopt* SPS measures[33] on the basis of the precautionary principle.[34] This principle is reflected in Article 5.7 of the SPS Agreement and additionally relies on Article 3.3 of the agreement, which permits members to adopt SPS measures that are higher than the existing international standards.[35] Article 5.7, reflecting the precautionary principle, permits members to adopt SPS measures even when there is insufficient scientific evidence, on the basis of "available pertinent information" from the relevant international organizations and/or from the measures of other members.[36]

In addition, the SPS Agreement underscores the significance of the principle of non-discrimination, which lies at the very core of the WTO trade regime. Apropos, it reflects the chapeau of Article XX in the GATT, which deals with the principle of most-favoured-nation treatment and the principle of national treatment. The SPS Agreement provides that SPS measures must be invoked only after ensuring that they do not "arbitrarily or unjustifiably discriminate between Members where the identical or similar conditions prevail".[37] This nondiscrimination principle includes the

prevention of discrimination between a country's own territory and the territory of the other members during the invocation of such an SPS measure.[38] Understanding that the failure to publish relevant information regarding the existing rules and regulations can act as one of the main disincentives to the liberalization of trade, the SPS Agreement reinforces the need to make information in this regard publically available. In this light, another vital facet of the agreement is the principle of transparency, which, as with the other agreements of the WTO, remains a corner-stone of the international trade regime.[39] The agreement therefore recognizes the need for members to publish their regulations with respect to SPS measures on a prompt basis, to enable all interested parties to become acquainted with the same.[40] In a related vein, the SPS Agreement imposes a duty on the members to provide a reasonable lag between the publication of the SPS regulations and the actual enforcement of the same, so that the affected exporters and producers are provided with sufficient time to adapt their products and methods in line with the new regulations.[41] In circumstances where a new SPS regulation is being introduced, and the same deviates from an existing international standard on the subject matter, or is being introduced in cases where there is no international standard, the Annex to the SPS Agreement requires the member introducing such a regulation to provide a draft of the same, and also to provide a reasonable amount of time for the other members to comment on the same.[42]

3. Scientific Evidence and Risk Assessment vis-à-vis the Panel Report in the *India–Measures Affecting the Importation of Certain Agricultural Products* Dispute

Science and scientific evidence occupy a crucial place in the SPS Agreement, which consequently calls for an assessment of risks posed to the lives and health of human, animal and plant life prior to the application of an SPS measure by a member in accordance with internationally accepted standards. The recent dispute settlement panel report in the *India–Measures Affecting the Importation of Certain Agricultural Products* dispute has, in turn, assumed a significant role in the development and understanding of "risk assessment", which has been a contentious issue in the majority of disputes concerning the implementation of the SPS Agreement.[43]

3.1 Events Leading to the Dispute

The incidents that led to the invocation of the Dispute Settlement Understanding (DSU) with respect to the alleged violation of the SPS Agreement in the *India–Importation of Certain Agricultural Products* dispute primarily concerned the

importation of agricultural products from the United States. The complaint in this dispute was that some U.S. products were potentially infected with the disease avian influenza (AI).

3.3.1 Animal Zoonosis and Avian Influenza

Avian influenza is a form of zoonosis.[44] It is alternatively referred to as avian flu or bird flu, and commonly occurs in geese and ducks. It is transmitted to other domestic poultry such as chicken only when there is an outbreak of bird flu on a large scale. It can also occasionally spread to and among humans. Avian influenza is most likely to be communicated to humans when there has been a direct human to human contact or alternatively an exposure to the infected wild birds, poultry or feces. AI may occur in either a highly pathogenic form (commonly known as HPAI)[45] or a lowly pathogenic form (commonly known as LPAI)[46]. International regulations, namely vide the World Organization for Animal Health (known as the OIE), make it mandatory that any manifestation of either type of AI be notified to the OIE. Accordingly, those incidences of highly pathogenic and lowly pathogenic AI that are notified to the OIE are regarded as "notifiable avian influenza" (NAI).[47]

In a related vein, the Food and Agriculture Organization reports that the disease is most commonly transmitted among a large number of poultry, with wild birds playing a negligible role in its transmission, with the exception that the Asian form of H5N1, HPAI, might nevertheless be transmitted from wild birds to poultry without any metamorphosis from the LPAI.[48] Being a form of zoonosis, AI, albeit commonly found and transmittable among poultry and wild birds, can sometimes also cause disease in humans, primarily when there has been contact with the infected species in cases of HPAI.[49] There have been cases reported in China where the spread of deaths has been associated with the occurrence of even LPAI.[50]

3.2 United States' Antagonism to India's Management of NAI with Respect to Imported Products

The United States challenged India's measures, claiming that Indian law, vide the Livestock Importation Act[51] in conjunction with the statutory order[52] issued to give effect to the former, was not in compliance with WTO law and, in particular, the SPS Agreement, which requires evidence that is based on scientific principles along with an assessment of the risk posed to human, animal and plant life, when the importation of certain agricultural products is prohibited or restricted.[53]

As the Livestock Act, 1898 targets the regulation of imports[54] of livestock[55] that has been affected by infectious or contagious diseases,[56] it in turn empowers the Central Government of India to "regulate, restrict or prohibit" the importation of livestock that has been affected by an infectious or contagious disease.[57] In addition, the Livestock Act of 1898 was subsequently amended by the Livestock Amendment Act of 2001[58] to enlarge the scope and ambit of the act so as to also include not merely the "regulation, restriction and prohibition" of imports of livestock that has been affected by an infectious or contagious disease, but also livestock products.[59] Accordingly, the Department of Animal Husbandry, Dairying and Fisheries (DAHD) is responsible for the regulation, restriction and prohibition of livestock that has been afflicted by an infectious or contagious disease. As a result, the DAHD issued the S.O. 1663(E) for this purpose, which in turn prohibited the importation of wild birds from countries that have reported HPNAI and LPNAI. The S.O. 1663(E) furthermore prohibited the importation of livestock from countries that had reported HPNAI or LPNAI when the products were in the form of domestic and wild birds; day old chicks, ducks, turkey; unprocessed meat and meat products from AI-infected species; hatching eggs; egg products; unprocessed feathers; live pigs; pathological material and biological products from birds; and also semen of domestic and wild birds, including poultry.[60] In a similar light, the Indian government also passed the Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009[61] in order to prevent and control the spread of such infectious and contagious diseases, among them AI (in the forms of both LPAI and HPAI).[62] Consequently, the DAHD also formulated a National Action Plan, 2012 in order to deal with the spread of AI in India.[63]

3.2.1 The Primary Contentions

In the light of India's prohibition of imports of animals and animal products from countries that have notified the existence of AI in their territories, by virtue of the Livestock Act, 1898 (as amended by the Act of 2001) read along with the S.O. 1663(E), the Prevention of Diseases Act, 2009 and the NAP, 2012, the primary issue in the dispute was to judge the legality of the Indian measure. Specifically, the measure at issue before the WTO panel was India's prohibition of various agricultural products vide the Livestock Act, 1898[64] in conjunction with the statutory order.[65]

It is in this context that the panel was left to adjudge the Indian measure of such prohibition of livestock products from countries that had notified AI while, at the same time, the country permitted the movement and trade of like or similar products

within its own territory. India claimed that in situations where there has been an outbreak of AI in its own country, the movement of like domestic products is permissible when such products have originated outside a ten-kilometre radius from the centre where the disease is detected, because the epicentre is known.[66] By contrast, India claimed that its laws (namely the Livestock Act, 1898) and the S.O. prohibiting the importation of agricultural products from nations that have notified the infestation of AI in their territories certainly are not a case of discrimination or violation of the requirements of the SPS Agreement, because in such cases the epicentre cannot be known.[67] In response, the United States alleged that India had violated various provisions of the SPS Agreement by not recognizing NAI-free zones or compartments from which the given agricultural product can still be imported when such zone or compartment is declared free of NAI, such an evasion being an act of discrimination.[68] Consequently, the issue arose that India had, besides discriminating against similar imported products, furthermore also violated various clauses of articles 2, 3, 5, 6 and 7 of the SPS Agreement *inter alia* pertaining to the requirement of basing measures prohibiting or restricting the importation of agricultural products on, or conforming them to, international standards, scientific risk assessment and nondiscrimination.[69]

Against this backdrop, the S.O. 1663(E) remained the measure at issue due to its being discriminatory between imported and like domestic products where similar conditions prevailed. The panel ruled in favour of the United States in so far as it recognized that India had certainly violated the core principles of the SPS Agreement. India was found to have failed to base its measures on scientific evidence that gave due account to the assessment of risk that imported products from countries that have reported the outbreak of NAI could potentially pose to the health and lives of humans, animals and plants.

3.3 Risk Assessment and the India–Agricultural Products Dispute

While India's measures violated various clauses of the SPS Agreement, the fact that it failed to conduct an assessment of any risks posed to human, animal and plant health and life remains at the core of this dispute. As already mentioned, an assessment of risk has been a central contentious issue in most, if not all, disputes claiming violation of the SPS Agreement.

As far as the *India–Agricultural Products* dispute was concerned, the United States argued that India had failed to base its import ban on an assessment of the risks that affected products would pose to the health and lives of humans, animals and plants.

Accordingly, even as both parties agreed that the import ban imposed by virtue of the S.O. 1663(E), read along with the Livestock Act, 1898 (as amended by the Act of 2001), would be an SPS measure within the meaning and scope of the SPS Agreement,[70] the fact that India had failed to carry out a risk assessment prior to such a ban was a central feature of this dispute. The United States claimed that the Livestock Act, read along with the SO 1663 (E), would be an SPS measure because it affected "international trade by imposing import prohibitions".[71] Hence, while India put in place the AI ban on the basis of the S.O. 1663(E), which had the objective of ensuring food safety and protecting domestic and wild birds from AI, i.e., both HPNAI and LPAI, in order to prevent transmission of this virus and preserve human and poultry health,[72] such an import ban would be regarded as an SPS measure due to it being imposed by virtue of a law, decree or regulation as set out in Annex A: 1 of the SPS Agreement.[73]

While it was agreed that the import ban was an SPS measure, the United States alleged that India failed to ensure that such a ban was imposed after an assessment of risk; therefore, it violated articles 5.1 and 5.2 of the SPS Agreement. For this reason, the United States additionally alleged that while failing to comply with the risk assessment provisions of the SPS Agreement, India additionally breached the mandate of basing its ban on scientific evidence and therefore violated other provisions of the SPS Agreement.

3.3.1 Where Did India Err?

The key requirement of imposing an SPS measure in accordance with the SPS Agreement is that such a measure must be on the basis of risk assessment that is in keeping with scientific evidence. Accordingly, the panel was faced with the task of answering certain significant questions in the *India–Agricultural Products* dispute and, in particular, whether such a ban was in fact based on an assessment of risks that AI would have posed for the lives and health of humans, animals and plants in India.

The panel had to determine whether India had satisfied certain crucial prerequisites of the SPS Agreement. In other words, the panel would first have to establish what the relevant international standard would be in this case; next, it would have to look into whether India's domestic SPS measure either "conformed to" or was "based on" that international standard. Once it was established whether India had based its domestic SPS measure on the relevant international standard, the panel would then have to examine if the measure had been successfully based on the risk assessment techniques developed by the international organization that coincidently also developed the international standards.

3.3.1.1 First things first: Understanding the role of international standards in invoking SPS measures

To begin with, the SPS Agreement obliges its members to ensure that the SPS measures that they seek to impose "conform to" the international standards, guidelines or recommendations set forth by international organizations in this regard.[74] However, since it may not always be practical for members to "conform to" the international standards when imposing an SPS measure, the agreement permits the imposition of an SPS measure that is "based on" the international standard.[75] What remains crucial in such circumstances is that members apply SPS measures only once an assessment of the risk to humans, animals and plants has been undertaken according to the provisions of the SPS Agreement for the same, together with the use of techniques of risk assessment provided for by the international organization.[76] The SPS Agreement therefore provides a right to members to protect their citizens against additives, contaminants, toxins and diseases that may arise with the importation of certain food products.[77] In addition, however, unless the SPS measure is able to completely embody the relevant international standard, it must be imposed only after a risk assessment has been undertaken.

The panel in every dispute must therefore first adjudicate on what the relevant international standard would be for the dispute before it, in accordance with the provisions of the SPS Agreement.[78] International standards are thus those that have been developed by the relevant international organization.[79] The SPS Agreement encourages the harmonization of SPS measures and thus mandates the incorporation of international standards, guidelines and recommendations when imposing them. Further, the SPS Agreement obligates the members to harmonize their SPS measures in particular ways. For one, every SPS measure must either "conform to" international standards, guidelines or recommendations (where they exist)[80] or, alternatively, be "based on" such international standards, guidelines or standards.[81] In the former scenario, the SPS measure adopts all the elements of the relevant international standard,[82] and the measure so imposed is presumed to be indispensable in protecting human, animal or plant life or health; it is also deemed to be consistent with the SPS Agreement as well as the GATT, 1994.[83] In the latter scenario, the SPS measure seeks to achieve harmonization of SPS measures by drawing from some of the elements of the relevant international standard.[84] In this scenario, there is no presumption, and the complainant is otherwise required to prove that a member has not based the SPS measure on the international standard, guideline or recommendation.[85] In a third scenario, an SPS measure may be imposed even if it is not based on the international

standard, if there is a scientific justification for the imposition of a higher level of SPS measure. The latter provision is contained in Article 3.3 of the SPS Agreement.[86]

The SPS Agreement thus provides members with the autonomy to choose their own levels of protection, as long as the level of protection chosen also conforms to the risk assessment requirements of the SPS Agreement. Risk assessment in such circumstances turns into the bottom line of the SPS Agreement, especially as it may not always be possible for members to completely adopt all the requirements of the international standards (i.e., "conform to"), in which case they may only be able to *base* their measure on the international standards.

It is in this context that the SPS Agreement permits members to base their risk assessment techniques on an individual level of protection, also known as the "appropriate level of protection" (ALOP). The ALOP is, in turn, an individual decision of each member invoking the SPS Agreement, so long as this ALOP does not "constitute an arbitrary or unjustified discrimination or disguised restriction on international trade."[87] Most importantly, such a risk assessment is required to be based on scientific evidence that is in conformity with internationally accepted scientific principles.[88] Individual members are permitted to delineate their individual ALOPs, which whilst deviating from international standards are scientifically justified but also less stringent than the standard, unless not doing so (i.e., applying a stricter ALOP) is considered legitimate because it is a less–trade restricting measure.[89] These criteria demarcate whether or not an SPS measure is consistent with the SPS Agreement. The SPS Agreement thus introduces a scientific element to the international trade regulation of the WTO, and along with it the risk assessment requirements.[90]

Having determined that India's ban on livestock from countries that had reported instances of NAI was an SPS measure within the meaning and scope of the (SPS) Agreement, the panel first had to examine whether such an import ban did satisfy any of the three conditions mentioned in the previous paragraph. Only then could it adjudge if India had properly conducted a risk assessment with reference to such a ban. In other words, the question was whether or not India had based its import ban on an international standard.

The requirement for undertaking the risk assessment is a basic presumption when a member merely bases its measure on the international standard, as against conforming to it in its entirety. This is because in the case of conforming to a standard the measure would have already taken into account the scientific principles and sufficient scientific evidence on which the international standard has been based. It is only when a domestic SPS measure has been based on (rather than conforming to) the international standard that there would be a need for the member to further prove that

such a measure has drawn upon scientific principles and thus present sufficient scientific evidence when undertaking a risk assessment process. Annex A (4) of the SPS Agreement defines risk assessment as follows:

> The evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; or the evaluation of the potential for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, beverages or feedstuffs.[91]

In a similar context, risk assessment is thus regarded to mean:

> A process characterized by systematic, disciplined and objective enquiry and analysis, i.e., a mode of studying and sorting out facts and opinions.[92]

Risk assessment under the SPS Agreement aims at protecting the life and health of humans, animals and plants from certain diseases, additives and contaminants. For this reason, the SPS Agreement obligates an assessment of risk that could arise either from pests and other diseases or from food-borne disease.

3.3.1.2 India's import prohibition vis-à-vis the international standard

In the US–India dispute the panel was left to first adjudge whether the import ban was "based on" the international standard for it to be considered to satisfy the first criterion of being consistent with the SPS Agreement. The next significant requirement would be for the panel to decide if the ban was then imposed after undertaking an assessment of risk that is consistent with the international standard.

While both the United States and India agreed that the international standard for AI would be the Terrestrial Code promulgated by the OIE,[93] the United States argued that India had failed to "base" its import ban on AI-affected livestock products on the Terrestrial Code.[94] The United States supported its argument in light of the requirements of the SPS Agreement, which mandates members to "base" their SPS measures on international standards, guidelines or recommendations, when such international standards exist. As both the parties did in fact agree that the international standard in this circumstance was the Terrestrial Code, the United States based its allegation (that India failed to "base" its import ban on the Terrestrial Code) on the argument that, while on the one hand the Terrestrial Code was the international standard as far as the regulation of AI was concerned in international trade transactions, it does not anywhere suggest that infected products must be prohibited from import.[95] Rather, it advises the importation of goods after the adoption of proper

control measures. India had simply banned the importation of such products from countries reporting NAI without following procedures mandated in the SPS.[96]

In the light of the above, the panel was left to first determine whether India had based its import ban concerning AI on international standards. In recognizing the Terrestrial Code as the relevant international standard for the matter at dispute, the panel sought to further analyze whether the import ban on livestock vide the S.O. 1663(E) was "based on" the Terrestrial Code. The panel thus threw light on the obligation imposed by the SPS Agreement – that members are to harmonize their SPS measures. As underscored in the previous paragraphs, even as members are encouraged to *conform* to international standards when imposing SPS measures, they can nevertheless alternatively *base* their SPS measures on such international standards. In this context, because India's domestic law and regulation regarding the prevention of the spread of AI (the Livestock Act along with the S.O. 1663(E)) in the territory (i.e., India) did not *conform to* the international standard in this situation (i.e., the Terrestrial Code), India's only option was that the law and regulation at least be *based on* the Terrestrial Code. As a result, it must also involve a risk assessment procedure. In other words, what remains significant when members are unable to conform to an international standard is that they must *base* their measure on international standards, and only after undertaking a risk assessment in accordance with the provisions of the SPS Agreement. Risk assessment being the *sine qua non* of the SPS Agreement is particularly relevant in situations where a member is unable to conform a SPS measure to an international standard. Risk assessment was consequently a significant element in the *India–Agricultural Products* dispute.

The panel found that the import ban imposed by India by virtue of the Livestock Act, 1898 (as amended by the Act of 2001), and in particular the S.O. 1663(E), failed to comply with the requisites of the SPS Agreement, as the latter was not based on the OIE's recommendations on AI as provided for in the Terrestrial Code.[97]

While the Terrestrial Code regulates the international standards applicable in international trade in products affected by AI, it does not specifically regulate the international trade in "live pigs" and "pathological material and biological products from birds" that have been affected by AI.[98] The S.O. 1663(E), however, additionally imposes an import ban from countries that have reported NAI in these two categories.[99] In other words, the scope of the S.O. 1663(E) went beyond that of the Terrestrial Code's standards pertaining to AI when the former was supposed to be based on, or limited to the scope of, the latter, rather than over-riding it.[100] Furthermore, the S.O. 1663(E) also went beyond the Terrestrial Code when, instead of merely seeking to adopt control measures, the former directly imposed an import ban

on products originating from countries where instances of NAI were reported.[101] Where the Terrestrial Code thus recommends the compartmentalization of NAI-free countries and zones, and therefore permits imports from livestock products from these areas, India, on the contrary, imposed an absolute ban on livestock products, entirely disregarding the NAI-free countries, zones[102] and compartments[103] as recommended by the Terrestrial Code.[104] As India's domestic SPS measure failed to base itself on the Terrestrial Code, it at the same time also failed to conform to the Terrestrial Code.[105]

3.2.1.3 How India's laws and regulations permitting the import ban failed to satisfy even the bare minimum criteria

The SPS Agreement obligates that every SPS measure imposed by a member must take into account that it is to be based on scientific evidence.[106] This basic mandate, in turn, has its own specific requirements in the form of a risk assessment. Most importantly, obligations to base SPS measures on scientific evidence and risk assessment are co-related primarily because the one informs the other. In other words, when a member fails to satisfy that it has undergone the necessary risk assessment in accordance with the SPS Agreement, it correspondingly fails to provide scientific evidence as well.[107]

The Appellate Body, in previous disputes, has accentuated this relationship between risk assessment and scientific evidence. In the *EC–Hormones* dispute, which was the first dispute to clarify the SPS Agreement, the Appellate Body defined the relationship between risk assessment and scientific evidence. The key issue under dispute was whether the EC had correctly taken into account the risk assessment prerequisites in the SPS Agreement when banning the import of beef from cattle that had been injected with a bovine growth hormone, even though the sale of meat that had been treated with hormones during production in the EC had been similarly banned. Consequently, the Appellate Body analyzed the nature and scope of risk assessment in detail, and also its relationship with the SPS Agreement. The Appellate Body looked into the implied relationship that Article 5.1 (pertaining to risk assessment) has with Article 2.2 of the SPS Agreement.[108] It justifies the application of an SPS measure only when the same is applied to protect human, animal and plant life and is additionally "*based on*" scientific principles with "sufficient[109] scientific evidence".[110] Hence, while the Appellate Body clarified that the existence of a "rational relationship" between the SPS measure imposed and the risk arising from the imports remain a prerequisite, it also clarified that there need not be a demonstration of the minimum level of risk pursuant to which such an SPS measure at issue has been

imposed.[111] Accordingly, while even a risk that is negligible accounts for the imposition of the SPS measure, what remains important is that such a risk is ascertainable; hence, "theoretical uncertainty is not the kind of risk which, under Article 5.1, is to be assessed."[112]

As a means of basing its SPS measure on sufficient scientific evidence, a member must take into account the risk assessment techniques promulgated by the appropriate international organization that has developed the international standard. However, prior to undertaking a risk assessment in accordance with those techniques, either of the two scenarios outlined in the SPS Agreement must be present. Firstly, risk assessment is undertaken in order to evaluate "the **likelihood** of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences"[113] (also referred to as pest- and disease-related risks). Alternatively, risk assessment may be undertaken in order to evaluate "the **potential** for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, beverages or feedstuffs"[114] (also referred to as food-borne risks).

As a result, while risk assessment may be undertaken in order to assess either quarantine risks arising from diseases and pests or food-borne risks, members are obligated to impose their SPS measures based on an assessment of such a risk that arises for humans, animals or plant life and health.[115] Such an assessment must take in to account the techniques for this purpose that have been developed by the relevant international organization[116] (in this case, the OIE). What remains of prime significance is, whether a risk assessment is undertaken for the evaluation of risks arising from diseases and pests or from food-borne diseases, there must necessarily be a demonstration of the *relationship* between the SPS measure and the risk so arising.[117] Secondly, each member, when imposing an SPS measure, must necessarily give due account to:

> the available scientific evidence; relevant processes and production methods; relevant inspection; sampling and testing methods; prevalence of specific diseases or pests; existence of pests or disease-free areas; relevant ecological and environmental conditions; and quarantine or other treatment.[118]

The Terrestrial Code correspondingly outlines the risk assessment techniques to be undertaken by members prior to the invocation of an SPS measure when the risk arises from animals or animal products.[119] The said code, vide Chapter 2.1, underscores the need to undertake a transparent analysis, coupled with clear reasons, of the risk(s) the imported animal, animal product, animal genetic or pathological

material would pose to the importing country.[120] Where a list of diseases has been recognized by the code itself, the members would only be required to undertake a qualitative analysis, as the risk posed by the disease has already been identified.[121] However, when imposing an import prohibition, the OIE (vide the Terrestrial Code's risk analysis technique) recommends the recognition of disease-free zones and compartments from which the said products may continue to be imported.[122] The most significant step in risk analysis is identifying the hazard that the animal or animal product would pose to the importing country.[123] The exporting country must, therefore, identify whether the disease is a notifiable one, that the said hazard from that disease is already present in its own country and, most importantly, whether the exporting country is currently undertaking measures to eradicate the disease.[124] These steps would be crucial in preventing the adoption of more trade-restrictive measures than necessary.[125] Accordingly, it is only when the importing country has permitted importation using the sanitary standards that have been recommended by the Terrestrial Code that a risk analysis would not be required.[126] The Terrestrial Code therefore does not recommend the imposition of an import prohibition, but rather endorses the importation of such products using the sanitary standards that it lays down.[127] After identifying the hazards, the importing member must identify the risk or hazard that each disease would pose to the life and health of its humans, animals and plants. Specificity is thus the core criterion.[128]

While undertaking a risk assessment, it is vital that the importing country scrutinize the probability of entry that each such hazard would pose, and in particular how the imposition of the SPS measure would change or rather prevent the entry of the said hazard into the importing country (also known as entry assessment).[129] Secondly, the importing nation must then identify the probability of its humans and animals being exposed to the said hazard (disease) through insect bites, inhalation or ingestion, to name a few (also known as exposure assessment).[130] Lastly, the importing nation must determine the consequence of such an exposure of its humans and animals, which would have either socio-economic impacts or adverse environmental impacts, or be detrimental to health (also known as consequence assessment).[131] The importing member must then evaluate the risk that the entry, exposure and associated consequences would pose for its humans and animals, i.e., risk estimation.[132] The management of the said risk after the assessment of risk in accordance with the technique mentioned above would then be legitimate when the importing country invokes an SPS measure on the basis of the international standards set out by the OIE.[133]

Even as the SPS Agreement creates an obligation on the members to undertake a risk assessment prior to imposing an SPS measure, it permits members to base this measure on levels it thinks would be appropriate (known as the "appropriate level of protection").[134] What remains interesting is that members nevertheless look into the relevant risk assessment techniques while deciding upon their appropriate level of protection. Hence, even though the level of protection would be the prerogative of each member, it must satisfy this *sine qua non* of being in accordance with the appropriate risk assessment techniques. As well, the level of protection must be appropriate, or, in other words, proportionate to the risk arising from the product concerned.[135] Therefore, deciding upon the appropriate level of protection would be the prerogative of the member only once the risk assessment has been accurately conducted. Should the latter test of risk assessment fail, the member's privilege of determining the appropriate level of protection also fails.

In the *India–Agricultural Products* dispute, the S.O. 1663(E) was not based on the OIE's Terrestrial Code, nor did it take in to account the risk assessment techniques that were developed with the code.[136] India claimed that its import ban on livestock products from countries notifying AI was for the purpose of preventing the transmission of AI to humans and also to poultry as well as ensuring food safety and protecting poultry and wild birds from AI. The ban, however, was not based on scientific principles and sufficient scientific evidence as provided for in the OIE's Terrestrial Code vide its risk assessment techniques.[137] Consequently, India lost its right to decide upon its appropriate level of protection with regard to AI-affected livestock in its territory.

India failed to conform to the risk assessment techniques in various aspects. Risk assessment arising from concern about animals and animal products mandates the *identification of hazards* from pathogenic agents that can potentially have adverse consequences once the product enters the importing country.[138] This obligation is underpinned by the risk assessment process set forth in the SPS Agreement, which, as mentioned in the previous paragraphs, requires the determination of the "likelihood of the entry, establishment or spread of the disease or pests…."[139] Consequently, even though the Appellate Body, in the *Japan–Apples* dispute, clarified that members would in certain situations be permitted to set out measures that prevent even negligible risk while determining the "likelihood of the entry, establishment or spread of the disease or pests", the standards to identify such "negligible risk" would be extremely stringent.[140] The Appellate Body and the panel in this dispute had the opportunity to scrutinize whether the risk claimed by Japan regarding the "likelihood of entry, establishment and spread" of fire blight in apples imported from the United

States was appropriately evaluated. Japan, in this dispute, had imposed an SPS measure on the importation of apples that were affected with fire blight. Fire blight is a disease that can be found in apples, pears and some other garden fruits and is often transmitted from external openings of these fruits through wind, rain or insects. Japan, however, permitted the importation of apples from the United States in situations where the export apples were harvested in a fire blight–free orchard. If the apple was harvested with other plants, the orchard must be free from fire blight and additionally must be outside a 500m radius from fire blight–affected orchards.[141] In this regard, the question before the Appellate Body and the panel was whether Japan was right in imposing the SPS measure and, particularly, whether there had in fact been a "likelihood of the entry, establishment and spread" of fire blight from the apple fruit as such. In other words, what the panel had to decide was whether a rational and objective relationship between the risk arising from fire blight in apples and the risk assessment adopted by Japan existed. The United States argued that the risk assessment done by Japan as a basis for imposing the SPS measure prohibiting the importation of U.S. apples was not in keeping with the Japanese requirements for such importation. The United States pointed out that Japan's risk assessment vide the 1999 PRA, which analyzed the "probability and pathway for the likelihood, entry, and spread" of fire blight, was not specific to apples. In other words, the 1999 PRA determined the probability of fire blight entering from a variety of host fruits, and not specifically the probability with reference to apples.[142] The Appellate Body, in upholding the panel's findings, agreed with the United States' allegations and held that there must exist a "specific risk", for which the risk assessment must be performed in accordance with Article 5.1 of the SPS Agreement (and, implied, Article 2.2 of the agreement).[143] For this reason, while the 1999 PRA concluded a risk existed on the basis of the likelihood, entry and spread from various host fruits, it failed to be "sufficiently specific" to be in accordance with the SPS Agreement. As a result, the Appellate Body ruled that the risk assessment undertaken by Japan could not be considered to have a "rational and objective relationship" with the scientific evidence.[144]

It is against this backdrop that the defining line between the first set of risk assessments (risk arising from diseases and pests: quarantine risks) and the second set (food-borne risk) has been the fact that while the former mandates a quantitative analysis of the risk even while it does not set out a minimum threshold, the latter, on the contrary, calls for a qualitative analysis of the risk arising from food-borne diseases such as additives and contaminants. This defining line has thus been better explained with the use of the terms "likelihood" in the first form of risk assessment as

against the use of the term "potential" in the second form. The differences between these concepts have been elucidated in the case before the Appellate Body pertaining to the *Australia–Salmon* dispute.[145] The key contentions were whether Australia had rightly imposed an import prohibition on fresh, chilled and frozen salmon. Accordingly, the Appellate Body, while ruling against Australia for failing to meet the prerequisites of risk assessment as set forth in Article 5.1 by not calculating the economic and biological consequences of the potential disease that the importation of salmon would impose,[146] additionally underscored that the use of the term "likelihood" would, according to the ordinary meaning, imply probability, while the use of the term "potential", in the second sentence, would ordinarily imply possibility.[147] Hence, the Appellate Body clarified that any risk assessment within the scope and meaning of Article 5.1 of the SPS Agreement must satisfy three steps: (1) identify the risk that the concerned member wishes to prevent; (2) evaluate the likelihood of risk; and (3) evaluate the likelihood of risk based on the contemplated SPS measure.[148] However, in the *EC–Hormones* dispute, the Appellate Body made the point that even in the ordinary interpretation of the terms "likelihood" and "potential", the necessity for a quantitative and qualitative analysis respectively could be inferred. Hence, a qualitative analysis of the "likelihood of the entry, establishment or spread" of quarantine risks as provided in Annex A would completely rule out the scope for including a qualitative component.[149] The Appellate Body thus clarified that risk assessment would, in turn, include even qualitative analysis that was not susceptible to "empirical or experimental laboratory methods."[150] Along the same lines, the Appellate Body ruled that:

> The risk that is to be evaluated in a risk assessment under Article 5.1 is not only risk ascertainable in a science laboratory operating under strictly controlled conditions, but also risk in human societies as they actually exist, in other words, the actual potential for the adverse effect on human health in the real world where people live and work and die.[151]

As far as the import ban imposed by India on AI, the technique outlined by the Terrestrial Code primarily requires the identification of whether the said disease is already present in the territory of the importing country, in turn requiring the determination of the "likelihood of the entry, establishment and spread" of AI within India according to the obligations set forth in articles 5.1. and 5.2 (discussed above). At the same time, the SPS Agreement in general mandates that "SPS 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."[152]

India's ban on AI erred, firstly, by not basing itself on the Terrestrial Code, when the latter first calls for the hazard identification[153] (coupled with the analysis of the likelihood of the entry, establishment and spread of such disease)[154] based on the determination of whether the importing country has itself been undertaking eradication measures for the particular disease (when such disease exists in its own territory).[155] For this purpose, the technique set out by the Terrestrial Code underlines the need for zoning and compartmentalization in order to assess the likelihood of the hazard posed by the disease. India, in complete disregard, failed to recognize zones and compartments.[156] Further, the SPS Agreement itself addresses the need for members to recognize disease- and pest-free areas when imposing SPS measures[157] (therefore implying the recognition of zones and compartments). India furthermore breached this obligation.[158] Even while India itself faced the problem of both HPAI and LPAI in its own territory, it treated its own domestic products far differently than it did imported products. In the former situation, by virtue of the NAP, 2012, India permitted the movement of domestic livestock that were situated outside a ten-kilometre radius, but altogether banned the importation of livestock products from countries that had notified AI in their territory.[159] India therefore did not recognize zones and compartments in the same manner as it did for its own livestock products. India's action was thus more trade restrictive than it was within its own territory and, hence, breached the first requirement of the risk analysis technique of the Terrestrial Code.[160] The code did not recommend imposing a complete import ban on the affected livestock products; nevertheless, India imposed a ban.[161]

Secondly, risk assessment also calls for an examination of whether the cause of the hazard is already present in the importing country and whether the requisite surveillance has been undertaken for the detection of the same. India breached this obligation when it banned livestock products from countries reporting LPNAI while not at the same time maintaining a reliable surveillance program to detect LPNAI in its own territory.[162] Further, it claimed that LPNAI was exotic to its territory when it fact it was not.[163] In a similar context, as the Terrestrial Code indicates, a risk evaluation calls for an assessment of the risk of entry and exposure, and associated consequences, arising from imports. India was obligated to undertake the risk assessment. On the contrary, India entirely banned the (livestock) products on the grounds that it would not have any control over measures already undertaken by the exporting country. The measures taken by the exporter were considered effective enough to prevent the spread of NAI.[164] India could not then effectively state that it had assessed the probability or likelihood of the risks that NAI would impose. Further, imported livestock products would pose no additional risk, if zones and compartments

were recognized. Hence, India violated its obligation to demonstrate the rational and objective relationship that its so-called method and technique of risk assessment had with its ban on AI-affected livestock (India's SPS measure).[165]

Furthermore, while India was unsuccessful at satisfying the requirement that its risk assessment take in to account the techniques developed for this purpose by the Terrestrial Code, it simultaneously violated a fundamental objective of the SPS Agreement – to have measures based on "sufficient scientific evidence".

4. Concluding Remarks

The panel's ruling in *India–Measures concerning the Importation of Certain Agricultural Products* made an important contribution to the international jurisprudence on risk assessment. India's import ban on livestock products vide its Livestock Act, 1898 coupled with the S.O. 1663(E), violated a fundamental premise of the SPS Agreement – of conducting risk assessments based on the relevant techniques adopted by a recognized international organization. Even though the SPS Agreement permits a member to delineate its individual ALOP, it simultaneously mandates that such an ALOP be well grounded in internationally recognized risk assessment procedures. In the case under dispute, India had determined its ALOP to be an import ban intended to prevent the migration of HPNAI and LPNAI into its territory. As outlined in the previous sections, the SPS Agreement obligates its members to take into account scientific principles and, thus, also scientific evidence when conducting its assessment of risk. It is only when this prerequisite has been duly met that members would be justified in deciding their own "appropriate levels of protection" in keeping with Article 5.6 of the SPS Agreement.[166] In the event that a member imposes an SPS measure that is more trade restrictive than that required, the aggrieved member must prove that another SPS measure already exists (is reasonably available) on the basis of technical and economic feasibility. Further, the measure would have to achieve the importer's ALOP; it would additionally have to be less trade restrictive than the SPS measure currently being imposed.[167] India failed to conduct a risk assessment for its AI measures, and thus had no subsequent right to decide upon its individual ALOP. It also breached the obligation to decide on its ALOP on the basis that it be "not more trade restrictive than required". In other words, India failed to take into account the existing SPS measure already available (i.e., the recognition of zones and compartments of NAI-free areas. On the contrary, India directly imposed a complete ban on livestock products from countries that have reported NAI.[168] India's SPS measure was thus more restrictive than the one already existing as per the Terrestrial Code. While the Terrestrial Code recommends the use of

veterinary certificates, after a thorough inspection of the livestock, from countries claiming freedom from NAI, India claimed that the use of such certificates would not be economically and technically feasible because India lacked the capacity to deal with the increase in imports.[169] In this regard, India's ALOP was proved to be more trade restrictive than necessary because the country already permitted imports from NAI-free countries. It would utilize the same (existing) "capacity" in permitting imports from NAI-free zones and compartments as well.[170]

Unfortunately, in thus deciding its ALOP, India over-stepped its responsibility for conducting the requisite risk assessment. It failed to demonstrate the relationship its risk assessment technique had with existing scientific evidence vide the OIE's Terrestrial Animal Health Code. India's SPS measure not only failed to be based on the Terrestrial Code, it also failed to undertake the risk assessment in accordance with the technique developed by the Terrestrial Code, read along with the provisions of the SPS Agreement. Consequently, the ban on AI-affected livestock products resulted in the creation of a discriminatory environment between nations where similar conditions were prevailing. The import ban was more trade restrictive than necessary.

Endnotes

[1] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 284 (1999), 1868 U.N.T.S. 279, 33 I.L.M. 1125 (1994) [hereinafter AD Agreement].

[2] Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 231 (1999), 1869 U.N.T.S. 14. [Not reproduced in I.L.M.]

[3] Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 320 (1999), 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter TRIPS Agreement].

[4] Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS, 1868 U.N.T.S. 120, 18 I.L.M. 1979 (1994) [hereinafter TBT Agreement].

[5] *See, generally*, Marcos A. Orellana, *Evolving WTO Law Concerning Health, Safety and Environmental Measures*, 1(1) TRADE L. & DEV. 103 (2009); World Trade Organization & World Health Organization, *WTO Agreements and Public Health: A Joint Study by the WHO and WTO*, (2002), http://www.wto.org/english/res_e/booksp_e/who_wto_e.pdf

[6] WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 4 (1999), 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994) [hereinafter Marrakesh Agreement or WTO Agreement].

[7] Agreement on the Application of Sanitary and Phytosanitary Measures, 15 April, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Legal Instruments – Results of the Uruguay Round, 33 I.L.M. 1226 (1994) [hereinafter SPS Agreement].
[8] JOANNE SCOTT, THE WTO AGREEMENT ON SANITARY AND PHYTOSANITARY MEASURES: A COMMENTARY 3 (2007).
[9] The seven disputes in which a panel was set up were as follows: two in the matter of the EU ban on growth hormones against the United States and Canada (Appellate Body Report, *European Communities – Measures concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R, WT/DS48/AB/R (16 January, 1998) [hereinafter Appellate Body Report, *EC – Hormones*]); two disputes to adjudicate the Australian restriction on importation of salmon from the United States (Appellate Body Report, *Australia – Measures Affecting Importation of Salmon*, WT/DS18/AB/R, (20 October, 1998) [hereinafter Appellate Body Report, *Australia – Salmon*]); one dispute in the matter of the Japanese measure requiring that certain fruits be tested for the efficacy of the fumigation before importation (Appellate Body Report, *Japan – Measures Affecting Agricultural Products*, WT/DS76/AB/R (22 February, 1999) [hereinafter Appellate Body Report, *Japan – Agricultural Products II*]); the Japanese measure on fire blights that consequently restricted the importation of apples from the United States (Appellate Body Report, *Japan – Measures Affecting the Importation of Apples*, WT/DS245/AB/R, (26 November, 2003) [hereinafter Appellate Body Report, *Japan –Apples*]); and a dispute raised by the United States concerning the recent Indian measure prohibiting agricultural products such as poultry with the aim of preventing the spread of avian influenza (AI) (Panel Report, *India – Measures concerning the Importation of Certain Agricultural Products*, WT/DS430/R (Oct. 14, 2014)).
[10] Panel Report, *India–Measures concerning the Importation of Certain Agricultural Products*, WT/DS430/R (Oct. 14, 2014).
[11] Larry Keener, *Capacity Building: Harmonization and Achieving Food Safety, in* ENSURING GLOBAL FOOD SAFETY: EXPLORING GLOBAL HARMONIZATION 139, 144 (Christine Boisrobert et al., eds., 2010).
[12] Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS, 1868 U.N.T.S. 120, 18 I.L.M. 1979 (1994) [hereinafter TBT Agreement].
[13] In general, Article 1 of the SPS Agreement sets out the mandate of the agreement by underscoring that the agreement would be applicable to all sorts of "sanitary and phytosanitary measures that directly or indirectly affect international trade." SPS AGREEMENT, *supra* note 7, Art. 1.
[14] SPS AGREEMENT, *supra* note 7, Article 2.2. read along with Article 5.1.
[15] SPS AGREEMENT, *supra* note 7, Annex A: 1 (a), (c) and (d).
[16] SPS AGREEMENT, *supra* note 7, Annex A: 1(b).
[17] SPS AGREEMENT, *supra* note 7, Annex A: 4.
[18] *Id.*
[19] SPS AGREEMENT, *supra* note 7, Art. 5.1.
[20] The Codex Alimentarius Commission (CAC) involves the membership of almost all of the world's countries, with a mandate to regulate safety in food trade, for which it develops standards, guidelines and codes in its endeavour to harmonize regulations involving fair trade in food for the benefit of consumers. The detailed agenda and working practice of the CAC may be seen on http://www.codexalimentarius.org/
[21] The World Organization for Animal Health (hereinafter referred to as OIE, the French acronym) is responsible for developing standards, guidelines and recommendations for preserving animal health in international trade, for which the OIE develops various codes on

the subject matter. Of particular relevance to the dispute at hand is the Terrestrial Code developed by the OIE, which aims to set out (vide the Foreword to the 21st ed. Terrestrial Code: Para 1) "standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in terrestrial animals (mammals, birds and bees) and their products." The Terrestrial Code (vide Para. A) therefore endeavours to prevent the spread of infectious diseases in the importing country and thus gives consideration to the animal health status in the country of export, for the purpose of preserving animal health security. All in all (vide the Foreword to the 21st ed. Terrestrial Code: Para 4), the Terrestrial Code mandates that measures for the purpose of preserving health of animals must be based on the latest available scientific evidence.

These codes may be accessed on http://www.oie.int/eng/normes/en_norm.htm.

[22] Similar to the CAC and the OIE, the International Plant Protection Convention (IPPC) also develops standards, guidelines and codes, but in this case for the prevention of the spread of diseases and pests in plants. A detailed discussion of the work of the IPPC may be seen on http://www.ippc.int/.

[23] SPS AGREEMENT, *supra* note 7, Art. 3.1. Also *see, generally*, World Trade Organization, *The World Trade Report, Exploring the links between trade, standards and the WTO*, http://www.wto.org, (last updated 30 June 2005).

[24] SPS AGREEMENT, *supra* note 7, Art. 2.1 read along with Art. 2.3.

[25] Alan Sykes, *Regulatory Protectionism and the Law of International Trade*, 66 U. CHI. L. REV. 1, 31-5 (1999).

[26] SPS AGREEMENT, *supra* note 7, Art. 2.2.

[27] SPS AGREEMENT, *supra* note 7, Art. 5.1.

[28] *Id.*

[29] SPS AGREEMENT, *supra* note 7, Art. 3.3. Accordingly, a footnote to Article 3(3) of the SPS Agreement creates a presumption in favour of the existence of scientific justification when on the "basis of an examination and evaluation of available scientific information in conformity with the relevant provisions of the Agreement, a Member determines that the relevant international standards, guidelines or recommendations are not sufficient to achieve its appropriate level of sanitary or phytosanitary protection."

[30] *Id.*

[31] SPS AGREEMENT, *supra* note 7, Art. 5.8.

[32] SPS AGREEMENT, *supra* note 7, Art. 5.7.

[33] *Id.* In order to provisionally adopt measures in circumstances when the existing scientific evidence is insufficient, members must commit to obtain additional information for a more objective assessment of the risk and must therefore also undertake to review the said SPS measure within a reasonable period of time. In this regard, the Appellate Body in the *EC–Hormones* case clarified that while the precautionary principle does not over-ride the need for risk assessment and scientific evidence in accordance with Articles 5.1 and 2.2 of the SPS Agreement, the said principle can be applied in circumstances where life is threatened or damage to human health is concerned. *See* Appellate Body Report, *EC – Measures concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R, 1998, at Paras. 124-125.

[34] The precautionary principle has been a vital facet of environmental law, and saw its origin in the framing of the German environmental policy that reflected upon the German Vorsorgeprinzip, or the principle of foresight planning. The principle subsequently formed part of the Rio Declaration on Environment and Development (UN Conference on Environment and Development, 1992) vide Principle 15, which states: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." In other words, the Rio Declaration specifically understands that at times,

complete reliable evidence may not be present, or may be insufficient, and in cases of potential dangers, the government may need to adopt SPS measures beyond the scientific evidence in order to prevent such dangers. For a detailed discussion on the application of the precautionary principle under the SPS Agreement, *see* Akrawat Laowonsiri, *Application of the Precautionary Principle in the SPS Agreement*, 14 Max Planck UNYB, 565-623 (2010); and Bryan Mercurio & Dianna Shao, *A Precautionary Approach to Decision Making: The Evolving Jurisprudence on Article 5.7 of the SPS Agreement*, 2.2. TRADE LAW & DEVELOPMENT, *195-223 (2010).*

[35] SPS AGREEMENT, *supra* note 7, Art. 3.3, which states, in part: "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."

[36] SPS AGREEMENT, *supra* note 7, Art. 5.7.

[37] This is for the reason that, while the principles of most-favoured-nation treatment and national treatment are applicable in circumstances where there has been discrimination between two "like" products, the chapeau of Article XX is, like Article 2.3. of the SPS Agreement, applicable when the discrimination is on the basis of the prevailing conditions (and not products).

[38] SPS AGREEMENT, *supra* note 7, Art. 2. 3.

[39] SPS AGREEMENT, *supra* note 7, Art. 7.

[40] SPS AGREEMENT, *supra* note 7, Annex B (1).

[41] SPS AGREEMENT, *supra* note 7, Annex B (2).

[42] SPS AGREEMENT, *supra* note 7, Annex B (5).

[43] *Supra* note 9.

[44] *See* World Organization for Animal Health (hereinafter referred to as OIE), *Glossary to the Terrestrial Code*, p.13, available at http://web.oie.int/eng/normes/mcode/en_glossaire.pdf. The glossary defines zoonosis as "any disease or infection which is naturally transmissible from animals to humans."

[45] AI in the form of HPAI causes high mortality due to being highly infectious and of high virulence. It is defined as H5 and N7 viruses, which cause more than 75 percent mortality in poultry. For a more detailed discussion on HPAI, *see* World Health Organization, *Avian Influenza Fact Sheet*, http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html> (last updated March 2014); Fowl Plague, Grippe Aviaire, *High Pathogenicity Avian Influenza*, The Centre for Food Security and Public Health (Iowa State University) in collaboration with the Institute of International Cooperation in Animal Biologics (World Organization for Animal Health, hereinafter referred to as OIE), http://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/HPAI.pdf (Jan. 8, 2009); and Food and Agriculture Organization, *H5N1 HPAI: Global Overview*, Issue 31, Jan-March 2012, available at http://www.fao.org/docrep/015/an388e/an388e.pdf

[46] LPAI is primarily found in wild birds and aquatic species such as geese, ducks and gulls, and is of low virulence, causing ruffled feathers, respiratory problems and diminished egg production. For a detailed discussion on LPAI, *see* Thijs Kuiken, *Is Low Pathogenic Avian Influenza Virus Virulent For Wild Waterbirds?* Proc R Soc B 280 (2013), http://rspb.royalsocietypublishing.org/content/royprsb/280/1763/20130990.full.pdf; and Johanna MJ Rebel, Ben Peeters, Helmi Fijten, Jacob Post, Jan Cornelissen and Lonneke Vervelde, *Highly Pathogenic Or Low Pathogenic Avian Influenza Virus Subtype H7N1*

Infection In Chicken Lungs: Small Differences In General Acute Responses, Veterinary Research (2011), http://www.veterinaryresearch.org/content/pdf/1297-9716-42-10.pdf.

[47] Highly Pathogenic Notifiable Avian Influenza (HPNAI) is defined vide the OIE's Terrestrial Code as those forms of HPAI that cause a minimum of 75% mortality in four- to six-week-old chickens that have been infected intravenously with the H5N7 virus. On the other hand, Lowly Pathogenic Notifiable Avian Influenza (LPNAI) is a form of N5H7 virus, which is not a HPNAI. *See* World Organization for Animal Health (hereinafter referred to as OIE), Terrestrial Animal Health Code, Art. 10.4.1.2 (a) and (b), Vol. 1, 21st Ed., (2012) available at http://www.oie.int/doc/ged/d12376.pdf, cited in Panel Report, *India Measures Concerning the Importation of Certain Agricultural Products*, WT/DS430/R (Oct. 14, 2014), Para 2.13-2.15.

[48] Food and Agriculture Organization, What Part Do Wild Birds Play in the Transmission of Avian Influenza? http://www.fao.org/avianflu/en/qanda.html, cited in Panel Report, *India–Measures concerning the Importation of Certain Agricultural Products*, WT/DS430/R (Oct. 14, 2014), Para 2.18.

[49] World Health Organization, *Avian Influenza in Humans*, <http://www.who.int/influenza/human_animal_interface/avian_influenza/en/> (Jan. 7, 2015). Also *see*, for a detailed discussion on the transmission of AI to humans, Ron A.M. Fouchier, et al., *Avian Influenza A Virus (H7N7) Associated with Human Conjunctivitis and a Fatal Case of Acute Respiratory Distress Syndrome*, Proceedings of the National Academy of Sciences of the United States of America 101.5, p.1356–1361, (2004); Pham Ngoc Dinh, et al., *Risk Factors for Human Infection with Avian Influenza A H5N1, Vietnam, 2004*, 12(2) EMERGING INFECTIOUS DISEASES 1841–1847 (2006).

[50] WHO, *Human infection with avian influenza A (H7N9) virus – update*, http://www.who.int/csr/don/2013_07_20/en/index.html cited in Panel Report, *India Measures Concerning the Importation of Certain Agricultural Products*, WT/DS430/R (Oct. 14, 2014), Para 6.12 (footnote 53).

[51] Livestock Importation Act, Act No. 9 of 1898, as amended by the Livestock Importation (Amendment) Act, No. 28 of 2001.

[52] Department of Animal Husbandry, Dairying and Fisheries (hereinafter referred to as DAHD), *Statutory Order (S.O.) 1663(E)/F No. 109-21/2007*, Aug. 29, 2011.

[53] SPS AGREEMENT, *supra* note 7, Art. 2.2 & 5.1.

[54] Livestock Importation Act, *supra* note 51, Sec. 2 (c) defines importation as "the bringing or taking, by sea, land or air" to India.

[55] *Id.* Sec. 2(b), which defines livestock to include "horses, kine, camels, sheep and any other animal which may be specified by the Central Government by notification in the Gazette."

[56] *Id.* Sec. 2(a), which defines an infectious or contagious disease to include "tick-pest, glanders, farcy, scabies and any other disease or disorder which may be specified by the Central Government by notification in the Official Gazette."

[57] *Id.* Sec 3, which sets out the power of the central government to regulate, restrict or prohibit the importation of livestock that has been infected with an infectious or contagious disease. It states, "**Power to regulate importation of live-stock** – (1) The Central Government may by notification in the official Gazette, regulate, restrict or prohibit, in such manner and to such extent as it may think fit, [the import], into [India], or any specified place therein, of any stock which may be liable to be affected by infectious or contagious disorders, and of any fodder, dung, stable-litter, clothing harness or fittings appertaining to live-stock or that may have been in contact therewith."

[58] Livestock Importation (Amendment) Act, No. 28 of 2001.

[59] Livestock Importation Act, *supra* note 51, Sec. 2 (d) defines livestock products to include "meat and meat products of all kinds including fresh, chilled and frozen meat, tissue, organs of poultry, pig, sheep, goat, egg and egg powder, milk and milk products, bovine, ovine and caprine, embryos, ova, semen; pet food products of animal origin and any other animal product

which may be specified by the Central Government by notification in the Official Gazette." As well, Section 3(2) of the Livestock Act, 1898 specifies that a notification by the central government under Section 3 of the Livestock Act operates as though the Customs Act, 1962 has issued it, by virtue of Section 11 of the Act.

[60] Department of Animal Husbandry, Dairying and Fisheries (hereinafter referred to as DAHD), *Statutory Order (S.O.) 1663(E),* Para. 1, Aug. 29, 2011.

[61] The Prevention and Control of Infectious and Contagious Diseases in Animals Act, Central Act No. 27 of 2009 (hereinafter referred to as the Prevention of Diseases Act).

[62] *Id.* Sec. f (9).

[63] National Action Plan, 2012, which sets out the action plan to respond to the global epidemic of AI, the actions requisite to prevent the further spread and also the persons eligible to handle the AI that has been notified (i.e., notifiable AI) (hereinafter referred to as NAP, 2012).

[64] Livestock Importation Act, Act No. 9 of 1898, as amended by the Livestock Importation (Amendment) Act, No. 28 of 2001.

[65] DAHD, *Statutory Order (S.O.) 1663(E)/F No. 109-21/2007,* Aug. 29, 2011.

[66] Panel Report, *India–Measures concerning the Importation of Certain Agricultural Products*, WT/DS430/R Para. 7. 352 – 7.353 & 7.392 (Oct. 14, 2014).

[67] *Id.* Para. 7.354.

[68] *Id.* Para. 7.270.

[69] *Id.* Para. 3.1. The United States alleged that India's measures were inconsistent with the SPS Agreement because they were not based upon scientific evidence (Art. 2.2. of the SPS Agreement) in conformity with the relevant international standards, guidelines or recommendations of the OIE (Art. 5.1 of the SPS Agreement). Neither were India's measures based on an appropriate risk assessment that took into account the risk posed to human, animal or plant health and life (Art. 5.1. of the SPS Agreement); hence, India also failed to give due account to the available scientific evidence, relevant production and process methods, and recognition of HPNAI- and LPNAI-free zones and compartments. In such circumstances, the United States claimed that India had applied AI measures that were arbitrarily or unjustifiably discriminatory between members where similar conditions prevail, including between India itself and other exporting countries (Art. 2.3. and 5.5 of the SPS Agreement). For a detailed discussion on the SPS Agreement, *see* JOANNE SCOTT, *supra* note 8.

[70] *Addendum:* Report of the Panel, *India–Measures concerning the Importation of Certain Agricultural Products*, WT/DS430/R/Add.1, Para. 101 (Oct. 14, 2014).

[71] *Id.* Para. 101-102. Also *see* Art. 1 of the SPS Agreement, which provides in the relevant part, "This Agreement applies to all sanitary and phytosanitary measures which may, directly or indirectly, affect international trade…." The agreement accordingly defines an SPS measure vide Annex A as follows:

> Any measure 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.
> Sanitary or phytosanitary measures include all relevant laws, decrees, regulations, requirements and procedures including, inter alia, end product criteria; processes and

production methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transport of animals or plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; and packaging and labeling requirements directly related to food safety."

[72] *Id.*

[73] SPS AGREEMENT, *supra* note 7, Annex A: 1. Also *see* Panel Report, *India–Agricultural Products*, Para. 7.159-160.

[74] SPS AGREEMENT, *supra* note 7, Art. 3.2.

[75] *Id*. Art. 3.1.

[76] SPS AGREEMENT, *supra* note 7, Art. 5.1 and 5.2.

[77] SPS AGREEMENT, *supra* note 7, Annex A: 1(b).

[78] SPS AGREEMENT, *supra* note 7, Annex A: 3; and the Appellate Body Report, *US–Hormones*, para. 693.

[79] *Id.*

[80] *Id.* Art. 3.2.

[81] *Id*. Art. 3.1.

[82] Appellate Body Report, *EC-Hormones*, para. 163, 170-172.

[83] *Id.*

[84] *Id.*

[85] *Id.*

[86] SPS AGREEMENT, *supra* note 7, Art. 3.3.

[87] SPS AGREEMENT, *supra* note 7, Annex A: 5 defines ALOP as "the level of protection deemed appropriate by the Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory." Against this backdrop, Art. 4(1) of the SPS Agreement permits members to invoke SPS measures that are different from their own if the importing member is able to demonstrate that it achieves its (own) ALOP. Accordingly, Art. 5 (3), (4) and (6) provides that members should take in to account certain economic factors such as the potential damage to sales, etc., and hence aim at minimizing the negative trade effects, without being more trade restrictive than necessary. In this regard, the onus of determining the ALOP is extremely strict. Accordingly, the Appellate Body in the *EC–Hormones* dispute underscored the prerequisite of there being a rational relationship between the SPS measure and the risk. In a related vein, the panel in the *Japan–Apples* dispute clarified that even though members are permitted to set out measures that prevent even negligible risk, the standards to adopt such "negligible risk" are extremely stringent. *See* Appellate Body Report, *EC–Hormones*, WT/DS26/AB/R, WT/DS48/AB/R (16 January, 1998); and Appellate Body Report, *Japan–Apples*, WT/DS245/AB/R, (26 November, 2003).

[88] SPS AGREEMENT, *supra* note 7, Art. 2.2.

[89] Jan Bohanes, *Risk Regulation in the WTO Law: A Procedure Based Approach to the Precautionary Principle*, 40 COLUM. J. OF. TRANSNAT'L. L. 323 (2002).

[90] For a detailed understanding on the role of science in the assessment of risk, *see* Lukasz Gruszczynski, *Science in the Process of Risk Regulation under the WTO Agreement on Sanitary and Phytosanitary Measures*, 7 (4) GERMAN LAW JOURNAL, 371-398 (2006); Lukasz Gruszczynski, *The role of science in risk regulation under the SPS Agreement*, (2006); Eun Sup Lee, et al. *Scientific Principle under the SPS Agreement*, 3 INTL CONFERENCE ON E-BUSINESS, MANAGEMENT AND ECONOMICS 148 - 153 (2010); and Jacqueline Peel, *Risk Regulation under the WTO SPS Agreement: Science as an International Normative Yardstick*? JEAN MONNET WORKING PAPER 02/04, NYU School of Law (2004).

[91] SPS AGREEMENT, *supra* note 7, Annex A: 4.

[92] Appellate Body Report, *United States–Continued Suspension of Obligations in the EC–Hormones Dispute*, WT/DS320/AB/R Para. 527 (16 October, 2008) (hereinafter Appellate

Body Report, *US–Hormones*); and Appellate Body Report, *EC–Hormones*, WT/DS26/AB/R, WT/DS48/AB/R para. 187 (16 January, 1998).
[93] Panel Report, *India–Agricultural Products*, para. 7.206 & 7.162.
[94] *Id.* para. 7.162-7.164.
[95] *Id.* Para. 7.168.
[96] *Id.*
[97] OIE, Terrestrial Animal Health Code, Chapter 10.4, Vol. 1, (2014) available at http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_avian_influenza_viruses.htm, cited in Panel Report, *India–Agricultural Products*, Para 7.219.
[98] *Id.* Para 7.219-7.227.
[99] DAHD, *supra* note 60.
[100] The panel noted the OIE's intentions expressed in the Terrestrial Code, vide Chapter 10.4, when the latter did not cover AI specifications on "live pigs" because they were not found to play a significant role in the transmission of AI, even when infected. In such circumstances, there would be no international standard existing to cover AI in "live pigs". Similarly, as far as "pathological material and biological products from birds" are concerned, the same is dealt with in Chapter 5.8 of the Terrestrial Code, which in turn pertains to the "International transfer and laboratory containment of animal pathogens". In this respect, since the said chapter did not cover the transmission of AI or NAI through "pathological material and biological products from birds", it would additionally imply that even this category did not act as an international standard for the transmission of AI, and consequently even the S.O. 1663(E) would not be permitted to limit international trade in these categories, being outside the scope of the Terrestrial Code. *See* Panel Report, *India–Agricultural Products*, Para 7.220-7.227.
[101] *Id.* Para. 7.235-7.253.
[102] OIE, *Glossary to the Terrestrial Code*, p.13, available at http://web.oie.int/eng/normes/mcode/en_glossaire.pdf, which defines a zone or region as "a clearly defined part of a territory containing an animal subpopulation with a distinct health status with respect to a specific disease for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade."
[103] *Id.* The glossary defines a compartment as "an animal subpopulation contained in one or more establishments under a common biosecurity management system with a distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade."
[104] The panel reflected on the recommendation of the Terrestrial Code that envisages the importation of livestock products from NAI-free zones, compartments and countries, that encourages members to import from countries, zones and compartments that have been reported to be free from NAI – both HPNAI and LPNAI – for the last 12 months in accordance with the provisions of Articles 10.4.3 and 10.4.4. *See* Panel Report, *India–Agricultural Products*, para. 7.254 - 7. 263.
[105] *Id.* Para. 7.275.
[106] SPS AGREEMENT, *supra* note 7, Art. 2.2, which provides that "Members shall ensure that any sanitary or 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."
[107] Appellate Body Report, *EC–Hormones*, Para. 180; and Appellate Body Report, *Japan–Apples*, para. 209.
[108] Appellate Body Report, *EC–Hormones*, Para. 180, which states in the relevant part, "Article 2.2 and 5.1 should be constantly read together … as Article 2.2 informs Article 5.1."
[109] The term "sufficient" with respect to "scientific evidence" as required within the context of Article 2.2 of the SPS Agreement has been clarified by the panel in *Japan–Measures Affecting Agricultural Products II*, to mean the requirement for a "rational or objective relationship"

between scientific evidence and risk assessment. *See* Panel Report, *Japan –Measures Affecting Agricultural Products II*, WT/DS76/R, *Para. 8.103 and 8.180 (27 October 1998).*

[110] SPS AGREEMENT, *supra* note 7, Art. 2.2. In the event that scientific evidence is insufficient, Art. 5.7 of the SPS Agreement (precautionary principle) states that members would be permitted to adopt provisional measures on the basis of a more objective risk assessment within a reasonable period of time.

[111] Appellate Body Report, *EC–Hormones*, Para. 186.

[112] Appellate Body Report, *EC–Hormones*, Para. 186.

[113] SPS AGREEMENT, *supra* note 7, Annex A: 4

[114] *Id.*

[115] *Id.* Art. 5.1.

[116] *Id.*

[117] Appellate Body Report, *EC–Hormones*, WT/DS26/AB/R, WT/DS48/AB/R ¶ 194 (16 January, 1998); and Appellate Body Report, *US–Hormones*, WT/DS320/AB/R ¶ 528-29 et seq (16 October, 2008).

[118] SPS AGREEMENT, *supra* note 7, Art. 5.2.

[119] As aforementioned, the panel in this dispute clarified that the relevant international standard for the matter at hand (i.e., matters concerning AI) would be the OIE's Terrestrial Code. As a result, the risk analysis technique promulgated by the Terrestrial Code would in turn be applicable as the appropriate risk assessment technique for SPS measures imposed by importing members with regard to AI. Panel Report, *India–Agricultural Products*, Para. 7.4.2.2.1.2.

[120] OIE, Terrestrial Animal Health Code, Chapter 2.1, Vol. 1, Art. 2.1.1. (2014) available at http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_import_risk_analysis.htm,

[121] *Id.*

[122] *Id.* Art. 2.1.1, 2.1.2. and 2.1.4. read along with Chapter 10.4 (Terrestrial Animal Health Code).

[123] *Id.* Art. 2.1.2.

[124] *Id.*

[125] *Id.*

[126] *Id.*

[127] *Id.*

[128] *Id.* Art. 2.1.3.

[129] *Id.* Art. 2.1.4. Para. 1.

[130] *Id*. Para.2.

[131] *Id*. Para.3.

[132] *Id.* Para. 4

[133] *Id.* Art.2.1.5. Para. 2.

[134] SPS AGREEMENT, *supra* note 7, Art. 5.6.

[135] Shorter Oxford English Dictionary, 6th edn. (A. Stevenson ed., 2007), as cited in Panel Report, *India–Agricultural Measures*, para. 7.559-7.562.

[136] *Id.* Para. 7.307. The panel in this dispute clarified that in the matter at hand, India was under the duty to first undertake a risk assessment pursuant to the risk assessment techniques developed by the relevant International Organization, also taking into account the relevant scientific evidence, etc., in accordance with Art. 5.2 of the SPS Agreement; and also to *base* its measures on this risk assessment.

[137] OIE, Terrestrial Animal Health Code, Chapter 2.1, Vol. 1, (2014) available at http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_import_risk_analysis.htm, cited in Panel Report, *India–Agricultural Products*, Para 7.286.

[138] *Id.* Art. 2.1.2.

[139] SPS AGREEMENT, *supra* note 7, Annex A: 4.

[140] Appellate Body Report, *Japan–Apples*, WT/DS245/AB/R (26 November, 2003).
[141] *Id.* Para. 15.
[142] Panel Report, *Japan–Measures Affecting the Importation of Apples*, WT/DS265/R Para. 8.252 (15 July, 2003).
[143] *Id.* Para. 200-209.
[144] *Id.* Para 200-216.
[145] Appellate Body Report, *Australia–Measures Affecting Importation of Salmon*, WT/DS18/AB/R, (20 October, 1998) (hereinafter Appellate Body Report, *Australia–Salmon*).
[146] *Id.* Para. 128-38.
[147] *Id.*
[148] *Id.* Para 135.
[149] Appellate Body Report, *EC-Hormones*, Para. 187. Also, *see* Jan Bohanes, *Risk Regulation in the WTO Law: A Procedure Based Approach to the Precautionary Principle*, 40 COLUM. J. OF. TRANSNAT'L. L. 375-386 (2002). The view of the Appellate Body in the dispute in this instance with reference to the inclusion of even a qualitative analysis in risk assessment techniques adopted in determining the "likelihood of the entry, establishment and spread" of quarantine risks has been criticized due to its introduction of value judgments in risk assessment, which also permits room for protectionist policies in the garb of risk assessment. *See* Reinhard Quick & Andreas Bluthner, *Has the Appellate Body Erred? An Appraisal and Criticism of the Ruling of the WTO Hormones Case*, 2 J. INT'L ECON. L. 603, 618 (1999).
[150] *Id.*
[151] *Id.*
[152] SPS AGREEMENT, *supra* note 7, Art. 2.3.
[153] Terrestrial Code, Chapter 2.1. Art. 2.1.2.
[154] SPS AGREEMENT, *supra* note 7, Art. 5.1.
[155] Terrestrial Code, Chapter 2.1. Art. 2.1.2.
[156] *Id.*
[157] SPS AGREEMENT, *supra* note 7, Art. 6, which states in the relevant part (para. 2) that "Members shall, in particular, recognize the concepts of pest- or disease-free areas and areas of low pest or disease prevalence. Determination of such areas shall be based on factors such as geography, ecosystems, epidemiological surveillance, and the effectiveness of sanitary or phytosanitary controls."
[158] Panel Report, *India_Agricultural Products*, Para. 7.9.9.2-7.9.2.6.
[159] Panel Report, *India–Agricultural Products*, Para 7.392-7.394.
[160] *Id.* Para. 7.270-7.273 and 7.405- 7.411.
[161] *Id.*
[162] *See*, *Id.* Para. 7.415-7.416 for the surveillance program of India outlined in the NAP, 2012, w.r.t. LPNAI; and read along with Para. 7.418-7.424, and 7.448 elucidating why the surveillance was unreliable. One of the experts opines that even though the northeast of India harbours migratory aquatic birds, in which LPNAI is usually present, India did nothing to detect LPNAI in these species. Hence, it cannot be concluded that the surveillance was reliable.
[163] *Id*. Para. 7.444-7454. The panel relied on the opinion of experts in order to conclude whether LPNAI was in fact exotic to India. One of the experts stated that it couldn't be reported that India is free of LPNAI because of the lack of reliable surveillance in this regard. Another expert opined that LPAI is almost always found in domestic poultry and no country can ever be 100 percent free of LPAI.
[164] *Id.* Para. 7.434.
[165] The mandate of demonstrating a rational and objective relationship between the risk assessment and the SPS measure by a member imposing an import prohibition has been upheld by the Appellate Body and panels in previous disputes as well (discussed in the above

paragraphs). *See* Appellate Body Report, *Japan–Apples* and Appellate Body Report, *Australia–Salmon*.
[166] SPS AGREEMENT, *supra* note 7, Art. 5.6.
[167] Appellate Body Report, *Australia–Salmon*, Para. 337.
[168] OIE, *Terrestrial Animal Health Code*, Art. 10.4.3 and 10.4.4, read along with Panel Report, *India–Agricultural Products*, Para. 7.254 - 7.263.
[169] *Id.* Para. 7.538.
[170] *Id*. Para. 7.543.