**BEFORE THE APPELLATE BODY**
**OF THE WORLD TRADE ORGANIZATION**

# AUSTRALIA – MEASURES AFFECTING THE IMPORTATION OF APPLES FROM NEW ZEALAND

**(AB-2010-2 / DS367)**

***Appellant Submission of Australia***

**September 7, 2010**

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# LIST OF ABBREVIATIONS USED IN THIS SUBMISSION

| **Abbreviation** | **Description** |
|---|---|
| ALCM | Apple Leafcurling Midge |
| ALOP | Appropriate level of phytosanitary protection as defined in Article 5 of Annex A to the SPS Agreement |
| DSB | Dispute Settlement Body |
| DSU | *Understanding on Rules and Procedures Governing the Settlement of Disputes* |
| *E. amylovora* | The bacterium *Erwinia amylovora* |
| GATT 1994 | General Agreement on Tariffs and Trade, opened for signature 15 April 1994, 55 UNTS 194, 1867 UNTS 187 (entered into force 1 January 1995) |
| IPPC | International Plant Protection Convention |
| IRA | Biosecurity Australia, Final Import Risk Analysis Report for Apples from New Zealand, November 2006 |
| ISPM No. 2 | International Standard for Phytosanitary Measures (ISPM) No. 2, *Framework for Pest Risk Analysis* (2007) |
| ISPM No. 5 | International Standard for Phytosanitary Measures (ISPM) No. 5, *Glossary of Phytosanitary Terms* (2008) |
| ISPM No. 11 | International Standard for Phytosanitary Measures (ISPM) No. 11, *Pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms* (2004). |
| SPS Agreement | *Agreement on the Application of Sanitary and Phytosanitary Measures*, opened for signature 15 April 1994, 1867 UNTS 493 (entered into force 1 January 1995) |
| SPS measure | Sanitary or Phytosanitary Measure as defined in Art 1 of Annex A to the SPS Agreement |
| *Vienna Convention* | *Vienna Convention on the Law of Treaties*, done at Vienna, 23 May 1969, 115 UNTS 331; 8 International Legal Materials 679 |
| *Working Procedures* | Working Procedures for Appellate Review, WT/AB/WP/5, circulated 4 January 2005 |
| *WTO Agreement* | *Marrakesh Agreement Establishing the World Trade Organization* |

# I. INTRODUCTION

## A. Panel Report

1. A Panel established by the DSB under Art 6 of the DSU, at the request of New Zealand, has submitted its findings and recommendations to the DSB in the form of a Panel Report, circulated to Members on 9 August 2010, in which it has concluded that certain measures proposed to be imposed by Australia as conditions of permitting the importation of apples from New Zealand in accordance with a risk assessment conducted by Australia infringe obligations assumed by Australia under the SPS Agreement.

2. The ultimate findings in the Panel Report at [8.1](b), (c) and (e) are that the SPS measures in issue that are proposed to be imposed by Australia comprise 16 separate SPS measures within the meaning of Annex A(1) to the SPS Agreement and that those proposed to be imposed to manage risks associated with three particular pests – fire blight, ALCM and European canker:

(1) infringe the requirements of Arts 5.1 and 5.2 of the SPS Agreement, that a Member shall ensure that its SPS measures are based on an assessment, appropriate to the circumstances, of risks to plant life or health taking into account available scientific evidence and, consequently, also infringe the requirement of Art 2.2 that a Member shall ensure that its SPS measures are based on scientific principles and are not maintained without sufficient scientific evidence; and

(2) also (with the exception of the general measures) infringe the requirements of Art 5.6 of the SPS Agreement that a Member shall ensure that its SPS measures are not more trade restrictive than required to achieve the Member's ALOP.

3. The Panel Report recommends at [8.3] that the DSB request Australia to bring the measures into conformity with its obligations under the SPS Agreement.

## B. Australia's Appeal

4. Pursuant to Art 17 of the DSU, Australia appeals certain issues of law covered in the Panel Report and legal interpretations developed by the Panel. Australia's Notice of Appeal, set out in Annex I to this Written Submission, was filed in accordance with Rule 20(2) of the

*Working Procedures* on 31 August 2010. This Written Submission is now filed by Australia in accordance with Rule 21 of the *Working Procedures*.

5. The grounds on which Australia appeals are set out in the Notice of Appeal. The arguments in support of those grounds are set out at length in Part III of this Written Submission. For ease of reference, a table linking the principal grounds and arguments to specific paragraphs in the Panel Report is set out in Annex II to this Written Submission.

6. The appeal in part concerns the proper application of the Appellate Body's recent guidance in *US/Canada – Continued Suspension*, which was circulated to Members contemporaneously with the Panel's deliberations in the present dispute. Australia submits that the Panel failed to adhere to the guidance given in *US/Canada – Continued Suspension* in two significant respects. The Panel failed properly to apply the standard of review identified in *US/Canada – Continued Suspension* at [590]-[592] for determining compliance by a Member with Arts 2.2, 5.1 and 5.2 of the SPS Agreement. The Panel also failed to comply with the requirement identified in *US/Canada – Continued Suspension* at [553] and [615]-[616] properly to engage with the critical parts of the expert testimony sought and obtained by a Panel under Art 11(2) of the SPS Agreement in order to fulfil its obligation under Art 11 of the DSU to make an "objective assessment of the facts before it".

7. In other respects, the appeal raises for the consideration of the Appellate Body significant questions of legal principle not yet the subject of fully considered guidance. These include, most significantly: the precise standard of review for determining compliance by a Member with Arts 2.2, 5.1 and 5.2 of the SPS Agreement that ought properly be brought to bear on expert judgements formed on the basis of uncertain, inconclusive or incomplete scientific data in the course of a risk assessment relied upon by the Member (a question informed by the analysis in *US/Canada – Continued Suspension* but not directly addressed in *US/Canada – Continued Suspension*); the relationship between Arts 5.1 and 5.2 of the SPS Agreement on the one hand and Art 5.6 on the other (a question that requires careful consideration after *US/Canada – Continued Suspension*); and, particularly as applied to an allegation of infringement of Art 5.6 of the SPS Agreement, the correct formulation and application of the burden of proof falling on a complaining party under the DSU to establish an infringement of a covered agreement (a question shown by David Unterhalter, "The Burden of Proof in WTO Dispute Settlement" in Merit E. Janow et al (eds), *The WTO:*

*Governance, Dispute Settlement and Developing Countries* (2008) 543 to be of general importance across the range of Panel and Appellate Body decision-making).

## C. Executive Summary of Submissions

8. In short, on the grounds set out in the Notice of Appeal and for the reasons elaborated in Part III of these Written Submissions, Australia submits that the errors of law and legal interpretation contained in the Panel Report are as follows.

*Error in finding of individual measures: ground (a)*

9. First, in ultimately finding in the Panel Report at [8.1](b) that the 16 measures identified by New Zealand as proposed to be imposed by Australia that were in issue before it "individually" constitute SPS measures as defined in Annex A(1) to the SPS Agreement, the Panel applied an incorrect legal interpretation of the definition of SPS measure in Annex A(1) to the SPS Agreement. The identification of an SPS measure requires a practical and purposive evaluation. Ancillary administrative processes or procedures (such as certification or registration) designed only to enhance the efficacy of other mechanisms that operate to protect animal or plant life or health from relevant risks (such as orchard inspection or disinfection) should not be identified as separate SPS measures so as to require separate evaluation for compliance, relevantly, with Arts 2.2, 5.1, 5.2 and 5.6 of the SPS Agreement. Such ancillary administrative processes or procedures should rather be identified and evaluated for compliance with the SPS Agreement together with the principal and operative mechanisms to which they relate. That is to say, they should be identified and evaluated together as single composite SPS measures. Correctly applying the definition in Annex A(1) to the SPS Agreement, the Panel should have found that Australia proposed to impose not 16 SPS measures but four (two in relation to fire blight and one in relation to each of ALCM and European canker); the remaining twelve measures identified by New Zealand amount to no more than administrative processes and procedures ancillary to those measures. The finding in the Panel Report at [8.1](b) should therefore be reversed. Although the Panel's error in the identification of the measures appears not to be material to its subsequent findings of infringement of Arts 2.2, 5.1, 5.2 and 5.6 of the SPS Agreement, the proper approach to the identification of SPS measures has the potential to impact significantly on the nature and scope of an assessment able to be relied upon by a Member.

*Errors in finding infringement of Arts 2.2, 5.1 and 5.2: ground (b)*

10. Secondly, in ultimately finding in the Panel Report at [8.1](c) that the measures proposed to be imposed by Australia in respect of fire blight and ALCM (and also consequently the general measures) infringe the requirements of Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement, the Panel erred in applying what is in law too exacting a standard for compliance with the first and third of the criteria identified by the Appellate Body in *US/Canada – Continued Suspension* at [591] as sufficient for a risk assessment to comply with Arts 5.1 and 5.2: that there be identification of the "scientific basis" on which the measures are adopted and that the "reasoning articulated on the basis of the scientific evidence [be] objective and coherent".

11. The IRA fully explained its methodology and fully explained the place of each intermediate step within that methodology. The IRA identified all of the scientific data relevant to each intermediate step and noted the extent to which the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty. At each intermediate step where the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty, the IRA identified the nature of the expert judgement required to be made in the light of that scientific uncertainty and recorded the judgement actually made. The Panel found no fault with the basic structure of the methodology of the IRA. The Panel rather purported to apply the first and third of the criteria identified by the Appellate Body in *US/Canada – Continued Suspension* at [591] minutely to review and find fault with expert judgements made at intermediate steps in the IRA in the light of scientific uncertainty arising from the inconclusive or incomplete nature of the available scientific data. The Panel reached its ultimate finding at [8.1](c) of the Panel Report that the measures proposed to be imposed by Australia infringe the requirements of Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement as a result of the fault which it found with expert judgements at those intermediate steps.

12. In purporting to apply the first and third of the criteria identified by the Appellate Body in *US/Canada – Continued Suspension* at [591] to the review of expert judgements made at intermediate steps in the IRA in the light of scientific uncertainty arising from the inconclusive or incomplete nature of the available scientific data, the Panel erroneously overlooked or incorrectly understood and applied that element of Art 5.1 that describes the assessment "as appropriate in the circumstances" having regard to what was

said by the Appellate Body in *US/Canada – Continued Suspension* at [562] and in *Japan – Agricultural Products II* at [84]. The Panel also erroneously overlooked or incorrectly understood and applied that element of Art 5.1 that describes the assessment as "taking into account risk assessment techniques developed by ... relevant international organizations" being, relevantly, ISPM No. 11 especially at [2.4] and ISPM No. 2 at [3.1] and [3.2]. The Panel: assessed too critically the expert judgements that were made; required too much by way of explanation as to precisely how each expert judgement was made; and failed adequately to assess the significance of the particular expert judgements with which it found fault to the outcomes of the IRA.

13. In particular, in its review of expert judgements in the IRA in the light of scientific uncertainty arising from the inconclusive or incomplete nature of the available scientific data, what the Panel should have done but failed to do was to look for and accept as sufficient compliance with Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement:

(1) as to the first criterion in *US/Canada – Continued Suspension* (that there be identification of the "scientific basis" for the measures): that the IRA identified the scientific data that was actually available together with the areas in which and degree to which the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty; and

(2) as to the third criterion in *US/Canada – Continued Suspension* (that the "reasoning articulated on the basis of the scientific evidence [be] objective and coherent"): that in the light of the identified available scientific data and in the light of the identified scientific uncertainty, the IRA recorded an expert judgement that:

    (a) was within a range that could be considered legitimate by the standards of the scientific community; or

    (b) even if outside that range, was not such as to undermine reasonable confidence in the assessment as a whole.

*Failure to make objective assessment: ground (c)*

14. Thirdly, and again in reasoning to the ultimate finding in the Panel Report at [8.1](c) that the measures proposed to be imposed by Australia in respect of fire blight and ALCM

(and also consequently the general measures) infringe the requirements of Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement, the Panel failed in important respects in the performance of its duty under Art 11 of the DSU to make an "objective assessment" of the matter before it:

(1) most significantly, by failing as required by *US/Canada – Continued Suspension* at [553] and [615]-[616] to engage with critical parts of the evidence of the experts engaged by the Panel under Art 11(2) of the SPS Agreement – including Dr Deckers on fire blight and Dr Cross on ALCM – which evidence relevantly supported the risk assessment made in the IRA; and

(2) in addition, by failing in significant respects to understand the IRA methodology as applied to the assessment of risk associated with both fire blight and ALCM.

*Errors in finding of infringement of Art 5.6: ground (d)*

15. Fourthly, the ultimate finding in the Panel Report at [8.1](e) that the measures proposed to be imposed by Australia infringe the requirements of Art 5.6 of the SPS Agreement is flawed on either or both of two bases.

16. The finding was thought by the Panel to follow from its findings, by reference to Arts 5.1, 5.2 and 2.2 of the SPS Agreement, that the IRA was not a proper risk assessment and overestimated the risk associated with the importation of apples from New Zealand. The foundation for the finding must fall away if the Panel's findings that the IRA was not a proper risk assessment and overestimated the relevant risk are set aside on grounds (b) or (c).

17. In making the finding, the Panel, in any event, misinterpreted and misapplied Art 5.6 of the SPS Agreement and misapplied the rules governing the burden of proof. In particular, the Panel acted on a legally erroneous understanding of the nature of the requirement in Art 5.6 (linking to the first requirement of Art 2.2 concerning the necessity for a measure) and its relationship with Arts 5.1 and 5.2 (linking to the other requirement of Art 2.2 concerning scientific principles and scientific evidence). The harmonious operation of Art 5.6 with Art 5.1 requires a claimant seeking to establish a breach of Art 5.6 to establish affirmatively that a risk assessment properly conducted under Art 5.1 would have to conclude that the alternative measure would achieve the Member's ALOP. The Panel failed to interpret and apply Art 5.6 in that way. It also found New Zealand to have discharged its

burden of proof according to a less stringent standard than the "*prima facie*" case, properly understood. The Panel here also (yet again) failed to engage with critical parts of the evidence, including but not limited to the evidence of Dr Deckers on fire blight and Dr Cross on ALCM, and thereby failed (yet again) in the performance of its duty under Art 11 of the DSU to make an "objective assessment" of the matter before it.

## II. FACTS

### A. Australia's Biosecurity Regime

18. Australia's right to take phytosanitary measures, consistently with the obligations it has assumed under the SPS Agreement, is enshrined in Art 2.1 of the SPS Agreement as well as Art XX(b) of GATT 1994 read with Art 2.4 of the SPS Agreement.

19. Australia enjoys the "prerogative" right to determine for itself the level of risk it considers to be acceptable; its ALOP: Annex A(5), SPS Agreement; *Australia – Salmon* at [199]. That right is unfettered except to say that in determining ALOP, Members "should ... take into account the objective of minimizing negative trade effects": Art 5.4, SPS Agreement. Australia describes its ALOP qualitatively as "a high level of protection aimed at reducing risk to a very low level, but not to zero" (IRA at B4).

20. The importation into Australia of fresh fruit is prohibited unless the Director of Animal and Plant Quarantine grants a permit: Item 64 *Quarantine Proclamation 1998*; s 13 *Quarantine Act 1908*. In deciding whether to grant a permit, the Director of Animal and Plant Quarantine must consider the level of quarantine risk if the permit were granted and whether the imposition of conditions would be necessary to limit the level of quarantine risk to one that is acceptably low: Item 70 *Quarantine Proclamation 1998*.

21. Biosecurity Australia, part of the Commonwealth Department of Agriculture, Fisheries and Forestry, is responsible for developing phytosanitary risk management measures for the importation of fruit. Those measures, once developed, are in practice implemented by the Director of Animal and Plant Quarantine in deciding whether, and if so on what conditions, to grant a permit.

## B. The IRA

22. On 27 March 2007, the Director of Animal and Plant Quarantine determined that "importation of apples can be permitted subject to the *Quarantine Act 1908*, and the application of phytosanitary measures as specified in the [IRA]" (*Biosecurity Policy Memorandum 2007/07*) (Panel Report at [2.98]).

23. The IRA was prepared by an IRA Team appointed by Biosecurity Australia comprising seven persons, from both within and outside the Australian Government, with relevant scientific and other expertise (Panel Report at [2.28]). The IRA was issued in November 2006 after a process of technical pest risk assessment and pest risk management, formal consultation with stakeholders and members of the public, review by an Eminent Scientist Group (IRA at B8-9) and the opportunity, not taken up by New Zealand, for administrative appeal. The Panel described the background to the IRA, its scope and methodology in its Report at [2.26]-[2.67].

24. The IRA Team determined that the risks from certain pests associated with the importation of apples from New Zealand exceed Australia's ALOP and that certain phytosanitary measures to reduce the risks are required. While the precise identification of those measures is the subject of the first ground of appeal, the two principal measures in respect of fire blight, discussed in the IRA at B105-109 and B316-318 are: inspection of source orchards and disinfection of fruit; and the principal measure in respect of ALCM, discussed in the IRA at B188-192 and B319-322 is: the option of inspection of 3000 fruit for export and, if necessary, treatment or treatment of fruit for export.

25. As the Director's determination of 27 March 2007 indicates, those measures are proposed to be imposed as conditions upon any permit to import apples from New Zealand.

## C. The IRA Methodology

### *1) Introduction*

26. The IRA was produced according to a detailed and well-documented methodology based upon the risk assessment techniques described in ISPM No. 11, produced under the auspices of the IPPC, being "risk assessment techniques developed by [a] relevant

international organization" within the meaning of Art 5.1 of the SPS Agreement: see also Annex A(3).

27. The risk analysis in the IRA was confined to the importation of mature apple fruit free of trash, either packed or sorted and graded bulk fruit from New Zealand (IRA at B9). This was in accordance with New Zealand's request for market access which initiated the IRA (IRA at B13).

28. Conformably with ISPM No. 11, the IRA methodology proceeded in three stages (IRA at B11). Stage 1 (initiating the process) involved identifying relevant pests and pathways through which those pests might potentially enter, establish and spread in Australia as a result of the importation of mature apple fruit from New Zealand. Stage 2 (described as "risk assessment" in ISPM No. 11 and "unrestricted risk assessment" in the IRA) relevantly involved an evaluation for each pest, assuming the absence of any measures, of the probability of its entry, establishment and spread and of the potential biological and economic consequences of that occurring. Stage 3 (described as "risk management" in ISPM No. 11 and "pest risk management" in the IRA) involved the identification and assessment of measures for reducing the risks identified in Stage 2 to conform to Australia's ALOP.

*2) Stage 1: Pests and Pathways*

29. In identifying relevant pests the IRA Team initially identified some 443 pests potentially associated with apples from New Zealand. It then categorised those pests and identified for further consideration 16 of the pests, being those:

- that are absent from Australia or whose presence in Australia is uncertain or that are of regional concern; and
- that are likely to be on an importation pathway; and
- for which establishment and spread in Australia is feasible; and
- that have a significant potential for consequences.

(IRA at B13-17; Panel Report at [2.37]-[2.39])

30. Amongst the 16 pests identified by the IRA Team at the first stage, those most relevant to this appeal are: (1) fire blight and (2) ALCM.

31. Fire blight is a disease caused by the bacterium *E. amylovora*. It has been reported in 46 countries including New Zealand. The bacterium was detected in the Royal Botanic Gardens Melbourne in April, 1997 but has since been confirmed to be absent from Australia. The bacterium is produced as ooze on the surface of cankers on infected host plants. It can be carried by insects, wind, rain and pruning tools, or as an epiphytic infestation on the surface of apple fruit, and enters a susceptible host through natural openings or wounds. It is the most serious bacterial disease affecting, among other species, apple and pear varieties. It causes discolouration of stems and leaves and the exudation of ooze; infected fruits can shrivel, discolour or develop lesions and exude ooze; limbs and trunks can develop cankers which may result in tree death.

32. ALCM, *Dasineura mali*, is a small fly occurring in northern Europe, North America and New Zealand. The only hosts of ALCM are apple trees (including crab-apple). The fly reproduces sexually and mated females lay their eggs on actively growing apple shoots. Larvae hatch from the eggs and feed on the unfurling young leaves of the apple tree, causing the leaf margins to curl or roll. The leaf damage may lead to reduced shoot and tree growth and can sometimes facilitate infection by pathogens such as fire blight. ALCM may also cause distortions on the surface of the fruit. The larvae can become caught on the apple fruit, where they will pupate.

33. As to the identification of the pathways through which those pests might potentially enter, establish and spread in Australia as a result of the importation of mature apple fruit from New Zealand, the specific methodology differed in some respects depending upon the particular pest being considered (IRA at B33-35; Panel Report at [2.50]). However, the basic approach of the IRA Team was to identify the potential scenarios and then, so far as practicable, to break those scenarios into series of discrete events. The estimation (at Stage 2 or Stage 3 as the case may be) of the probability of each event in the sequence then allowed for the overall likelihood of entry, establishment and spread to be derived mathematically from those estimations of partial likelihoods (IRA at B31-33).

34. First, there were identified a series of discrete steps in a schematic model of the importation of apples from New Zealand at which infection or infestation might occur beginning with the sourcing of apples from orchards in New Zealand and ending with their arrival in Australia after passing through various stages of processing and transportation. Eight points were identified in the importation schema at which an apple could potentially

become or remain infested or infected with the pest and the conditional likelihood of each step occurring was estimated. The eight points were labelled as numbered "importation steps" (IRA at B19-23):

| | |
|---|---|
| *Importation Step 1*: | Pest present in source orchard |
| *Importation Step 2*: | Picked fruit infected/infested with pest |
| *Importation Step 3*: | Clean fruit contaminated by pest during picking and transportation to packing house |
| *Importation Step 4*: | Pest survives routine processing in packing house |
| *Importation Step 5*: | Clean fruit is contaminated by pest during processing at packing house |
| *Importation Step 6*: | Pest survives palletisation, quality inspection and containerisation |
| *Importation Step 7*: | Clean fruit is contaminated by pest during palletisation, quality inspection and containerisation |
| *Importation Step 8*: | Pest survives and remains with fruit after on-arrival border procedures |

35. The importation steps do not describe a single, linear process of infection or infestation. In fact, there are ten distinct pathways through the importation steps by which an apple that is infested or infected may be imported. The probability of an apple following a particular pathway is the multiplicative product of the partial probabilities (or their complement) of the importation steps involved in that pathway. The probability of an infected or infested apple being imported into Australia was then able to be calculated as the sum of the probabilities for each of the ten alternative pathways. Applied to an estimated total number of apples imported from New Zealand in a given year, the probability of importation can yield an estimate of the number of infected or infested apples imported into Australia annually (IRA at B23-24).

36. Secondly, there were identified the discrete scenarios by which an imported apple might reach a point in Australia (a "utility point") at which it might, in being utilised or distributed, generate waste from which a pest might then be transferred to the vicinity of a host plant. The utility points were: (1) an orchard packing house/wholesaler, on the one hand, or (2) an urban packing house/wholesaler on the other; and, further down the supply chain, (3) retailers, (4) the food service industry and (5) individual consumers. The

IRA Team estimated the proportion of apples that would reach each utility point and, at each point, the proportion of apples that would be discarded in whole or in part as waste. The IRA Team assessed different scenarios to consider the effect of a larger proportion of apples being imported in the first instance to an orchard packing house or, alternatively, an urban packing house (IRA at B25-26).

37. Thirdly, there were identified factors bearing upon the probability of transfer of a sufficient number of pests from the waste or release point to a susceptible host plant ("exposure"). Susceptible host plants were categorised into four "exposure groups": commercial fruit crops, nursery plants, household and garden plants and wild and amenity plants (IRA at B28). The four exposure groups and five utility points schematically render twenty possible exposure pathways, for each of which the likelihood of exposure was considered separately. In each case, the IRA Team took into account factors including the likely proximity of the utility point to the exposure group, the viability of the pest, the survival mechanism of the pest, the transfer mechanisms of the pest, host receptivity and environmental factors (IRA at B29).

38. Fourthly, there were identified factors bearing upon the probability of the successful propagation of the pest on the host plant in Australia ("establishment"). For each exposure group, the IRA Team engaged in a comparative assessment of relevant factors in Australia and New Zealand (and other countries exhibiting the pest). The factors included the availability of suitable hosts, the suitability of the environment, cultural practices, the reproductive and genetic characteristics of the pest and the threshold population for establishment (IRA at B30, B90-93, B175-176; Panel Report at [2.47]-[2.48]).

39. Finally, there were identified factors bearing upon the probability of its dispersal from the place of establishment to other populations of susceptible hosts ("spread") (IRA at B17; Panel Report at [2.40]-[2.49]). As with the probability of establishment, the IRA Team engaged for each exposure group in a comparative assessment as between Australia and New Zealand (and other countries exhibiting the pest) of relevant factors such as the suitability of the environment for natural spread, natural barriers, the potential for pest movement and natural enemies of the pest (IRA at B31, B93-95, B177-178).

40. The risk assessment in respect of ALCM differed in two material respects. First, in addition to estimating the probability of importation using the pathway method, the

IRA Team arrived at an alternative estimation of the probability of importation based upon data provided by New Zealand in August 2005, part-way through the risk analysis process, measuring the percentage of fruit infested with ALCM at endpoint inspections in the 2001-2004 seasons (IRA at B166). Separate overall assessments of the likelihood of entry, establishment and spread were then made using each of the alternate probabilities of importation. Secondly, unlike fire blight, ALCM is an insect which can fly, and is therefore mobile, and which reproduces sexually, and therefore requires a mating pair to establish a population. For those reasons, the IRA Team estimated the number of different physical locations for each of the utility points: 7 orchard wholesalers, 6 urban wholesalers, 5000 retail outlets, 5000 food service outlets and 6 million consumer households (IRA at B34) and then estimated the number of infested apples likely to be at a particular location at the same time in assessing the likelihood of exposure.

*3) Stage 2: Unrestricted risk assessment*

41. The approach adopted in the IRA to unrestricted risk assessment is properly described as "semi-quantitative" (Panel Report at [2.36], [2.61]-[2.67]; IRA at B11). That description captures the fact that the risk assessment methodology, again conformably with ISPM No. 11 (see ISPM No. 11 at [2.2.4]), combines a quantitative assessment of the likelihood of entry, establishment and spread with a qualitative assessment of the consequences. Biosecurity Australia adopted the semi-quantitative methodology in preference to a purely qualitative methodology "to reinforce the transparency and objectivity of the analysis wherever possible" (IRA at B11; Panel Report at [2.62]). Australia was entitled to choose what it considers in the circumstances to be the most appropriate risk assessment methodology (Panel Report at [7.441]) and no objection has been taken in principle to Australia's choice (New Zealand, First Written Submission at [4.162]).

42. Under the quantitative assessment of the likelihood of entry, establishment and spread, the IRA Team described each step in the schemata for importation and distribution, utilization, waste generation and disposal using a probability distribution (Panel Report at [2.63]). The IRA used pert, triangular and uniform distributions as appropriate. Each of those distributions has as parameters minimum and maximum values, but only the pert and triangular distributions have as a third parameter the "most likely value". Uniform distributions were, therefore, used in cases where insufficient information was available to determine the most likely value (IRA at B42). The minimum and maximum values were in

most cases chosen from numerical intervals suggested in Biosecurity Australia's 2001 Draft *Guidelines for Import Risk Analysis* reproduced in the IRA (IRA at B43; Panel Report at [2.65]):

| **Nomenclature for qualitative likelihoods, corresponding semi-quantitative probability intervals** | | | |
|---|---|---|---|
| **Likelihood** | **Qualitative descriptors** | **Probability interval** | **Midpoint (if uniform distribution used)** |
| High | The event would be very likely to occur | 0.7 → 1 | 0.85 |
| Moderate | The event would occur with an even probability | 0.3 → 0.7 | 0.5 |
| Low | The event would be unlikely to occur | $5 \times 10^{-2}$ → 0.3 | 0.175 |
| Very low | The event would be very unlikely to occur | $1 \times 10^{-3}$ → $5 \times 10^{-2}$ | $2.6 \times 10^{-2}$ |
| Extremely low | The event would be extremely unlikely to occur | $1 \times 10^{-6}$ → $1 \times 10^{-3}$ | $5 \times 10^{-4}$ |
| Negligible | The event would almost certainly not occur | 0 → $1 \times 10^{-6}$ | $5 \times 10^{-7}$ |

However, the IRA Team "considered carefully whether they were confident that the range they had chosen would contain the actual value and that the chosen distribution reflected their beliefs." The IRA Team was "not constrained by the intervals suggested in the draft Guidelines": IRA at B42; Panel Report at [2.67].

43. The distributions assigned to each step in the scenarios were then used to model the probability distribution of entry, establishment and spread using a Monte Carlo stochastic simulation (Panel Report at [2.64]). The resulting probability distribution was next converted, using the nomenclature already described, into qualitative terms (IRA at B43).

44. The potential consequences of the entry, establishment and spread were then separately assessed qualitatively using a standard methodology (IRA at B35-40). Here, the IRA specifically adopted the criteria for the assessment of consequences enumerated in ISPM No. 11. These included "direct" criteria, principally plant life or health, and "indirect" criteria, including the costs of control or eradication, effects on domestic and international trade and effects on the environment and communities. For each criterion, the consequences were considered on a local, district, regional and national level, with the quantum of impact

described as “unlikely to be discernible”, “of minor significance”, “significant” or “highly significant”; each of those qualitative descriptors was defined. An “Impact Score” from “A” to “G” was derived for each criterion using the following table (IRA at B39):

**The Assessment of Local, District, Regional and National Consequences**

| **Impact Score** | *National* | *Regional* | *District* | *Local* |
|---|---|---|---|---|
| *G* | Highly significant | Highly significant | Highly significant | Highly significant |
| *F* | Significant | Highly significant | Highly significant | Highly significant |
| *E* | Minor | Significant | Highly significant | Highly significant |
| *D* | Unlikely to be discernible | Minor | Significant | Highly significant |
| *C* | Unlikely to be discernible | Unlikely to be discernible | Minor | Significant |
| *B* | Unlikely to be discernible | Unlikely to be discernible | Unlikely to be discernible | Minor |
| *A* | Unlikely to be discernible | Unlikely to be discernible | Unlikely to be discernible | Unlikely to be discernible |

**Level**

The impact scores for the various criteria were then combined using defined rules to arrive at an overall qualitative assessment of the consequences associated with a pest as “extreme”, “high”, “moderate”, “low”, “very low” or “negligible”.

45. The qualitative description of the likelihood of entry, establishment and spread and the overall qualitative assessment of the consequences of the entry, establishment and spread into Australia of the pest were then combined using the Risk Estimation Matrix (IRA at B4) to arrive at a qualitative assessment of the “unrestricted risk” associated with the pest in connection with the importation of apples from New Zealand on the assumption that no phytosanitary measures are maintained.

**Risk Estimation Matrix Used by the IRA Team**

| Likelihood of entry, establishment and spread | Consequences of entry, establishment and spread | | | | | |
|---|---|---|---|---|---|---|
| | *Negligible* | *Very low* | *Low* | *Moderate* | *High* | *Extreme* |
| *High* | Negligible risk | Very low risk | Low risk | Moderate risk | High risk | Extreme risk |
| *Moderate* | Negligible risk | Very low risk | Low risk | Moderate risk | High risk | Extreme risk |
| *Low* | Negligible risk | Negligible risk | Very low risk | Low risk | Moderate risk | High risk |
| *Very low* | Negligible risk | Negligible risk | Negligible risk | Very low risk | Low risk | Moderate risk |
| *Extremely low* | Negligible risk | Negligible risk | Negligible risk | Negligible risk | Very low risk | Low risk |
| *Negligible* | Negligible risk | Negligible risk | Negligible risk | Negligible risk | Negligible risk | Very low risk |

46. As the Risk Estimation Matrix shows, the "very low risk" may be exceeded by several different combinations of the likelihood of entry, establishment and spread and consequences.

47. Here, in respect of each of fire blight and ALCM, the IRA concluded that the risk associated with the importation of apples from New Zealand exceeded the "very low risk" corresponding to Australia's ALOP.

48. In respect of fire blight, the IRA Team assessed the likelihood of entry, establishment and spread to be "very low" (IRA at B97). Consequences were assessed as "high", following on a finding that the consequences for plant life and health would be "significant on a national level" (IRA at B98, B104). Combining those two factors using the Risk Estimation Matrix, the risk associated with fire blight is "low risk" (IRA at B104).

49. In respect of ALCM, the IRA Team conducted two separate risk assessments. The first was based upon an importation scenario similar to that used for fire blight; the second was based upon trade data supplied by New Zealand part-way through the conduct of the IRA in August 2005. The IRA assessed the likelihood of entry, establishment and spread of ALCM to be "high" and "moderate" respectively (IRA at B183). Consequences were assessed as "low", following from findings that the impact on plant life or health and the costs associated with control or eradication and domestic and international trade would be unlikely to be discernible at the national level and of minor significance at the regional level (IRA at B184-187). Combining either of the likelihoods of entry, establishment and spread

with "low" consequences in the Risk Estimation Matrix, the risk associated with ALCM is "low risk" (IRA at B187).

*4) Stage 3: Restricted risk assessment*

50. Where the overall unrestricted risk for a given pest exceeded the "very low risk" corresponding to Australia's ALOP, appropriate risk management measures for the pest were considered at Stage 3 (Panel Report at [2.58]-[2.59]).

51. Most relevantly for the purposes of the appeal, having determined that the risk associated with fire blight and ALCM exceeded the "very low risk" corresponding to Australia's ALOP, the IRA Team considered possible risk management measures for each pest (IRA at B105-116, B188-192). After identifying feasible measures, the IRA Team revised the assessments of entry, establishment and spread assuming the measures to be put in place. The least trade-restrictive measures, or combination of measures, found to reduce the risk to "very low risk" were recommended.

52. In respect of fire blight, the IRA Team recommended two measures, concluding that a combination of (1) a requirement that apples be sourced from orchards shown by inspection to be free from symptoms of fire blight and (2) chlorine treatment "would be sufficient to manage the risks associated with fire blight disease" (IRA at B116). In respect of ALCM, the IRA Team identified one measure, offering two risk management options in the alternative: (1) inspection of a random sample of 3000 fruit from each lot and treatment or rejection of any lots where ALCM is found; or (2) treatment of all lots (IRA at B192). The IRA went on to "provide[] further details" in relation to the administrative procedures or processes necessary to ensure the efficacy of the measures (IRA at B313-325). These details are reflected in the way in which New Zealand framed its case (*Request for the Establishment of a Panel by New Zealand*, WT/DS367/5, 7 December 2007) and the basis upon which the Panel proceeded to consider the dispute (Panel Report at [2.91]): that is, that there were eight "measures" relating to fire blight, one measure relating to ALCM, three general "measures" relating to all pests (and the "measures" relating to European canker, not reproduced below):

> (i) The requirement that apples be sourced from areas free from fire blight disease symptoms;
>
> (ii) The requirement that orchards/blocks be inspected for fire blight disease symptoms, including that they be inspected at an inspection intensity that would, at a 95% confidence level, detect visual

symptoms if shown by 1% of the trees, and that such inspections take place between 4 to 7 weeks after flowering;

(iii) The requirement that an orchard/block inspection methodology be developed and approved that addresses issues such as visibility of symptoms in the tops of trees, the inspection time needed and the number of trees to be inspected to meet the efficacy level, and training and certification of inspectors;

(iv) The requirement that an orchard/block be suspended for the season on the basis that any evidence of pruning or other activities carried out before the inspection could constitute an attempt to remove of hide symptoms of fire blight;

(v) The requirement that an orchard/block be suspended for the season on the basis of detection of any visual symptoms of fire blight;

(vi) The requirement that apples be subject to disinfection treatment in the packing house;

(vii) The requirement that all grading and packing equipment that comes in direct contact with apples be cleaned and disinfected (using an approved disinfectant) immediately before each Australian packing run;

(viii) The requirement that packing houses registered for export of apples process only fruit sourced from registered orchards;

...

(xiv) The requirements of inspection and treatment for apple leafcurling midge, including:

the option of inspection of each lot on the basis of a 3000 unit sample selected at random across the whole lot for apple leafcurling midge, symptoms of quarantineable diseases, quarantineable pests, arthropods, trash and weed seeds, with detection of any live quarantineable arthropod resulting in appropriate treatment or rejection for export;

the option of inspection of each lot on the basis of a 600 unit sample selected at random across the whole lot for symptoms of quarantineable diseases, trash and weed seeds, plus mandatory appropriate treatment of all lots;

(xv) The requirement that Australian Quarantine and Inspection Service officers be involved in orchard inspections for ... fire blight, in direct verification of packing house procedures, and in fruit inspection and treatment;

(xvi) The requirement that New Zealand ensure that all orchards registered for export to Australia operate under standard commercial practices;

(xvii) The requirement that packing houses provide details of the layout of premises.

### D. New Zealand's Claim

53. On 6 December 2007, following consultations with Australia which did not lead to a resolution, New Zealand requested the DSB to establish a panel pursuant to Art 6 of the DSU (Panel Report, Annex A-1). On 21 January 2008, the DSB so established a panel. New Zealand claimed that the measures described above were, both individually and as a whole, inconsistent with Australia's obligations under the SPS Agreement, in particular: Arts 2.2 and 2.3; Arts 5.1, 5.2, 5.5 (first sentence) and 5.6; Art 8; and Annex C(1)(a).

### E. Panel Report

54. The findings of the Panel are summarised in the Panel Report at [8.1]. In relation to the measures, the Panel found against Australia in concluding, relevantly: that the measures identified by New Zealand, both individually and as a whole, constitute SPS measures within the meaning of Annex A(1) (Panel Report, [7.172], [8.1](b)); that the measures are not based upon a proper risk assessment and so infringe Arts 5.1 and 5.2 and, therefore, Art 2.2 of the SPS Agreement (Panel Report, [7.472], [7.510], [7.886]-[7.887], [7.904]-[7.905], [8.1](c)); and that the measures except for the "general measures" are more trade-restrictive than necessary and so infringe Art 5.6 of the SPS Agreement (Panel Report, [7.1266], [7.1365], [8.1](e)).

## III. GROUNDS OF APPEAL

### A. Misinterpretation of Annex A(1) to the SPS Agreement: ground (a)

#### *1) Applicable legal principles*

55. The definition in Annex A(1) to the SPS Agreement establishes criteria for determining what should be regarded as an SPS measure.

56. The critical part of the definition lies in the first paragraph. The opening words of that paragraph, read with the opening words of each of sub-paragraphs (a) to (d), define an SPS measure as any "measure applied ... to protect" against a specified category of risk. In particular, a thing falls within the definition of SPS measure in sub-paragraph (a) where, but

only where, it amounts to a "measure applied ... 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 ...". To fall discretely within the definition, a thing being examined must therefore have three relevant characteristics. First, and foremost, it must itself be an identifiable "measure": a term that implies the taking of some discrete and recognisable action or course of action (including an identifiable omission) as a means to an end. The second and third characteristics confirm and explain the nature of the first. The second is that the measure must be applied: meaning it must be deployed or put into practical operation. The third is that the measure must be so applied for a particular purpose: to protect against a specified category of risk, relevantly for present purposes being a risk to animal or plant life or health within the territory of the Member arising from the entry, establishment or spread of a pest.

57. The second paragraph of the definition does nothing to undermine the essential characteristics of an SPS measure as revealed by the first paragraph of the definition. The listing in the second paragraph of the definition of particular types of requirements and procedures and processes as potential forms of SPS measure is: (1) stated only in terms that SPS measures "include"; and (2) qualified by the word "relevant". In providing a list of examples of potential SPS measures, the second paragraph serves usefully to ensure that the things to which it refers are not excluded *a priori* from being considered as SPS measures. The second paragraph of the definition does not mean that any requirement, procedure or process described in the list is necessarily to be classified as an SPS measure. Importantly, for the purpose of applying the second paragraph of the definition, it is the first paragraph of the definition that governs both the "relevance" of a particular requirement, procedure or process and whether a particular requirement, procedure or process, if relevant, is to be "included" by being identified as a discrete or stand-alone SPS measure or alternatively by being identified as an aspect or part of some other more broadly-defined SPS measure.

58. The identification of an SPS measure therefore requires a practical and purposive evaluation closely focussed on the essential characteristics of an SPS measure as revealed by the first paragraph of the definition in Annex A(1) to the SPS Agreement. The ultimate question is to identify, practically and purposively, some action or course of action (including an identifiable omission) that a Member may put into practical operation for the purpose of protecting against some relevant risk. Activities or requirements, such as administrative processes or procedures, which have no operation other than to enhance the efficacy of some

active mechanism for protecting animal or plant life or health from relevant risks (such as orchard inspection or disinfection) should not be identified as separate and discrete SPS measures. Administrative processes or procedures of that ancillary nature and the mechanisms to which they relate should be identified collectively as amounting to a single composite, or enhanced, SPS measure. To adopt a different approach would be potentially to open up every detail of an administrative regime to separate evaluation for compliance, relevantly, with Arts 2.2, 5.1, 5.2 and 5.6 of the SPS Agreement.

59. The appropriateness of the application of such a practical and purposive approach to the first paragraph of the definition in Annex A(1) to the SPS Agreement, is consistent with (and illustrated by) the internationally accepted definition of the cognate term "phytosanitary measure" in the glossary of phytosanitary terms contained in ISPM No. 5 and by the distinction that glossary draws between a "phytosanitary measure" and a phytosanitary procedure". A "phytosanitary measure" is "any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests." A "phytosanitary procedure", on the other hand, is "any official method for implementing phytosanitary measures including the performance of inspections, tests, surveillance or treatments in connection with regulated pests." What these definitions make clear is that a "phytosanitary procedure", aimed simply at implementing a phytosanitary measure, is not thereby itself a discrete phytosanitary measure.

*2) The Panel's error*

60. Australia has always accepted that all of the measures at issue could be viewed as SPS measures when taken as a whole or grouped appropriately.

61. The error of the Panel was to purport at [7.130]-[7.171] to apply sub-paragraph (a) of the first paragraph in combination with the second paragraph of definition to conclude at [7.172] and to repeat at [8.1](b) "that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of" the definition of SPS measures in Annex A(1) to the SPS Agreement.

62. The reasoning of the Panel which led to that conclusion proceeded in two steps. First, at [7.130]-[7.142], the Panel looked immediately to the ultimate purpose of the putative "measures" and concluded that all of them had an ultimate purpose that corresponded to

sub-paragraph (a). At [7.131], the Panel found that "the IRA and its basis, the *Import Risk Assessment Handbook* (2003), explicitly refer to the objective of 'protecting the health of ... animals and plants" and, at [7.140], that "each measure would be indispensible for achieving Australia's ALOP". Next, the Panel at [7.143]-[7.171], and particularly by [7.153], asked "whether the 16 measures fit the elements of form and nature spelt out in the second paragraph" of the definition and concluded that they did. The conclusion at [7.172] was expressed to be reached "[i]n the light of the foregoing".

63. The Panel did not ask whether the putative "measures" individually met the three essential characteristics required by sub-paragraph (a) of the first paragraph of the definition of SPS measures in Annex A(1) to the SPS Agreement. That is to say, the Panel did not ask whether each putative "measure" amounted to (1) a discrete and recognisable action or course of action (2) deployed or put into practical operation (3) for the purpose of protecting against a specified category of risk.

64. The first step in the Panel's reasoning appears rather to have been premised on the assumption that the fact that the 16 putative "measures" all have an ultimate purpose that corresponded to sub-paragraph (a) is sufficient for each of them individually to amount to an SPS measure whether or not they each amount to a discrete and recognisable action or course of action that is deployed or put into practical operation for that purpose. The fact that each of the 16 putative "measures" collectively recommended in the IRA are for an ultimate purpose that corresponded to sub-paragraph (a) has never been in issue. That fact alone does not support the Panel's conclusion that each individually meets the definition. Nor can it be sufficient that each of the 16 putative "measures" would be indispensible for achieving Australia's ALOP: an administrative or procedural requirement that is necessary, even "indispensible", to achieve ALOP, but not sufficient to do so, cannot without more amount in itself to an SPS measure.

65. The second step in the Panel's reasoning may or may not have been intended to be independent of the first. If the Panel was saying in the second step that it was sufficient for a putative "measure" to be an SPS measure that it fall within a category described in the second paragraph of the definition, then the Panel was clearly wrong: an SPS measure must always meet a description in the first paragraph. If the Panel was not saying that it was sufficient that a putative "measure" to be an SPS measure that it fall within a category described in the

second paragraph of the definition, then the second step in the Panel's reasoning adds nothing to the first.

66. The error in the Panel's approach is well-enough illustrated by considering what New Zealand identified as Measure (iii), as set out in [52] above: the requirement "that an orchard/block inspection methodology be developed and approved that addresses issues such as ... the number of trees to be inspected to meet the efficacy level, and training and certification of inspectors". Taken alone, that requirement is obviously both meaningless and ineffective to achieve any protection from risk. It has meaning and efficacy only in so far as it is ancillary to what New Zealand identified as Measure (i), as set out in [52] above: the requirement "that apples be sourced from areas free from fire blight disease symptoms". The same is true of what New Zealand identified as Measures (ii), (iv), (v), (xv) (in its application to orchard inspection) and (xvi). What New Zealand identified as Measures (i), (ii), (iv), (v), (xv) (in its application to orchard inspection) and (xvi) are properly seen as a single composite SPS measure. Yet the Panel treated them all as separate SPS measures.

67. Correctly applying the definition in Annex A(1) to the SPS Agreement, the Panel should have found that Australia proposed to impose not 16 measures but four – the two for fire blight and the one for ALCM identified in [52] above and the one for European canker – and that the remaining measures identified by New Zealand amount to no more than administrative processes and procedures ancillary to those measures, which fell to be assessed only as a whole or grouped appropriately.

## B. Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2: ground (b)

### *1) Applicable legal principles*

68. The Appellate Body in *US/Canada – Continued Suspension* confirmed that the role of a Panel reviewing an SPS measure for conformity with Art 5.1 is not to conduct a risk assessment but to review the risk assessment in fact relied upon by a Member. The Appellate Body further confirmed that the role of a Panel reviewing the risk assessment in fact relied upon by a Member is not to determine whether that risk assessment is "correct" but whether the risk assessment is "objectively justifiable", in the sense that it is "supported by coherent reasoning and respectable scientific evidence": *US/Canada – Continued Suspension* at [590]. That "limited mandate" to determine whether a risk assessment in fact relied upon by a Member is "objectively justifiable" requires a Panel: (1) to "identify the scientific basis

upon which the SPS measure was adopted"; (2) to "verify that the scientific basis comes from a respected and qualified source"; (3) to "assess whether the reasoning articulated on the basis of the scientific evidence is objective and coherent", that is to say, to "review whether the particular conclusions drawn by the Member assessing the risk find sufficient support in the scientific evidence relied upon"; and (4) to "determine whether the results of the risk assessment 'sufficiently warrant' the SPS measure at issue": *US/Canada – Continued Suspension* at [590]-[591].

69. The limited mandate of a Panel reviewing a risk assessment in fact relied upon by a Member and the criteria identified in *US/Canada – Continued Suspension* to be addressed by a Panel in fulfilling that limited mandate follow in large measure from a proper legal interpretation of what Art 5.1 in the first place requires of a Member in relying upon a risk assessment. The proper legal interpretation of what Art 5.1 requires of a Member in relying upon a risk assessment is in turn informed, fundamentally, by the basic obligation in Art 2.2 to which Art 5.1 gives specific content. It is also informed by the references in Art 5.1 to the risk assessment relied upon by a Member being "as appropriate to the circumstances" and "taking into account risk assessment techniques developed by the relevant international organizations". It is also informed by the requirements of Arts 5.2 and 5.3 that certain considerations be taken into account in a risk assessment and by the definition of "risk assessment" in Annex A(4).

70. The Appellate Body stressed in *EC – Hormones* at [180] and repeated in *US/Canada – Continued Suspension* at [526], that Arts 2.2 and 5.1 "should constantly be read together" and that Art 2.2 "informs" Art 5.1 in the sense that "the elements that define the basic obligation set out in" Art 2.2 "impart meaning" to Art 5.1. The elements that define the basic obligation set out in Art 2.2 that most centrally inform what is required of a Member in relying upon a risk assessment within the meaning of Art 5.1 are those elements, contained in the second and third requirements of Art 2.2, which oblige a Member to ensure that an SPS measure is "based on scientific principles" and is not maintained without "sufficient scientific evidence".

71. "Sufficient scientific evidence" within the meaning of Art 2.2 must be understood by reference to the meaning of "insufficient scientific evidence" that would enliven Art 5.7: *US/Canada – Continued Suspension* at [674]. The mere existence of uncertainty, incompleteness or inconclusiveness in the scientific basis does not mean that the evidence is

"insufficient" or "inadequate" to enliven Art 5.7: *Japan – Apples* at [184]. The SPS Agreement contemplates measures based on scientific evidence, rather than upon precaution, even in circumstances where the totality of the available scientific evidence is incomplete, inconclusive or uncertain. Scientific inconclusiveness "does not excuse the risk assessor from evaluating" the risk: *US/Canada – Continued Suspension* at [562]. So much is clear from the obligation in Art 5.2 to take into account "available" scientific evidence. The limitation defined by the word "available" acknowledges the limitations of scientific evidence that is uncertain, incomplete or inconclusive.

72. Additionally, and quite independently of the point made in the previous paragraph, "sufficiency" is a relational concept: requiring "the existence of a sufficient or adequate relationship between two elements, *in casu*, between the SPS measure and the scientific evidence": *Japan – Agricultural Products II* at [73]. Accordingly, once an SPS measure is based upon a risk assessment conducted under Art 5.1, rather than on precaution under Art 5.7, the question whether the measure is maintained with "sufficient scientific evidence" falls to be answered bearing in mind that "sufficiency" is necessarily to be assessed by reference to the relationship between the SPS measure on the one hand and the scientific evidence on the other. The nature of the relationship required is no more and no less than that the relationship be "rational" or "objective". As observed by the Appellate Body in *Japan – Agricultural Products II* at [84]:

> [t]he obligation in Article 2.2 that an SPS measure not be maintained without sufficient scientific evidence requires that there be a rational or objective relationship between the SPS measure and the scientific evidence. Whether there is a rational relationship between an SPS measure and the scientific evidence is to be determined on a case-by-case basis and will depend upon the particular circumstances of the case, <u>including the characteristics of the measure at issue and the quality and quantity of the scientific evidence</u>.
>
> (emphasis added)

73. That observation of the Appellate Body in *Japan – Agricultural Products II* at [84] is underscored by the reference in Art 5.1 to a risk assessment undertaken by a Member being "as appropriate to the circumstances". That reference to a risk assessment "as appropriate to the circumstances", as the Appellate Body has explained, "suggests that the scientific inquiry involved in a risk assessment must take due account of particular methodological difficulties posed by the nature and characteristics of the particular substance and risk being evaluated":

*US/Canada – Continued Suspension* at [562]. In *US/Canada – Continued Suspension*, the existence of mainstream and minority views within the respected and qualified scientific community presented particular circumstances to which the risk assessment was entitled to adapt. To similar effect, in a report not appealed, a Panel has correctly suggested that "where there is little available scientific evidence, the phrase 'as appropriate to the circumstances' may provide a measure of flexibility in terms of how (but not whether) the applicable elements of the Annex A(4) definition, including the likelihood evaluation, are satisfied": *EC – Biotech Products* at [7.3053]; see also at [7.1525]. If the body of scientific data from respected and qualified sources is sufficient to foreclose the availability of precautionary measures pursuant to Art 5.7, but uncertain, incomplete or inconclusive in its import, that too presents particular circumstances, and "particular methodological difficulties", to which the Member conducting a risk assessment under Art 5.1 is entitled to adapt its methodologies.

74. The flexibility that a Member must have to adapt its risk assessment methodologies by reference to the quantity and quality of the available scientific evidence is further underscored by the description in Art 5.1 of the risk assessment undertaken by a Member "taking into account risk assessment techniques developed by the relevant international organizations". The import of Annex A(3)(c) is that the "risk assessment techniques developed by the relevant international organizations" referred to in Art 5.1 include those techniques developed under the auspices of the IPPC, relevantly, ISPM No. 11. Both Australia and New Zealand relied on ISPM No. 11 in the present dispute: Panel Report at [2.69]-[2.70]. ISPM No. 11 is replete with express or implied acknowledgements of the existence of scientific uncertainty and of the consequent need for "expert judgement" at virtually every stage of risk assessment: in the identification of pests ([2.1.2]); in the identification of pathways ([2.2.1]; in estimating the probability of establishment ([2.2.2]); in estimating the probability of spread after establishment ([2.2.3]) and in the assessment of potential economic consequences ([2.3.2.1]). Under the heading "Degree of uncertainty", ISPM No. 11 at [2.4]:

> Estimation of the probability of introduction of a pest and of its economic consequences involves many uncertainties. In particular, this estimation is an extrapolation from the situation where the pest occurs to the hypothetical situation in the [Pest Risk Assessment] area. It is important to document the areas of uncertainty and the degree of uncertainty in the assessment, and to indicate where expert judgement has been used. This is necessary for transparency and may also be useful for identifying and prioritizing research needs.

ISPM No. 2 is to similar effect. ISPM No. 2 notes at [3.1]-[3.2] that "[u]ncertainty is a component of risk and therefore important to recognize and document when performing [Pest Risk Assessments]" and that "[s]ources of uncertainty ... may include: missing, incomplete, inconsistent or conflicting data; natural variability of biological systems; subjectiveness of analysis; and sampling randomness". ISPM No. 2 goes on to state that "[w]here information is insufficient or inconclusive, expert judgement may be used if appropriate" and that "[t]he nature and degree of uncertainty in the analysis should be documented and communicated, and the use of expert judgement indicated". The critical aspect of both ISPM No. 11 at [2.4] and ISPM No. 2 at [3.1] and [3.2] is the acknowledgement of the appropriateness of expert judgement in circumstances of scientific uncertainty arising from incomplete, inconsistent or conflicting data. Their exhortation to "documentation" and "transparency" in explaining expert judgements that are made in such circumstances is a counsel of perfection. Importantly, however, the "documentation" and "transparency" exhorted by ISPM No. 11 as a counsel of perfection goes no further than to suggest (1) documentation of areas of uncertainty and the degree of uncertainty and (2) indication of where expert judgement has been used. There is no suggestion in either ISPM No. 11 or ISPM No. 2 that its exhortation to "documentation" and "transparency" requires any explanation at all of how an expert judgement that is indicated to have been used in the light of documented uncertainty has been formed.

75. The first and the second of the criteria identified in *US/Canada – Continued Suspension* at [591] must be understood and applied in this light. In seeking to "identify the scientific basis upon which the SPS measure was adopted" and to "verify that the scientific basis comes from a respected and qualified source", it is never the task of a Panel or its appointed experts to determine in the abstract, and divorced from the purpose of relating it to the particular SPS measure in play, the "sufficiency" of scientific evidence. The task of the Panel in relation to the first and second criteria, consistently with the overall purpose of assessing whether SPS measures maintained by a Member are not maintained without "sufficient" scientific evidence, is simply to identify that the SPS measure has some "basis" in the "available scientific evidence" and to confirm that the scientific evidence is from a respected and qualified source. Just as scientific inconclusiveness "does not excuse the risk assessor from evaluating" the risk (*US/Canada – Continued Suspension* at [562]), scientific inconclusiveness does not entitle a Panel to find the scientific basis to be insufficient. As recognised in ISPM No. 11 and ISPM No. 2, what is required is documentation of areas of

uncertainty and the degree of uncertainty and identification of where expert judgement therefore needs to be used by the risk assessor in evaluating the risk. The existence or non-existence of the relationship of rationality and objectivity necessary to characterise scientifically inconclusive evidence as "sufficient" to support the SPS measure then falls to be addressed by reference to the third and fourth criteria in *US/Canada – Continued Suspension* at [591].

76. The third and the fourth of the criteria identified in *US/Canada – Continued Suspension* at [591] are those which focus on the existence or non-existence of the necessary "rational or objective relationship" between the SPS measure and such "available scientific evidence" as may be identified as the basis for the SPS measure and confirmed to be from a respected and qualified source. As explained in *US/Canada – Continued Suspension* at [591], the application of the third criterion so as to assess "whether the reasoning articulated on the basis of the scientific evidence is objective and coherent" is not directed to assessing the quality of the reasoning as an end in itself: it is directed to determining "whether the particular conclusions drawn by the Member assessing the risk find sufficient support in the scientific evidence relied upon". Critically, the application of that criterion focuses on the relationship between the scientific evidence and the conclusions ultimately reached by the Member as the basis for an SPS measure. The question is whether a particular conclusion ultimately reached by a Member as the basis for the SPS measure finds sufficient support in such "available scientific evidence" as may be identified by the Member as the basis for the SPS measure and confirmed to be from a respected and qualified source. That question is answered by asking whether the particular conclusion ultimately reached by a Member is rationally or objectively related to that scientific evidence. The question is not answered by asking whether the conclusion is correct, or the same conclusion that the Panel, or an expert, would have reached. Nor is the question answered by asking whether the process of reasoning by which the conclusion is reached is at every step articulated as fully as the Panel, or an expert, may have articulated it.

77. Applying the third criterion identified in *US/Canada – Continued Suspension* at [591], where a Member adopts and articulates a rational and coherent methodology for the conduct of a risk assessment, the question whether a particular conclusion ultimately reached by a Member as a result of the application of that methodology is rationally or objectively related to the scientific evidence identified by the Member is not answered by asking whether expert

judgements made at every intermediate step in the application of the methodology are themselves supported by reasoning that is articulated in a way that can be seen to be objective and coherent. To the contrary, as recognised in ISPM No. 11 and ISPM No. 2, the most that can be required at each such intermediate step is an indication of the expert judgement actually made and of the scientific evidence by reference to which that expert judgement was actually made. The conclusion ultimately reached by the Member must be rationally or objectively related to the scientific evidence by reference to which that expert judgement was made where, in light of that scientific evidence, the expert judgement made was itself within a range that could be considered "legitimate by the standards of the scientific community". That is to say, the standard required for such expert judgement as may be made by the risk assessor in the light of scientific uncertainty, where the scientific evidence is incomplete or inconclusive, ought be no different from the standard recognised in *US/Canada – Continued Suspension* at [591] as that required for the scientific evidence itself: each need do no more than fall within a range that could be considered "legitimate by the standards of the scientific community". If a particular expert judgement were shown to be outside that range a further question would then arise as to its materiality to the overall result reached by the application of the methodology: is the fact that the particular conclusion may be outside the range that could be considered legitimate by the standards of the scientific community "so serious" as to undermine "reasonable confidence" in the risk assessment as a whole: *Australia – Salmon (Article 21.5 – Canada)* at [7.57].

78. Accordingly, consistently with the first and third of the criteria identified in *US/Canada – Continued Suspension* at [591], the proper interpretation and application of Arts 2.2, 5.1 and 5.2 requires a Panel to accept as sufficient for a risk assessment conducted by a Member to comply with Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement:

(1) as to the first criterion in *US/Canada – Continued Suspension* (that there be identification of the "scientific basis" for the measures): that the risk assessment identified the scientific evidence that was actually available together with the areas in which and degree to which the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty; and

(2) as to the third criterion in *US/Canada – Continued Suspension* (that the "reasoning articulated on the basis of the scientific evidence [be] objective and coherent"): that in

the light of the identified available scientific evidence and in the light of the identified scientific uncertainty, the risk assessment conducted by the Member recorded an expert judgement that:

(a) was within a range that could be considered legitimate by the standards of the scientific community; or

(b) even if outside that range, was not such as to undermine reasonable confidence in the assessment as a whole.

79. In addition, in relation to the assessment of consequences, it is important to recognise that the standard of objectivity or rationality or legitimacy cannot be confined only by the standards of the scientific community. Article 5.3 expressly requires Members to take into account specified "relevant economic factors", including "potential damage in terms of loss of production or sales". And, unlike an assessment of the "likelihood" of entry, establishment and spread, a risk assessment need only evaluate "potential" consequences: Annex A(4). As the Appellate Body has explained, "[t]he ordinary meaning of 'potential' relates to 'possibility' and is different from the ordinary meaning of 'probability'. 'Probability' implies a higher degree or a threshold of potentiality or possibility": *EC – Hormones* at [184].

*2) The Panel's errors: fire blight*

80. The Panel chose to conduct its review of the fire blight measures by reviewing individually the discrete steps involved in the risk assessment process: Panel Report at [7.246]. It asked itself at each step whether the particular intermediate conclusion made was sufficiently supported by scientific evidence and was objective and coherent.

81. At no point did the Panel find that the data upon which the IRA relied did not come from respected and qualified sources and, in several instances expressly found that it did come from respected and qualified sources: see, e.g., Panel Report at [7.257], [7.270], [7.320].

82. Attempting to invoke the first and the third of the criteria in *US/Canada – Continued Suspension*, the Panel instead found fault with a number of the particular conclusions drawn at intermediate points in the IRA which the Panel considered were either or both:

(1) not supported by what the Panel referred to as "adequate" or "sufficient" scientific evidence: see Panel Report: at [7.259] (Importation Step 1), [7.290] (Importation Step 3), [7.417] (Exposure), [7.420] (Establishment), [7.470] (Consequences); or

(2) not "objective and coherent": see Panel Report at [7.259] (Importation Step 1), [7.275] (Importation Step 2), [7.290] (Importation Step 3), [7.320] (Importation Step 5), [7.417] (Exposure), [7.420] (Establishment), [7.470] (Consequences).

In relation to Importation Step 1 (at [7.259]), Importation Step 3 (at [7.290]) and Exposure (at [7.417]), the Panel's findings that the conclusion drawn in the IRA was not objective and coherent was said to follow from the finding that it was not supported by "adequate" or "sufficient" scientific evidence.

83. The Panel's overall conclusion that the risk assessment for fire blight contained in the IRA failed to comply with Arts 5.1 and 5.2 (and consequently with Art 2.2) was reached as a consequence of the fault found by the Panel with particular expert judgements made at intermediate points in the IRA. The overall conclusion was not reached on the basis that the SPS measures proposed to be imposed by Australia in respect of fire blight were not "objectively justifiable" on the scientific data upon which the IRA was based.

84. Whatever else might be said about the way the Panel found fault with particular expert judgements made at intermediate points in the IRA, the Panel erred when it failed to stand back and assess the materiality of the faults that it found.

85. To take an important example, the Panel pulled together its detailed findings on the conclusions drawn in the IRA as to the values estimated for various importation steps at [7.447] as follows:

> The Panel finds ... that the IRA's estimation that *Erwinia amylovora* will be always present in the source orchards in New Zealand (importation step 1); that fruit coming from an infected or infested orchard is infected or infested with *Erwinia amylovora* (importation step 2); that clean fruit from infected or infested orchards is contaminated with *Erwinia amylovora* during picking and transport to the packing house (importation step 3); and that clean fruit is contaminated by *Erwinia amylovora* during processing in the packing house (importation step 5); do not find sufficient support in the scientific evidence relied upon and, accordingly, are not coherent and objective. In the light of these findings and the absence of any separate justification and evidence in the IRA regarding the estimated overall likelihood of importation, the Panel finds additionally that the IRA's estimation of the

> overall probability of importation is not supported by adequate scientific evidence and, accordingly, is not coherent and objective.
>
> (emphasis added)

86. Yet, the Panel wholly ignored the evidence of Dr Deckers who, when asked to comment on Australia's proposition that "any purported exaggeration of the probability range [for importation] is not a serious flaw" (Panel Report, Annex B-2 at [257]) responded (Annex B-2 at [259]):

> I don't feel that there was an exaggeration of the estimation there in the importation steps. I think there is a real risk present that should be estimated as good as possible. For me it was not an exaggerated situation here. I think you are right to take the estimation in this way.
>
> (emphasis added)

87. To take another important example, the Panel at [7.449]-[7.470] found fault with the IRA's conclusion that the overall potential biological and economic consequences of the entry establishment and spread of fire blight should be rated as "high", concluding at [7.470] that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of fire blight into Australia does not rely on adequate scientific evidence and, accordingly, is not coherent and objective. Yet the Panel, again, wholly ignored the evidence of Dr Deckers who, when asked directly whether he considered the IRA to be objective and credible when qualifying the biological and economic consequences of fire blight as "high", responded (Panel Report, Annex B-1 at [85]):

> The biological and economical consequences of a fire blight introduction can indeed be classified as "high".

88. Indeed, an appropriate perspective on the totality of the flaws found by the Panel in the intermediate conclusions drawn in the IRA concerning fire blight is provided by the response of Dr Deckers when asked whether limiting imports to mature, symptomless apples would achieve Australia's ALOP: Panel Report, Annex B-1 at [117]. Dr Deckers' response was clear:

> The limitation of apple exports to mature symptomless apples is not enough to achieve Australia's ALOP.

89. Dr Deckers' testimony in this respect was especially significant because it manifests explicit and strong support for the IRA's assessment of unrestricted risk: the IRA's conclusion that the risk associated with mature, symptomless apples exceeds Australia's

ALOP was, in Dr Deckers' view, sound and sufficiently warranted measures to reduce that risk. Yet, in reaching its overall conclusion that the risk assessment for fire blight contained in the IRA failed to comply with Art 5.1 and 5.2 (and consequently with Art 2.2), the Panel, again, made no reference to that evidence.

90. These and other examples of the failure to engage with significant evidence of Dr Deckers favourable to Australia may well be indicative of a failure on the part of the Panel in the performance of its obligation under Art 11 of the DSU to make an "objective assessment" of the facts. Australia makes that claim directly as a separate ground of appeal: see below at [126]-[160]. The significance of the examples for present purposes is that, assuming in the Panel's favour that the Panel sought to address all of the evidence the Panel thought relevant to its assessment, the failure of the Panel to address that important evidence of Dr Deckers demonstrates at the very least a failure on the part of the Panel meaningfully to evaluate the materiality of the flaws that it found in the intermediate conclusions reached in the IRA. Assuming the Panel's findings as to those intermediate conclusions to be otherwise well-founded, what the Panel should have gone on to ask, but erroneously did not ask, was whether those flaws were "so serious" as to undermine "reasonable confidence" in the risk assessment for fire blight as a whole: *Australia – Salmon (Article 21.5 – Canada)* at [7.57].

91. However, the Panel's findings that the intermediate conclusions drawn in the course of the IRA's analysis of fire blight are flawed are, in fact, not well-founded and the Panel has erred in significant respects.

92. As to the Panel's findings that intermediate conclusions in the IRA were not supported by what the Panel referred to as "adequate" or "sufficient" scientific evidence, the Panel in truth applied a standard of scientific "sufficiency" well beyond anything required by the first criterion in *US/Canada – Continued Suspension* and wholly at odds with *Japan – Agricultural Products II* at [84]. Having regard to the terms of Arts 2.2, 5.1, 5.2, 5.3 and Annex A(4), it is inherent in the text and structure of the SPS Agreement that the correct interpretation of "risk assessment" within the meaning of Art 5.1 must allow for the fact that the "nature and characteristics of the substance and risk being evaluated" and the "quality and quantity of the scientific evidence" may give rise to significant instances of uncertainty or inconclusiveness; it must allow for the fact that a risk assessor, "taking into account risk assessment techniques developed by the relevant international organizations", including ISPM No. 11 and ISPM No. 2, may exercise expert judgement to deal with such uncertainty

or inconclusiveness. As has already been emphasised, it is possible for the available scientific evidence to be sufficient to conduct a risk assessment, such as to foreclose recourse to Art 5.7, but still to be inconclusive or uncertain in its import: *Japan – Apples* at [184]. That circumstance may present "particular methodological difficulties", but "does not excuse the risk assessor from evaluating" the risk: *US/Canada – Continued Suspension* at [562]. What ought to have been recognised as real-world gaps and ambiguities in the scientific data in existence and accessible to Biosecurity Australia and as calling for the interstitial application of expert judgement in an intensely practical setting have been translated by the Panel into an insufficiency of scientific data. The Panel was wrong. The Panel may have identified areas in which human understanding is lacking, but it has not identified cognisable error in the approach of the IRA.

93. As to the Panel's findings, sometimes discrete and sometimes overlapping, that intermediate conclusions in the IRA were not "objective and coherent", the Panel has in truth applied a standard well beyond anything required by the third of the criteria in *US/Canada – Continued Suspension* and wholly at odds with *Japan – Agricultural Products II*. What ought to have been sufficient to meet that criterion was that Biosecurity Australia in the IRA:

(1) rationally explain its overall methodology and the topics on which intermediate conclusions are required to be drawn within that overall methodology;

(2) identify, so far as relevant to the drawing of a conclusion on each topic, the scientific evidence that was actually available together with the areas in which and degree to which the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty;

(3) record, so far as relevant to the drawing of a conclusion on each topic, any expert judgement that was actually made in the light of the identified available scientific evidence and in the light of the identified scientific uncertainty; and

(4) ensure that any expert judgement actually so made falls within a range that could be considered legitimate by the standards of the scientific community.

94. That is what Biosecurity Australia in fact did in the IRA. Provided its intermediate conclusions conformed with those minimum requirements, the IRA's reasoning would be sufficiently objective and coherent: there was no further obligation on the part of

Biosecurity Australia to explain in greater detail precisely how it drew each intermediate conclusion.

95. The Panel failed to ask the right question: namely, whether the expert judgements made by Biosecurity Australia at intermediate steps in the IRA fall within a range that could be considered legitimate by the standards of the scientific community. Instead, the Panel appears to have asked whether the Panel itself, or the experts engaged by the Panel, would have made the same judgement: Importation Step 1 [7.258], Importation Step 3 [7.288], Exposure [7.403], [7.423], [7.442], Consequences [7.464]-[7.469].

96. And the Panel has gone on to impose on Biosecurity Australia an apparently free-standing obligation to explain precisely how it got to the expert judgements it made and recorded at intermediate steps in the IRA. The Panel recognised at [7.433] that Australia was entitled, consistently with ISPM No. 11 and ISPM No. 2, "to estimate the answers ... through the use of expert judgement" and recognised at [7.440] that "expert judgement may be an important tool for the risk assessor". However, the Panel at [7.440] and [7.804] discounted Biosecurity Australia's exercise of that entitlement on the basis that Biosecurity Australia needed to demonstrate that the use of expert judgement was "documented" and "transparent", apparently adopting the view that "[n]on-compliance with these requirements" was enough in itself to "produce errors in the exercise of expert judgement". The failure of Biosecurity Australia to adhere to this supposed standard of "documentation" and "transparency" was a constant theme in the Panel's analysis:

> The use of expert judgement must be documented and transparent ... Non-compliance with these requirements, may produce errors in the exercise of expert judgement ... Australia would have had to demonstrate that the exercise of expert judgement was documented, transparent and based on the relevant reliable scientific evidence: Panel Report at [7.440]
>
> ...the Panel has already noted that the use of expert judgement must be documented and transparent: Panel Report at [7.593]
>
> The use of expert judgement must be documented and transparent ... Non-compliance with these requirements, may produce errors in the exercise of expert judgement: Panel Report at [7.746].

> The use of expert judgement must be documented and transparent ... Non-compliance with these requirements may produce errors in the exercise of expert judgement ... Because it is subject to certain rules, the exercise of expert judgement is not immune from examination by a Panel: Panel Report at [7.804].
>
> (emphasis added)

97. The Panel was fundamentally wrong to impose on Biosecurity Australia such a free-standing obligation to explain precisely how Biosecurity Australia got to the expert judgements it made and recorded at intermediate steps in the IRA. No such obligation exists in Art 5.1 of the SPS Agreement. Nor does any such requirement arise, even by way of exhortation, under ISPM No. 11 or ISPM No. 2. The ISPMs do not, of course, lay down requirements that are binding on a Member relying upon a risk assessment. The standard of "documentation" and "transparency" exhorted by ISPM No. 11 at [2.4] and ISPM No. 2 at [3.1] and [3.2] go so far as to require an identification of where expert judgement has been used and an explanation of what scientific uncertainty has given rise to the need for that expert judgement to be made. However, they do not suggest, even as counsel of perfection, any need for an explanation of how a particular expert judgement was reached. The IRA identified all of the scientific data relevant to each intermediate step and noted the extent to which the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty. At each intermediate step where the inconclusive or incomplete nature of that scientific data gave rise to scientific uncertainty, the IRA identified the nature of the expert judgement required to be made in the light of that scientific uncertainty and recorded the judgement actually made. The IRA also included an explicit statement (at B332) documenting the process of making expert judgements and the constraints observed. That is sufficient documentation and transparency: the point at which judgement is exercised is apparent as is the significance of that judgement within the overall method of estimation. The IRA was therefore sufficiently transparent in its use of expert judgement and the Panel has erred by imposing too high a standard of transparency. It will always be possible to demand more reasoning or more elaboration; but the IRA's documentation of its expert judgements was sufficient and the Panel demanded too high a standard of transparency.

98. The unrealistic nature of the standard of documentation and transparency imposed on Biosecurity Australia is highlighted when the approach of the Panel to expert judgements recorded in the IRA is contrasted with the approach of the Panel to expert judgements expressed by the experts the Panel itself appointed. In relation to expert judgements

expressed by the experts the Panel itself appointed, the Panel was frequently prepared to accept and act upon very high level conclusions articulated without detailed reasoning.

99. It is appropriate to turn next to precisely how these errors of interpretation and application played out in the Panel's analysis of the IRA's assessment of fire blight.

100. Importation Step 1 represents the probability that *E. amylovora* is present in a source orchard in New Zealand. The IRA estimated the probability to be 1, meaning that the bacterium will be present in all source orchards in New Zealand. It reasoned that fire blight is widespread in New Zealand, that there is no scientific literature showing any area of New Zealand to be free from fire blight and that MAFNZ had not provided any information in support of disease-freedom for any apple producing area in New Zealand.

101. The Panel concluded, in reliance on the testimony of Dr Paulin, that:

> the scientific evidence presented in the IRA does not demonstrate that this is true: Panel Report at [7.258]
>
> (emphasis added)

Although Dr Paulin did express the opinion that the IRA's estimate was not true (Annex B-2 at [315]), that opinion must be qualified by his testimony on Importation Step 1 that the reasoning in the IRA is "objective and coherent" and is "based on scientific evidence" though the probability of 1 is "probably a mere exaggeration": Panel Report, Annex B-1 at [152], [161]. The Panel has adopted the expert's own view that the estimate has not been shown to be "true" rather than the part of the expert's testimony relevant to the correct question whether the estimate was within a legitimate range. The Panel has also failed to assess the significance of any over-estimation of Importation Step 1 either to the overall probability of importation or to the overall assessment of risk.

102. Importation Step 2 represents the probability that fruit picked from an orchard in which *E. amylovora* is present will itself be either infested (the bacteria is present on the surface of the fruit) or infected (the bacteria is present in the tissue of the fruit). The IRA identified a large volume of published scientific literature emanating from different countries in different seasons using different methodologies. The results of the identified studies were diverse, some of the studies finding no infestation or infection, others finding infestation or infection at rates from less than 1% to 75%. The IRA concluded (at B65) that more weight should be given to studies on apples sourced from orchards showing symptoms of fire blight

and that it was appropriate to choose a value that took into account the range of variation reported in studies carried out in North America and New Zealand. On that basis, the IRA estimated the probability as a triangular distribution with a minimum value of 0.001, a maximum value of 0.05 and a most likely value of 0.03.

103. In finding the IRA's reasoning not to be coherent and objective, the Panel relied upon Dr Paulin's testimony to the effect that "no general and reasonable conclusion ... can be based on these disparate results": Panel Report at [7.274]. In so doing, the Panel failed to adhere to Appellate Body guidance that scientific uncertainty or inconclusiveness "does not excuse the risk assessor from evaluating" the risk: *US/Canada – Continued Suspension* at [562]. The Panel criticised the perceived failure of the IRA to justify why more weight was given to studies on apples sourced from orchards showing symptoms of fire blight (at [7.272]) and erroneously assumed that the IRA "aggregated" the results of the different studies (at [7.274]). In so doing, the Panel failed to ask itself the correct question whether the judgement made was within a range that could be considered legitimate according to the standards of the scientific community: the requisite standard of objectivity and coherence relates not to the quality of reasoning *per se*, but the quality of the "particular conclusions drawn": *US/Canada – Continued Suspension* at [591]. The Panel has also failed to assess the significance of any over-estimation of Importation Step 2 either to the overall probability of importation or to the overall assessment of risk.

104. Importation Step 3 represents the probability that clean fruit is contaminated during picking and transportation to a packing house. The IRA relied on two specific studies showing, first, that 4% of untreated damaged apples became contaminated and, secondly, that 37% of apples packed in containers become damaged. The probability that clean fruit is contaminated was then derived by multiplying the probability of an apple becoming damaged by the probability of an apple becoming infected given that the apple was damaged: the probability was estimated as a triangular distribution with most likely value of 0.01 and minimum and maximum values of 0.001 and 0.03.

105. The Panel erred in two significant respects. First, it found (at [7.289]) that "the studies cannot constitute an adequate scientific basis for a coherent and objective analysis", again overlooking the practical necessity for a risk assessor to make a judgement even when confronted by limited scientific evidence. Secondly, it relied (at [7.288]) upon the experts' own views that probability of contamination "seems to be rather high", rather than whether

the estimate is within a range that can be considered legitimate according to the standards of the scientific community. The Panel has also failed to assess the significance of any over-estimation of Importation Step 3 either to the overall probability of importation or to the overall assessment of risk.

106. Importation Step 5 represents the probability that clean fruit is contaminated during processing in the packing house. The IRA estimated Importation Step 5 as a triangular distribution with minimum value of 0.001, maximum value of 0.05 and a most likely value of 0.025. The Panel found the estimate not to be objective and coherent: Panel Report at [7.320]. However, this finding of the Panel was expressed not to flow from any conclusion that the estimate was outside a range that could be considered legitimate according to the standards of the scientific community but rather to flow from the observation that there was "no indication in the IRA ... of how the results of [certain] scientific studies", actually referenced in the IRA, "were taken into account". The Panel has also failed to assess the significance of any over-estimation of Importation Step 5 either to the overall probability of importation or to the overall assessment of risk.

107. Importation Step 7 represents the probability that clean fruit will become contaminated during palletisation, quality inspection, containerization and transportation. The IRA estimated Importation Step 7 as a triangular distribution with minimum value of 0, maximum value of $1 \times 10^{-6}$ (one in one million) and a most likely value of $5 \times 10^{-7}$ (one in two million). The Panel found that "the IRA's choice of a probability interval of zero to one in one million for events with a 'negligible' likelihood of occurring" is "not properly justified": Panel Report at [7.342], [7.508]. While the Panel's reasoning in this regard is an aspect of Australia's separate ground of appeal that the Panel failed in its duty to make an objective assessment of the matter before it (see below at [126]-[160]), it is also illustrative of the Panel's failure to ask itself the correct question, namely, whether the estimate for Importation Step 7 (irrespective of any perceived flaw in the relationship between the numerical range and the qualitative descriptor) was within a range that is legitimate according to the standards of the scientific community.

108. Nor did the Panel pause to assess the significance of any over-estimation of Importation Step 7 either to the overall probability of importation or to the overall assessment of risk. The significance of its failure to do so can be seen by observing that the contribution made by Importation Step 7 to the overall probability of importation is several orders of

magnitude less than could be considered material. By applying the mean value for the infestation rate of apples imported from New Zealand of 3.9% (IRA at B80) to the most likely volume of imports of 150 million apples, it can be estimated that approximately 6 million of those 150 million apples would be contaminated on arrival. Thus, approximately 144 million clean apples would pass through Importation Step 7. The IRA's estimate of the probability at Importation Step 7 as a triangular distribution therefore corresponds to between 0 and 144 apples (one in every one million apples), with a most likely value of 72 apples (one in every two million apples), being contaminated at that step. The contribution of 72 apples to the approximately 6 million apples already contaminated on arrival is an insignificant contribution, being some five orders of magnitude smaller.

109. "Exposure" describes the transfer of *E. amylovora* from infested or infected apple waste to a susceptible host plant and is a process dependent on a number of factors including the viability of the pest, the survival mechanism of the pest, the transfer mechanism of the pest, inoculum dose, host receptivity and environmental factors. In relation to the transfer mechanism, the IRA (at B87-88) considered browsing insects to be the most likely potential transfer mechanism and mechanical transmission by workers and equipment also to be possible. The IRA (at B90) "explicitly acknowledged that in some circumstances the chances of exposure would be zero" and estimated the probability of exposure as a uniform distribution with minimum and maximum values of zero and $1 \times 10^{-6}$ (one in one million).

110. The Panel at [7.417] found that the IRA's conclusions in relation to the transfer mechanisms were "not supported by scientific evidence". Here, the Panel has overlooked that while there may be lacking direct scientific evidence on *specific* mechanisms of transfer, it is established that *transfer itself* can occur (see the testimony of Dr Paulin and Dr Deckers: Panel Report, Annex B-2 at [254]-[255]). Confronted with such a state of scientific evidence, the IRA Team was not excused from making an assessment of risk despite the uncertainties involved. That said, the Panel accepted at [7.403] that "the browsing insects scenario ... is based on events that cannot be completely dismissed" only to conclude at [7.403] and [7.423] that the value assigned to the probability of transfer "should be commensurate to the extremely low likelihood of transmission through the browsing insects scenario." But it reached this finding without giving any consideration to the range of estimates that would be considered legitimate according to the standards of the scientific community. Instead it has displaced the judgement made in the IRA in favour of its own unexpressed, but implicit,

assessment of a value "commensurate to the extremely low likelihood". Indeed, had the Panel asked itself the correct question, it would not have overlooked, as it did, the very important evidence of Dr Deckers to the effect that the estimate in relation to exposure "is true": Panel Report, Annex B-2 at [297].

111. Similarly, the use of the uniform distribution was said by the Panel to be unjustified: Panel Report at [7.496]. Although the Panel did not make this finding specifically in connection with exposure, the IRA used the uniform distribution with the interval of zero to $1 \times 10^{-6}$ only in estimating the probability of exposure. In reaching its conclusion, the Panel placed determinative weight upon Dr Sgrillo's testimony that a triangular distribution would have been more appropriate, without assessing the significance of Dr Schrader's testimony that a uniform distribution is useful when there is insufficient information to estimate a most likely value (a necessary parameter in a triangular distribution): Panel Report, Annex B-1 at [781]. The Panel asked itself not whether the judgement made to use the uniform distribution was in a legitimate range of available judgements, but whether the judgement was the correct or preferable one:

> As noted by Dr Sgrillo, there is merit in New Zealand's argument that a triangular distribution would have been preferable to avoid overestimating the likelihood of "negligible" events ... the IRA "could have considered a triangular distribution ... This will correct the kind of distortion (of bias) in generating random samples in this range." (Panel Report at [7.495])
>
> (emphasis added)

Had the Panel asked itself the correct question, it could not have overlooked, as it did, the testimony of Dr Schrader.

112. The Panel's error in relation to its assessment of the exposure step directly affects what may be a further finding by the Panel at [7.423] that the IRA's conclusions regarding the probability of spread are not justified: such a finding is not made clearly, but if it is made, it is consequential upon the Panel's analysis of the "browsing insects scenario": Panel Report at [7.423].

113. The Panel also found that the IRA's conclusion regarding the probability of establishment "reflects an assumption" found "not to be supported by scientific evidence nor based on a coherent and objective reasoning": Panel Report at [7.420]. That assumption is, apparently, one allegedly made in the IRA's consideration of the minimum population of

bacteria needed for establishment. The Panel addressed this issue under the heading "Inoculum dose": Panel Report: [7.404]-[7.408]. The Panel found that "the IRA's discussion on inoculum dose is supported by adequate evidence and generally coherent": Panel Report at [7.408]. The only criticism levelled at the IRA in this respect was that it "fail[ed] to note the difference between experiments taking place under ideal conditions in the laboratory, and natural circumstances". This criticism manifests the Panel's failure to ask the correct question whether (notwithstanding any differences between laboratory and natural conditions) the IRA's estimate of the probability of establishment was within a range that could be considered legitimate according to the standards of the scientific community.

114. The IRA estimated the potential biological and economic consequences associated with the entry, establishment and spread into Australia of a pest by, as explained above at [44], assigning individual impact scores to various factors and then combining those scores to arrive at an overall assessment. The IRA assessed the consequences associated with fire blight as "high". The Panel found this assessment not to rely on adequate scientific evidence: Panel Report at [7.470]. In so finding, the Panel relied virtually exclusively on the testimony of Dr Paulin. The Panel was impressed by Dr Paulin's view that it is "impossible to predict the economical consequences of the introduction of fire blight in a new area" and that the impact scores "could be" or "look" to be exaggerated and that in relation to a number of the individual impact scores, he would have made a different assessment: Panel Report at [7.464]-[7.469].

115. In relying so heavily on the testimony of a scientific expert, the Panel has held the IRA's assessment of consequences to a scientific standard of satisfaction. It has failed to recognise that a risk assessment, properly understood, must assess "potential" consequences and must take into account "relevant economic factors" in what is necessarily a practical and broad-ranging enquiry. The undue reliance upon the scientific aspects of the evidence, and the failure to appreciate the relevance of the requirement in Art 5.3 to take into account economic factors is evidenced by the Panel's failure to consider, or even mention, the economic evidence of actual production losses shown to have been caused by outbreaks of fire blight at Hawkes Bay in New Zealand in 1998 and in Michigan, United States in 2000: IRA at B98-99. Had the Panel properly appreciated the meaning of "risk assessment", informed by Art 5.3 and Annex A(4), that evidence would not have been overlooked.

116. Yet again, the Panel failed to ask whether the overall assessment of consequences made by the IRA falls within a range that could be considered legitimate. So much is evident from the Panel's failure to assess the significance of Dr Paulin's and Dr Deckers' respective views that the consequences could properly be assessed as "high":

> Dr Paulin: The qualification of "high" for the impact of fire blight is to my eyes appropriate, based on the possible international consequences of this introduction": Panel Report, Annex B-1 at [94].
>
> Dr Deckers: The biological and economical consequences of a fire blight introduction can indeed be classified as "high": Panel Report, Annex B-1 at [85].

Had the Panel asked itself the correct question, this testimony would not have been overlooked.

*3) The Panel's errors: ALCM*

117. The Panel reviewed Australia's measure in relation to ALCM by "focusing on the specific alleged flaws in the IRA identified by New Zealand in its various submissions": Panel Report at [7.788]. The alleged flaws, seven in number, were said to be "incorrect assumptions" or failures "properly [to] take into account" certain matters: Panel Report at [7.788].

118. The fundamental error in the approach of the Panel was to find that certain matters had not properly been taken into account, or to find that the IRA was based upon incorrect assumptions, without ever asking the question the Panel was required to ask, namely, whether the judgement in fact made in the IRA, notwithstanding any perceived shortcomings in the reasoning to that judgement, was within a range that could be considered legitimate according to the standards of the scientific community. This failure is manifest in relation to the probability of <u>importation</u>, the probability of <u>establishment and spread</u> and the assessment of <u>potential biological and economic consequences</u>.

119. In relation to <u>importation</u>, the IRA Team made two separate estimates and conducted parallel risk assessments based on each estimate. The first was based upon the schematic importation scenario: IRA at B158-165; the second was based directly upon trade data provided by New Zealand in August 2005 (**August 2005 data**): IRA at B166. The parallel assessments made are seen clearly in the tables set out in the IRA at B183 and B187. The

importation scenario yielded an estimated probability of importation of 4.1% while the August 2005 data yielded an estimate of between 0.1 and 0.38%. Ultimately, both assessments concluded that the risk associated with ALCM was "low", in excess of Australia's ALOP.

120. The Panel found that the IRA did not properly take into account the proportion of cocoons with viable ALCM both generally and in relation specifically to the effect of the parasitic wasp, *Platygaster demades*. The conclusions of the Panel were expressed in the following terms:

> the Panel finds that the IRA's reasoning regarding the viability of ALCM is not objectively justifiable: Panel Report at [7.806].
>
> the Panel finds that the IRA's reasoning regarding the viability of ALCM in the light of the possible incidence of parasitism by the wasp *Platygaster demades* is not objectively justifiable: Panel Report at [7.812].

At no point did the Panel find that the estimate of the probability of importation was not within a legitimate range. In fact, it is evident that had the Panel asked itself the correct question, it would not have faulted the IRA in relation to the probability of importation, for the Panel said at [7.1360] that:

> The Panel notes that it has already found that the IRA's conclusion that New Zealand apples have a 4.1 per cent infestation rate does not result from a coherent and objective risk assessment. As noted above, New Zealand has made a prima facie case that an infestation rate more in the range found in the August 2005 data would be more realistic in light of the various factors that the IRA did not properly take into account.
>
> (emphasis added)

The measures in relation to ALCM were adopted on the basis of the "infestation rate ... in the range found in the August 2005 data": IRA at B190-191. The Panel has found abstract fault in a perceived failure by the IRA to take into account viability when the Panel's own conclusion was that the infestation rate relied upon was "more realistic".

121. In relation to establishment and spread, New Zealand alleged that the IRA was based upon wrong assumptions regarding the flight range of ALCM, the period that would be needed for ALCM to emerge, the climatic conditions that are necessary for establishment and spread and the mode of trade of New Zealand apples imported into Australia: Panel Report at [7.788]. The Panel found that New Zealand had failed to make a prima facie case in relation

to the flight range of ALCM: Panel Report at [7.824]. In the three other respects, it found against the IRA, but again found only abstract fault in the IRA not having taken into account some identified "factor", never pausing to ask the correct question whether the "factor" meant that the estimate reached in the IRA was outside a legitimate range. This error is revealed starkly by comparing the conclusions reached in respect of each "factor" in which the Panel found that "the IRA's reasoning ... is not objectively justifiable" (Panel Report at [7.841], [7.855] and [7.867]) with the Panel's own recognition at [7.871] that none of these "factors" was necessarily material to any particular conclusion reached in the IRA:

> if the IRA had taken the factors described in the preceding paragraph into account, and found that any of them had a significant impact on the analysis, presumably the whole range of estimations, and not just the upper or lower values, could have shifted.

122. It appears that the Panel has failed to assess the materiality of the perceived errors, and has failed to ask itself the correct question whether the perceived errors take the judgement made in the IRA outside a legitimate range, in an earnest attempt not to conduct a "*de novo* review": Panel Report at [7.854], [7.865]. In so doing, however, the Panel has misunderstood what would amount to an impermissible *de novo* review. To assess properly the materiality of a perceived error, or to ask the question whether a judgement falls within a range of judgements that could be considered legitimate according to the standards of the scientific community does not require the Panel to make those judgements for itself nor to determine for itself the risk associated with a particular pest or product.

123. In relation to potential biological and economic consequences, the Panel reviewed the IRA's assessment in a fashion similar to that it adopted in relation to fire blight, relying on the testimony of Dr Cross that, in his view, different impact scores for particular factors "would be more appropriate" or "more objective and credible": Panel Report at [7.881]. For the same reason given in relation to fire blight, the Panel has erred by failing to stand back and ask whether the overall judgement made was within a legitimate range, having regard to the requirement to assess "potential" consequences taking into account relevant economic factors. Dr Cross's overall view was that any different impact scores he would have assigned "would not result in a change in the rating of the overall consequences as 'low'" and that "Australia's analysis was objective and credible": Panel Report, Annex B-1 at [561]. The failure to advert to Dr Cross' testimony in this regard indicates again the wrong question which the Panel asked itself.

*4) Conclusion on Arts 2.2, 5.1 and 5.2*

124. The Panel treated Art 5.2, correctly in Australia's submission, as "inextricably linked to Art 5.1, as [it] enumerates a list of factors that must be taken into account by Members when conducting their risk assessments": Panel Report at [7.211]. According to the Panel, the breaches of both Arts 5.1 and 5.2 are constituted by the same alleged "flaws" in the IRA. The Panel found no independent basis for breach of Art 5.2. Similarly, the obligation in Art 2.2 "is made operative in other provisions of the SPS Agreement" (relevantly, the obligations in Arts 5.1 and 5.2): *US/Canada – Continued Suspension* at [674]. Consistently with *Australia – Salmon* at [137]-[138], the Panel found Australia's measures not to conform to Art 2.2 only as a corollary of its findings that the measures do not conform to Arts 5.1 and 5.2: Panel Report at [7.472], [7.510], [7.887], [7.905]. Accordingly, the correctness of the Panel's conclusion on Art 2.2 is entirely dependent upon the correctness of its conclusions on Arts 5.1 and 5.2.

125. Correcting for the errors identified above, therefore, the Panel should have found that the measures proposed to be imposed by Australia in respect of fire blight and ALCM, and the general measures linked to both pests, are consistent with Arts 5.1 and 5.2 (and consequently Art 2.2) of the SPS Agreement.

**C. Failure to make an objective assessment: ground (c)**

*1) Applicable legal principles*

126. Article 11 of the DSU provides that the function of a Panel is "to assist the DSB in discharging its responsibilities under [the DSU] and the covered agreements", including, relevantly, the SPS Agreement. Article 11 goes on to provide that, in the fulfilment of its function, a Panel "should make an objective assessment of the matter before it, including an objective assessment of the facts of the case." That provision charges a Panel with an "obligation" to do so: *Mexico – Taxes on Soft Drinks* at [51]. It is an issue of law within the scope of appellate review under Art 17.6 of the DSU whether a Panel has discharged its obligation: *EC – Hormones* at [132].

127. The "matter before" the Panel is the "matter referred to the DSB", that is, the "matter identified in the request for the establishment of a Panel under Art 6.2 of the DSU": *Canada – Wheat Exports and Grain Imports* at [176]; *Guatemala – Cement I* at [72].

Specifically, the matter, conformably with Art 6.2 of the DSU, "consists of two elements: the specific *measures* at issue and the *legal basis of the complaint* (or the *claims*)": *Guatemala – Cement I* at [72].

128. The obligation of a Panel to make an "objective assessment of the matter before it" requires the Panel at least: (1) to understand the "matter before it"; and (2) to engage with all of the important evidence before it that is relevant to that matter.

129. Where, as here, the matter before a Panel comprises a claim that a risk assessment in fact relied upon by a Member fails to comply with Art 5.1 or Art 5.2 of the SPS Agreement, the Panel cannot begin to understand the "matter before it" – and therefore cannot begin to make an "objective assessment of the matter before it" – unless the Panel first understands the risk assessment that has in fact been relied upon by a Member. For the Panel to misunderstand in a material respect what the risk assessor has done is necessarily to fail in the performance of the duty imposed by Art 11 of the DSU.

130. The additional requirement to engage with all of the important evidence before it that is relevant to the matter before it means that a Panel errs if it fails to give significant evidence proper, genuine and realistic consideration and assess its significance: *US/Canada – Continued Suspension* at [553], [615]. While it is true that a Panel has a margin of discretion as the trier of facts, such discretion as it has cannot undermine the overriding obligation to make an objective assessment of the facts it tries. Merely to reproduce testimony without such engagement, or indeed to disregard evidence entirely, constitutes a failure to make an objective assessment of the facts. As the Appellate Body explained in *US/Canada – Continued Suspension* at [615]:

> By merely reproducing testimony of some experts that would appear to be favourable to [a party's] position, without addressing its significance, the Panel effectively disregarded evidence that was potentially relevant for [the party's] case. This cannot be reconciled with the Panel's duty to make an "objective assessment of the facts of the case" pursuant to Article 11 of the DSU.

*2) The Panel's errors: failing to engage with evidence*

131. The Panel's disregard of important evidence has already been referred to as indicative of the Panel's failure correctly to interpret and apply Arts 2.2, 5.1 and 5.2 of the SPS Agreement.

132. The Panel's disregard of important evidence is also separately indicative of the Panel's failure to make an objective assessment of the matter before it.

133. The Panel disregarded critical aspects of the appointed experts' testimony that was favourable to Australia's case. Whereas the Panel in *US/Canada – Continued Suspension* erred by "merely reproducing testimony" and not assessing its significance, the Panel in the present dispute fell even further short of the requisite standard of objectivity in several instances by entirely overlooking the testimony. The importance of the testimony overlooked cannot be understated: first, in respect of fire blight, Dr Deckers clearly and explicitly supported the critical judgements made in the IRA and the necessity for measures. Whatever criticisms the experts may have had about the state of the scientific evidence, or about the intermediate judgements made in the risk assessment process, Dr Deckers' overall view was that measures were sufficiently justified. Secondly, Dr Paulin, as well as Dr Deckers, supported the IRA's assessment of consequences associated with fire blight. Thirdly, in impugning the IRA in relation to fire blight for using, at the exposure step of the analysis, a uniform probability distribution to estimate the likelihood, the Panel failed to assess the significance of Dr Schrader's testimony that the distribution is useful in the precise circumstances confronting the IRA Team at that point. Fourthly, in respect of ALCM, the Panel relied heavily on selective aspects of Dr Cross' testimony to the effect that the IRA's assessment of consequences was wrong. Those comments were divorced from the important context of Dr Cross' view that whatever individual judgements he would have made differently, he agreed with the IRA's aggregate conclusion that consequences were "low".

134. Although some of that testimony has already been referred to in the context of illustrating the Panel's failure correctly to interpret and apply Arts 2.2, 5.1 and 5.2 of the SPS Agreement, it is useful to highlight the strength and frequency of testimony that was favourable to Australia's case and that was effectively ignored by the Panel.

135. Dr Deckers gave significant testimony favourable to Australia on the probability of importation, the probability of exposure, the assessment of potential consequences and the overall warrant for measures.

136. In relation to the probability of importation, Dr Deckers was asked to comment on Australia's proposition that "any purported exaggeration of the probability range is not a serious flaw": Panel Report, Annex B-2 at [257]. Dr Deckers' response, at [259] was clear:

> I don't feel that there was an exaggeration of the estimation there in the importation steps. I think there is a real risk present that should be estimated as good as possible. For me it was not an exaggerated situation here. I think you are right to take the estimation in this way.

137. This testimony, given in response to a question asked specifically to clarify the experts' views on the IRA's estimation of the probability of importation, should be read to qualify significantly Dr Deckers' earlier statement that the probability of importation "could be overestimated": Panel Report, Annex B-1 at [237]. But regardless of precisely how Dr Deckers' testimony should be reconciled, it was not open to the Panel to ignore the testimony favourable to Australia, nor to overstate the effect of the testimony apparently unfavourable to Australia. Whereas Dr Deckers' initial statement was that the probability merely "could be" overestimated, the Panel misunderstood Dr Deckers to have testified that the probability "is probably" overestimated: Panel Report at [7.356]. To make matters worse, the footnote to that claim (footnote 1595) refers to Dr Deckers' testimony favourable to Australia in peremptory and dismissive terms: "But see, Dr Deckers' reply in Transcript of the Panel's meeting with experts, para. 259." The favourable testimony is not reproduced; nor is its significance assessed. The Panel here failed to make an objective assessment of the facts of the matter before it.

138. Additionally, the Panel relied upon aspects of Dr Deckers' testimony criticising intermediate judgements made in the course of the risk assessment process, without assessing the significance of the testimony that overall the probability of importation was not exaggerated: Panel Report at [7.271] (Importation Step 2), [7.288] (Importation Step 3), [7.318] (Importation Step 5). In relying, at [7.258] (Importation Step 1), on the testimony of Dr Paulin, the Panel also failed to assess the significance of Dr Deckers' testimony favourable to Australia.

139. In relation to the probability of exposure, particularly the probability of transfer, Dr Deckers testified that "the chance that the epiphytic bacteria will be transmitted to the susceptible organs of a host plant on the appropriate moment to realise an infection is rather small": Panel Report, Annex B-1 at [240]. Subsequently, the Panel asked him to explain how that compares to "the conclusion in the IRA which states that the exposure value for an individual apple should be in the range 0 to 1 in a million": Panel Report, Annex B-2 at [296]. Once again, Dr Deckers' response (at [297]) was clear:

> This value between 0 and ten to the sixth is also very low, so I think this is true.

140. As before, the Panel relied upon the expert's initial testimony that the "chance ... is rather small", without reproducing or assessing the significance of his clarifying testimony that the IRA accurately estimated that "rather small" chance, in concluding, apparently, that the probability was overestimated: Panel Report at [7.402], [7.417]. In so doing, the Panel failed to make an objective assessment of the facts before it.

141. In relation to the assessment of potential consequences, Dr Deckers was asked whether he considered the IRA to be objective and credible when qualifying the biological and economic consequences of fire blight as "high": Panel Report, Annex B-1 at [85]. His response was clear:

> The biological and economical consequences of a fire blight introduction can indeed be classified as "high".

142. In dealing with the assessment of consequences, the Panel concluded that "according to the experts, the IRA has a tendency to overestimate the severity of the consequences of fire blight in certain aspects". In fact, it only relied upon Dr Paulin's testimony that certain individual impact scores informing the assessment of consequences "could be exaggerated": Panel Report at [7.465]. Once again, the only reference to Dr Deckers' critical and favourable testimony on point was a bare reference in a footnote prefaced by the words "But see": Panel Report at [7.465] footnote 1796. The Panel failed to reproduce the favourable testimony and failed to assess its significance. Accordingly, it failed to make an objective assessment of the facts of the matter.

143. Dr Deckers was asked whether limiting imports to mature, symptomless apples would achieve Australia's ALOP: Panel Report, Annex B-1 at [117]. Dr Deckers' response was clear:

> The limitation of apple exports to mature symptomless apples is not enough to achieve Australia's ALOP.

144. This testimony, favourable to Australia, the Panel reproduced at [7.1191] but dismissed without explanation at [7.1192]. The Panel failed to assess its significance in relation to New Zealand's Art 5.6 claim. Moreover, given that the IRA for fire blight was effectively limited in its scope to the importation of mature, symptomless apples, the testimony was relevant also to the claims under Arts 5.1, 5.2 and 2.2, namely the issue of

whether SPS measures for fire blight were sufficiently warranted by the IRA. Yet the Panel failed to have regard to the testimony for that purpose.

145. Dr Paulin gave significant testimony, favourable to Australia, in relation to the assessment of potential consequences of fire blight. He was asked the same question asked of Dr Deckers: whether he considered the IRA to be objective and credible when qualifying the biological and economic consequences of fire blight as "high": Panel Report, Annex B-1 at [85]. Dr Paulin's testimony indicated some disquiet with some of the impact scores assigned: at [87], [91]-[93]. But, despite his views on individual impact scores, he said overall: "the qualification of 'high' for the impact of fire blight is to my eyes appropriate, based on the possible international consequences of this introduction": Panel Report, Annex B-1 at [94].

146. The Panel based its conclusion against the IRA's assessment of potential consequences on Dr Paulin's views on individual impact scores, without regard to the expert's opinion on the overall assessment of consequences. In failing to the reproduce or assess the significance of this important testimony favourable to Australia, the Panel failed to make an objective assessment of the facts of the matter.

147. Dr Schrader was asked to comment on "the implications of a methodological approach for a risk assessment that defines the minimum and maximum of a distribution, but not the central tendency of the distribution" and whether "this type of risk assessment [could] result in a distorted view of the actual likelihood of an event": Panel Report, Annex B-1 at [781]-[783]. Dr Schrader responded:

> A Uniform distribution represents a distribution for which each value in the continuous range of values between minimum and maximum limits occurs with the same probability. It is the simplest and least realistic method of the three methods mentioned here [uniform, triangular and pert distributions] and is useful in situations, where a minimum and maximum value are available, but no sufficient information to determine the most likely value. This method implies a high degree of uncertainty. ... The triangular distribution can be applied if a "most likely" estimate in addition to the minimum and maximum estimates is available ... the beta-PERT distribution also uses and emphasizes the most likely value."
>
> (emphasis added)

148. The Panel, in finding the use of the uniform distribution to be unjustified has emphasised Dr Sgrillo's testimony that the IRA Team should have used a triangular distribution and the part of Dr Schrader's testimony in which she said that the uniform

distribution is the least realistic of the three distributions (Panel Report at [7.492]-[7.495]) but failed to reproduce or assess the significance of her statement, favourable to Australia, that the distribution is "useful" in the circumstances which confronted the IRA Team, namely "a high degree of uncertainty" where there was "no sufficient information to determine the most likely value." Accordingly, the Panel has failed to make an objective assessment of the facts.

149. Dr Cross gave testimony, favourable to Australia, on the assessment of potential consequences of entry, establishment and spread of ALCM into Australia. He was asked to "comment on whether the evaluation in Australia's IRA of the potential biological and economic consequences of ALCM incursion in Australia was objective and credible": Panel Report, Annex B-1 at [556]. In his answer, Dr Cross indicated that he thought that on some factors, an impact score different from that assigned by the IRA would have been appropriate. Despite that, Dr Cross was unambiguous in explaining, at [561], that:

> the re-categorisation of the direct impacts on plant health and the need for control treatments would not result in a change in the rating of the overall consequences as "low". In this respect, the conclusion of Australia's analysis was objective and credible.

150. The Panel, in dealing with the assessment of consequences, reproduced Dr Cross' testimony on the individual impact scores he would have re-categorised: Panel Report at [7.881]. The Panel then concluded that its role was not to reassess the scores, that "the IRA has a tendency to overestimate the severity of ALCM consequences in certain aspects" and that the evaluation of the potential consequences was not coherent and objective: Panel Report at [7.882]-[7.885]. The Panel failed to reproduce or assess the significance of Dr Cross' testimony, favourable to Australia, that the consequences were properly categorised as low, even accepting the re-categorisations of individual impact scores that he thought were overestimated. In so doing, the Panel failed to make an objective assessment of the facts before it.

151. Finally, as explained at [115] above, the Panel proceeded on the erroneous basis that an assessment of consequences must be based only on scientific evidence. It failed, thereby, to engage with or even refer to the evidence of actual production losses shown to have been caused by outbreaks of fire blight at Hawkes Bay in New Zealand in 1998 and in Michigan in 2000: IRA at B98-99. That failure is not only a misinterpretation of Art 5.1 of the

SPS Agreement but also a failure to conduct an objective assessment of the matter before the Panel.

*3) The Panel's errors: misunderstanding the IRA*

152. The Panel further failed in the performance of its duty under Art 11 of the DSU by failing to understand the methodology employed in the IRA in a significant respect, namely, as to the choice of a probability interval of 0 to $10^{-6}$ (zero to one in one million) and a midpoint (if uniform distribution is used) of 5 x $10^{-7}$ (0.5 in one million) for events with a "negligible" likelihood of occurring.

153. In relation to fire blight, the Panel found that the IRA was affected by a "methodological flaw" that resulted in the overestimation of the likelihood of entry, establishment and spread. According to the Panel Report at [7.508]:

> the choice of a probability interval of 0 to $10^{-6}$ (zero to one in one million) and a midpoint (if uniform distribution is used) of 5 x $10^{-7}$ (0.5 in one million) for events with a "negligible" likelihood of occurring (corresponding to the qualitative descriptor "the event would almost certainly not occur") is not properly justified in the IRA and leads to an overestimation of the probability of entry, establishment and spread of the pests at issue.

154. This finding was predicated upon a fundamental misunderstanding of the risk assessment methodology. As explained above at [41], the risk assessment is semi-quantitative, combining a quantitative assessment of the likelihood of entry, establishment and spread with a qualitative assessment of the potential consequences. The Risk Estimation Matrix (see above at [45]) requires, in order to estimate the overall risk, that the likelihood of entry, establishment and spread be expressed in qualitative terms. The quantitative estimate of that likelihood is translated into a qualitative description according to the nomenclature set out above at [42]-[43].

155. In exercising expert judgement to represent with an estimated probability distribution an intermediate step in the risk assessment scenario, the IRA Team usually used, as the maximum and minimum value parameters, intervals drawn from the nomenclature. However, <u>crucially</u>, the IRA Team emphasised that it "considered carefully whether they were confident that the range they had chosen would contain the actual value and that the chosen distribution reflected their beliefs." The IRA Team was "not constrained by the intervals suggested" by the nomenclature (IRA at B42; Panel Report at [2.67]). In fact,

Australia always admitted that the defined correspondence between a so-called "negligible" event and a probability interval of 0 to 1 x $10^{-6}$ was, in and of itself, inevitably arbitrary: Australia's Second Written Submission at [246]; Panel Report at [7.477], [7.480]. What was material was that the probability distribution assigned to particular events was not arbitrary: in truth, the qualitative label "negligible" has been assigned to the quantitative range, rather than the range being assigned to the label. At the steps where the range 0 to 1 x $10^{-6}$ was used (notably Importation Step 7 and Exposure), the relevant question for the Panel was whether the estimate was within a range that might be considered legitimate according to the standards of the scientific community, not whether the definitional correspondence between the range and the label was justified. In fact, the Panel's *incorrect* question is evident in its failure, explained at [110] above, to engage with Dr Deckers' testimony on the *correct* question when the interval of 0 to 1 x $10^{-6}$ has been used (Panel Report, Annex B-2 at [297]).

156. This is a complete answer to the Panel's so-called "*ad absurdum*" reasoning that Australia, if its argument be correct, could assign negligible events a quantitative representation of one: Panel Report at [7.480]. First, Australia has not assigned qualitative descriptions a quantitative representation: the true position is the reverse. But furthermore, the error in such a case would lie in the "absurd" estimation of a probability of one for an event that would almost certainly not occur, not in assigning to that probability the label of "negligible".

157. The Panel's opinion that the word "negligible" means something other than within the range of zero to one in one million is, therefore, quite irrelevant. Nevertheless, it is important to observe the Panel's substantive error in holding that opinion. First, there is no standardised definition of the description "negligible" from which the IRA could be said to have departed: Panel Report at [7.483]. Secondly, the Panel was impressed by the claim that a probability in the range of zero to one in one million, applied to the total volume of trade in apples (150 million), resulted in an event happening "relatively frequently": Panel Report at [7.476], [7.483]. Considering the application of the negligible range to the exposure step, for example, the Panel overlooked that only a fraction of the total volume of apples imported will be infested and discarded as waste at a utility point within proximity to a host. As New Zealand itself acknowledged, the IRA did not conclude or imply that exposure would occur relatively frequently each year: "the IRA assesses that 1 in every 3.3 billion apples will be contaminated with *E. amylovora* and pass that contamination on to an uninfested host in a

fire blight free area with an infection occurring": New Zealand's Second Written Submission at [2.392], footnote 554.

158. The Panel's misunderstanding of the methodology is also evident in the way in which it dealt with the alleged flaws in the abstract and divorced from their actual relevance to the estimates arrived at by the IRA Team. In finding that the methodological flaws constituted an independent basis for the invalidity of the IRA (Panel Report at [7.508]), the Panel has failed to acknowledge that the IRA Team used the interval of 0 to 1 x $10^{-6}$ at just <u>two</u> points (Importation Step 7 and exposure) and with the uniform distribution only at the exposure point. In relation to Importation Step 7, the use of the interval results in an estimated 72 clean apples (5 x $10^{-7}$ x 144 million clean apples out of 150 million imported apples) becoming contaminated at the step; relative to the 6 million infested apples estimated to be imported, this is an insignificant number. In relation to exposure, Dr Deckers testified that the interval was "true" and Dr Schrader testified that the distribution was "useful". The Panel's suggestion that the alleged methodological flaws were serious enough to constitute an independent basis for the IRA's invalidity is unsustainable when the limited uses of the impugned methodologies are understood in their broader context.

159. In basing its conclusions upon a fundamental misunderstanding of a significant aspect of Australia's risk assessment methodology, the Panel failed to make an objective assessment of both the facts of the matter, and the legal basis for the conformity with the SPS Agreement of Australia's measures.

160. Correcting for the multiple failures of the Panel to observe its duty under Art 11 of the DSU to make an objective assessment of the matter before it, the Panel should have found that the measures proposed to be imposed by Australia for fire blight and ALCM, and the general measures linked to both pests, were consistent with Arts 5.1 and 5.2 (and therefore Art 2.2) and Art 5.6 of the SPS Agreement.

## D. Misinterpretation or misapplication of Article 5.6: ground (d)

### *1) Panel's findings and two bases for reversal*

161. Art 5.6 obliges a Member to ensure that its SPS measures "are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection". A measure is presumed to be consistent with Art 5.6 unless a complaining party

shows, in accordance with the footnote to Art 5.6, that there is "another measure" satisfying three cumulative requirements: the alternative measure must (1) be reasonably available taking into account technical and economic feasibility; (2) achieve the Member's ALOP; and (3) be significantly less trade restrictive: *Australia – Salmon* at [194]*; Japan – Agricultural Products II* at [95].

162. Before the Panel in the present dispute, the main issue on which the parties joined in relation to New Zealand's Art 5.6 claims was whether New Zealand had identified an alternative measure satisfying the second requirement, that it "would achieve" Australia's ALOP: Panel Report at [7.1102]-[7.1103], [7.1285]. In order to succeed in its claim, New Zealand was required to show, to the standard demanded by the ordinary rules governing the burden of proof, that the alternative measures it identified in respect of fire blight and ALCM "would achieve" Australia's ALOP.

163. The Panel found that New Zealand had "raised a sufficiently convincing presumption, not successfully rebutted by Australia" that the restriction of imports to "mature, symptomless apples" was an alternative measure in respect of fire blight which would meet Australia's ALOP, and therefore satisfied the second of the three requirements of a claim under Art 5.6: Panel Report at [7.1197]. The Panel also found that New Zealand had made a "prima facie case" that inspection of a 600-fruit sample from each import lot was an alternative measure in respect of ALCM which would achieve Australia's ALOP: Panel Report at [7.1328]. As the three requirements of Art 5.6 are cumulative, these findings were essential to the Panel's conclusion that the measures proposed to be imposed in respect of fire blight and ALCM were more trade-restrictive than required and inconsistent with Art 5.6: Panel Report at [7.1266], [7.1365], [8.1(e)].

164. The Panel's findings under Art 5.6 should, in Australia's submission, be reversed for either or both of two reasons. The first reason is that the findings should be reversed consequentially upon a reversal of the Panel's findings under Arts 5.1 and 5.2 and 2.2. The second reason is that the findings should be reversed in any event because the Panel has misinterpreted the requirements of Art 5.6 and misapplied the rules governing the burden of proof.

*2) Consequential reversal*

165. The Panel made its findings under Art 5.6 largely consequentially upon its findings that the IRA was not a valid risk assessment within the meaning of Art 5.1: Panel Report at [7.1153], [7.1157]-[7.1159], [7.1194], [7.1196]-[7.1197], [7.1300], [7.1308]-[7.1309], [7.1311], [7.1328], [7.1330]-[7.1331]. For that reason, and irrespective of whether that approach was legally sound, if the Appellate Body reverses the Panel's findings under Arts 2.2, 5.1 and 5.2, as Australia submits above that it should, then the Panel's asserted basis for its findings would fall away and it would follow that the Panel's findings under Art 5.6 could not be sustained on their own terms.

166. In relation specifically to fire blight, an additional reason for consequential reversal is that the IRA in respect of fire blight was predicated upon the scenario proposed by New Zealand as its alternative measure, that is, the importation of mature, symptomless apples: IRA at B9. If the Appellate Body reverses the Panel's findings in relation to fire blight under Arts 2.2, 5.1 and 5.2, as Australia submits above that it should, then the conclusion that the risk associated with mature, symptomless apples achieves Australia's ALOP would be foreclosed and the Panel's findings under Art 5.6 not properly open to it.

*3) Reversal in any event: misapplication of rules governing burden of proof*

167. Inconsistency with the requirements of Art 5.6 must be demonstrated according to the ordinary rules governing the burden of proof which, the Appellate Body has explained, are "applicable in any adversarial proceedings": *EC – Hormones* at [98]. Conformably with the general principle of law that it is for a party to prove its own contentions, the Appellate Body has consistently recognised that a complaining party bears the onus of proving its complaint: *US – Wool Shirts and Blouses* at 14; *EC – Hormones* at [98], [109]; *Japan – Agricultural Products II* at [121]-[122]. The burden a complaining party is to discharge is described as "a *prima facie* case of inconsistency": *Japan – Agricultural Products II* at [126]; *Australia – Salmon* at [260]. It is said that upon a complaining party satisfying the "*prima facie*" standard, there is raised a "presumption" of inconsistency which the defending party must then rebut: *US – Wool Shirts and Blouses* at 14; *EC – Hormones* at [98].

168. The language of "*prima facie* case" is attended by considerable ambiguity, largely as a result of the different legal content given to that language in different legal contexts and in different legal systems. As David Unterhalter SC, Chairman of the Appellate Body, has

explained (in David Unterhalter, "The Burden of Proof in WTO Dispute Settlement" in Merit E. Janow et al (eds), *The WTO: Governance, Dispute Settlement and Developing Countries* (2008) 543 at 549):

> A prima facie case may be understood as evidence adduced by one party so as to place an adversary at risk. This is the weaker account of the concept. The stricter account of a prima facie case is that it is proof sufficient to discharge the onus resting upon a party, absent evidence in rebuttal.

Despite the apparent ambiguity, the Appellate Body, as Unterhalter explains at 549, has insisted upon a strict account of the "*prima facie* case".

169. The correct understanding of a "*prima facie* case" was articulated in *EC – Hormones* at [104]:

> It is also well to remember that a *prima facie* case is one which, in the absence of effective refutation by the defending party, requires a panel, as a matter of law, to rule in favour of the complaining party presenting the *prima facie* case.
>
> (emphasis added)

Attention should be focussed on the word "requires": to establish a *prima facie* case of inconsistency, it is not enough to adduce evidence that "suggests", or "leaves open" a measure's inconsistency with the SPS Agreement, nor is it enough to adduce evidence that "casts doubt upon" the presumption of consistency. A party must present evidence that is sufficient, in the absence of opposing evidence, affirmatively to establish the claimed breach. In this regard, the nature of the particular obligation in question informs the degree of evidence required to establish the claimed breach: *US – Wool Shirts and Blouses* at 14. In a case where the contention to be proved is that some condition "would" be satisfied, "the probability of occurrence ... would have to be clear" and it is not enough that a complainant demonstrate "a mere possibility": *India – Quantitative Restrictions* at [114].

170. The Panel, at the outset of its analysis, correctly stated the burden of proof: "the Panel will assess whether New Zealand has adduced sufficient evidence to raise a presumption that the proposed alternative measure would achieve Australia's ALOP": Panel Report at [7.1137]. Its conclusion was also phrased apparently in conformity with that correct statement of the law: "New Zealand has raised a sufficiently convincing presumption ... that the alternative fire blight measure ... would meet this ALOP": [7.1197]; see also [7.1331]. However, it is evident that the Panel in fact applied a significantly lower standard.

171. The Panel relied virtually entirely upon its ultimate finding under the Art 5.1 claim as to the IRA's exaggeration of the risk associated with the importation of apples (Panel Report at [7.1145], [7.1300], [7.1328]). In respect of fire blight, the Panel purported to consider "more directly" whether the alternative measure would meet ALOP, but proceeded only to review the perceived inadequacy of the scientific basis for intermediate estimates in the risk analysis: Panel Report at [7.1154]-[7.1196]. The Panel proceeded similarly in relation to ALCM: Panel Report at [7.1300]-[7.1335]. Even assuming the Panel's analysis to be correct, the Panel was entitled to conclude, at most, that given the shortcomings in the IRA, its findings are not reliable and the inference that the alternative measure would meet ALOP is not foreclosed. In treating that conclusion as sufficient to establish New Zealand's *prima facie* case, the Panel has adopted an erroneous standard: a *prima facie* case is constituted by evidence on the basis of which a Panel would be required to rule in favour of the claim: *EC – Hormones* at [98].

172. The erroneous standard in fact applied is betrayed by the Panel's own descriptions at critical stages of its analysis of how it conceived its task:

> [I]f the assessment of risk is exaggerated, there may be reason to believe that the measures ... may also be exaggerated: Panel Report at [7.1142];
>
> If New Zealand is successful in making this case [that Australia's calculation of the risk is exaggerated], it would cast doubt on whether the risk would exceed Australia's ALOP to the extent calculated by the IRA ... it would cast doubt on whether the risk ... at issue necessarily exceeds ALOP: Panel Report at [7.1143];
>
> it is appropriate for the Panel to go on to consider whether the less strict alternative measure suggested by New Zealand may meet Australia's ALOP: Panel Report at [7.1143];
>
> the Panel will assess more directly whether ... the alternative measures properly identified by New Zealand might sufficiently reduce the risk to, or below, Australia's ALOP: Panel Report at [7.1144].
>
> (emphasis added)

At each point, the Panel has fundamentally misunderstood that New Zealand was required to show not that its alternative measure "might" or "may" achieve Australia's ALOP, but that it "would": *India – Quantitative Restrictions* at [114]. New Zealand's burden was not to "cast doubt" upon the consistency with Art 5.6 of Australia's measure, but to establish affirmatively its inconsistency.

173. In prematurely "shifting the burden" to Australia to rebut the "presumption" of inconsistency, the Panel effectively reversed the onus of proof. The Panel required Australia to prove the consistency of its measures upon a showing by New Zealand of no more than "doubt" about whether an alternative measure would achieve ALOP. Yet the burden of proof in WTO dispute settlement is carefully calibrated to resolve "doubt" in favour of a defending party: Panel, *US – Section 301* at [7.14]. Inconsistency with Art 5.6 must be proved to an exacting standard because the effect of an erroneous resolution of doubt against an importing Member is the imposition upon that Member, in derogation of its "prerogative" right, a level of protection that is lower than the level of protection it has deemed appropriate. Inconsistency with Art 5.6 should be established only in clear cases and the Panel in the present case has misapplied the rules governing the onus and burden of proof.

*4) Reversal in any event: misinterpretation of Art 5.6*

174. The Panel misinterpreted Art 5.6 in two distinct ways. The Panel's first misinterpretation was of the critical words in Art 5.6, "appropriate level of sanitary or phytosanitary protection". The Panel's second misinterpretation was of the requirement that the alternative measure "would achieve" the Member's ALOP.

175. As to the first misinterpretation, it is uncontroversial that a Panel determining whether an alternative measure proposed by a complaining party achieves a Member's ALOP must apply the correct definition of ALOP in accordance with Annex A(5). Thus, a Panel must respect that a Member's ALOP is the level of protection "deemed appropriate" by that Member. Moreover, the concept of ALOP, also referred to in Annex A(5) in correlative terms as the "acceptable level of risk", must be understood by reference to the meaning of "risk" that is explicit in the definition of "risk assessment" in Annex A(4): relevantly, the "risk" is the combination of "the likelihood of entry, establishment or spread" of a pest and of "the associated potential biological and economic consequences."

176. Throughout its consideration of New Zealand's Art 5.6 claims, the Panel applied a wrong legal interpretation of "appropriate level of sanitary or phytosanitary protection" because it failed to consider at all in its reasons on the Art 5.6 claims "potential biological and economic consequences", focusing solely on the likelihood of entry, establishment and spread. Without having considered consequences, the Panel cannot have reached any conclusion about the restricted "risk", properly interpreted, associated with New Zealand's

alternative measures and, therefore, cannot have determined whether the measures would achieve Australia's "ALOP", properly interpreted. Furthermore, in relation to fire blight, the Panel actually concluded that the alternative measure would lead to a likelihood of entry, establishment and spread that is "very low": Panel Report at [7.1192]. As the Risk Estimation Matrix shows, a "very low" likelihood of entry, establishment and spread does not guarantee a "very low" overall risk: it all depends on the separate and indispensible assessment of consequences, which the Panel overlooked entirely.

177. As to the second misinterpretation, Art 5.6 must be interpreted harmoniously with the operation of Art 2.2 and Arts 5.1 and 5.2. In particular, the requirements of Art 5.6 give specific content to the first requirement of Art 2.2 that an SPS measure be applied "only to the extent necessary to protect human, animal or plant life or health": Panel, *Japan – Agricultural Products II* at [8.71]; Panel, *EC – Biotech Products* at [7.1430]; see also *US/Canada – Continued Suspension* at [674]. The requirements are therefore conceptually and fundamentally distinct from those of Arts 5.1 and 5.2, which give specific content to the second and third requirements in Art 2.2 that an SPS measure be "based on scientific principles" and not be "maintained without sufficient scientific evidence": *US/Canada – Continued Suspension* at [674]; *Australia – Salmon* at [137]-[138]. Compliance with Arts 5.1 and 5.2 is not sufficient for compliance with Art 5.6 since measures based on a "proper" risk assessment may be "more trade-restrictive" than alternative measures based equally on a "proper" risk assessment. Conversely, non-compliance with Arts 5.1 and 5.2 is not sufficient to entail non-compliance with Art 5.6 since where a Member fails to conduct a "proper" risk assessment, a conclusion that unrestricted risk is below the acceptable level of risk is not foreclosed, but neither is it entailed: it cannot follow simply from the inadequacy of a risk assessment that the measures are more-trade restrictive than required.

178. Equally, a Panel must, consistently with its "limited mandate" under Art 11 of the DSU to "make an objective assessment of the matter before it", refrain from conducting its own risk assessment to determine whether the alternative measure would achieve the ALOP, just as it must refrain from doing so to determine whether a measure is consistent with Art 5.1.

179. The correct question for a Panel assessing a claim of breach of Art 5.6 to ask is whether a "proper" risk assessment, conducted by the Member maintaining SPS measures, would necessarily have concluded that the alternative measure would achieve the Member's

ALOP. It is not enough that an alternative measure "could" or "might" achieve the ALOP, for the exacting standard provided for clearly and expressly in imperative terms in Art 5.6 is the identification of "another measure ... that achieves" the ALOP. The standard of inquiry, so expressed, is demanded by the logic of the Appellate Body's guidance in *US/Canada – Continued Suspension*: although the interpretation of Art 5.6 did not arise for consideration in that case, the Appellate Body should now interpret Art 5.6, in the manner contended for by Australia, to ensure its harmonious operation with the proper standard of review under Arts 5.1 and 5.2. Such harmonious operation is underpinned by the "limited mandate" of a Panel under Art 11 of the DSU, which applies equally in complaints brought pursuant to Arts 5.1 and 5.2 as in complaints pursuant to Art 5.6 and the centrality of which to the interpretation of Art 5 as a whole should be confirmed.

180. The Panel was evidently anxious to avoid, on the one hand, "slip[ping] into conducting a *de novo* review" by trying "to achieve the same scientific certainty as scientific experts" and also to avoid, on the other hand, "recoil[ing] from carrying out its legal analysis": Panel Report at [7.1193]. But its anxiety has translated into a wrong understanding of what would constitute an impermissible *de novo* review. To be satisfied affirmatively on the basis of the evidence and arguments advanced by New Zealand that the alternative measures "would achieve" ALOP, in the sense that a proper risk assessment would necessarily conclude that the alternative measures would achieve ALOP, does not require an impermissible *de novo* review: the Panel does not have to determine what the risk in fact is and therefore does not have to perform a risk assessment, nor make judgements in the nature of a risk assessor; its task is simply to determine whether a risk assessment properly conducted would necessarily conclude that the alternative measure would achieve the Member's ALOP.

181. The Panel proceeded in reliance upon its findings under Art 5.1 as to the inadequacy of Australia's IRA to find New Zealand's Art 5.6 claims to be established: Panel Report at [7.1153], [7.1157]-[7.1159], [7.1194], [7.1196]-[7.1197], [7.1300], [7.1308]-[7.1309], [7.1311], [7.1328], [7.1330]-[7.1331]; indeed, the finding under Art 5.6 in relation to ALCM rests entirely on the finding under Art 5.1: [7.1328]. But it is not open to a Panel to conclude from the inadequacy of an IRA alone that measures are inconsistent with Art 5.6. Any invalidity affecting the IRA entitled the Panel to conclude no more than that New Zealand's Art 5.6 claim was not foreclosed, not that the claim was established. The Panel erroneously

asked itself whether the alternative measure might, instead of would, achieve Australia's ALOP.

182. The erroneous standard applied by the Panel emerges even more starkly at [7.1331] in the Panel's explanation of its finding in respect of ALCM in the following terms:

> The Panel's finding that New Zealand has raised a presumption (ie made a *prima facie* case) that [its proposed alternative measure] would reach Australia's ALOP is a legal, not a scientific finding. If Australia conducts a proper risk assessment for New Zealand apples, subject to an objectively justifiable analysis it may conclude that the ... risk exceeds Australia's ALOP.

What the Panel demonstrates in this explanation is that it has failed to make the factual finding, critical to any finding of breach of Art 5.6, that the alternative measure proposed by New Zealand would meet Australia's ALOP.

183. The correct question for the Panel to ask was implicit in New Zealand's own submissions. In respect of fire blight, New Zealand's Art 5.6 case was that "there is no scientific evidence that mature, symptomless apples can provide a pathway for the transmission of fire blight ... the risk of transmission is even lower than Australia's ALOP; it is negligible": Panel Report at [7.1121]; New Zealand, First Written Submission at [4.499]. In respect of ALCM, New Zealand's case was that "had the IRA taken [relevant] matters into account, the unavoidable conclusion would have been that the unrestricted risk of ALCM ... is negligible": Panel Report at [7.1286].

184. It is clear that had the Panel asked itself the correct legal question, it would have answered in the negative, for it said so explicitly in the passage from [7.1331] quoted above at [182] (see also, in relation to fire blight, Panel Report at [7.1193]). If that be so, it was not open to the Panel to find that New Zealand had established that its alternative measures would meet Australia's ALOP. In concluding that Australia's measures are inconsistent with Art 5.6, the Panel asked itself a wrong legal question based on a wrong legal interpretation of Art 5.6.

## IV. CONCLUSION

185. In respect of ground (a) in the Notice of Appeal, for the reasons set out in [55]-[67] of this Written Submission, the Appellate Body should:

(1) find that the Panel applied an incorrect legal interpretation of the definition of SPS measure in Annex A(1) to the SPS Agreement; and

(2) reverse the Panel's finding at [7.172] and [8.1](b) of the Panel Report that the measures at issue individually constitute SPS measures within the meaning of that definition.

186. In respect of ground (b) in the Notice of Appeal, for the reasons set out in [68]-[125] of this Written Submission, the Appellate Body should:

(1) find that the Panel applied an incorrect legal interpretation of "risk assessment" and misapplied the criteria for review stated by the Appellate Body in *US/Canada – Continued Suspension* at [590]-[592]; and

(2) reverse the Panel's findings at [7.471]-[7.472], [7.510], [7.886]-[7.887], [7.904]-[7.905], [7.906] and [8.1](c) that the measures proposed to be imposed by Australia for fire blight and ALCM and the general measures infringe the requirements of Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement.

187. In respect of ground (c) in the Notice of Appeal, for the reasons set out in [126]-[160] of this Written Submission, the Appellate Body should:

(1) find that the Panel failed to observe its duty under Art 11 of the DSU to make an objective assessment of the matter before it; and

(2) reverse the Panel's findings at [7.471]-[7.472], [7.510], [7.886]-[7.887], [7.904]-[7.905], [7.906] and [8.1](c) that the measures proposed to be imposed by Australia for fire blight and ALCM and the general measures infringe the requirements of Arts 5.1 and 5.2 (and consequently of Art 2.2) of the SPS Agreement.

188. In respect of ground (d) in the Notice of Appeal, for the reasons set out in [161]-[184] of this Written Submission, the Appellate Body should:

(1) find that the Panel relied upon its erroneous findings against the risk assessments for fire blight and ALCM under Arts 5.1 and 5.2 (and consequently Art 2.2) of the SPS Agreement in concluding that New Zealand's alternative measures would achieve Australia's ALOP;

(2) find that the Panel erred in law as to the interpretation and application of Art 5.6;

(3) find that the Panel failed to observe its duty under Art 11 of the DSU to make an objective assessment of the matter before it; and

(4) reverse the Panel's findings at [7.1197], [7.1328] and [8.1](e) that the measures proposed to be imposed by Australia for fire blight and ALCM infringe the requirements of Art 5.6 of the SPS Agreement.

Dated: September 7, 2010

Annex I

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***Australia – Measures Affecting the Importation of Apples from New Zealand (DS367)***

**Notification of an Appeal by Australia under Article 16.4 and Article 17 of the *Understanding on Rules and Procedures Governing the Settlement of Disputes* and under Rule 20(1) of the *Working Procedures for Appellate Review***

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1. Pursuant to Article 16.4 and Article 17 of the *Understanding on Rules and Procedures Governing the Settlement of Disputes* (**DSU**) and Rule 20 of the *Working Procedures for Appellate Review*, Australia hereby notifies its decision to appeal to the Appellate Body certain issues of law covered in the report of the Panel entitled *Australia – Measures Affecting the Importation of Apples from New Zealand* (WT/DS367/R) (**Panel Report**) and certain legal interpretations developed by the Panel.

2. Australia seeks review by the Appellate Body of the following errors of law and legal interpretation contained in the Panel Report:

   (a) In ultimately finding in the Panel Report at [8.1](b) that the 16 measures at issue, both as a whole and individually, constitute SPS measures, the Panel erred in its interpretation and application of the definition of "sanitary or phytosanitary measure" in Annex A(1) to the *Agreement on the Application of Sanitary and Phytosanitary Measures* (**SPS Agreement**). The error appears at [7.113]-[7.187] of the Panel Report.

   (b) In ultimately finding in the Panel Report at [8.1](c) that the measures imposed by Australia for fire blight and apple leafcurling midge (**ALCM**), as well as the general measures, are inconsistent with the requirements of Arts 5.1 and 5.2 (and consequently Art 2.2) of the SPS Agreement, the Panel erred in its interpretation and application of what constitutes a proper "risk assessment".

The errors appear at [7.240-7.472], [7.473-7.510], [7.782-7.887] and [7.898-7.906] of the Panel Report.

(c) In ultimately finding in the Panel Report at [8.1](c) that the measures imposed by Australia for fire blight and ALCM, as well as the general measures, are inconsistent with the requirements of Arts 5.1 and 5.2 (and consequently Art 2.2) of the SPS Agreement, the Panel failed in the performance of its duty under Art 11 of the DSU to make an "objective assessment of the matter". The errors appear at [7.240-7.472], [7.473-7.510], [7.782-7.887] and [7.898-7.906] of the Panel Report.

(d) In ultimately finding in the Panel Report at [8.1](d) that the measures imposed by Australia for fire blight and ALCM are inconsistent with the requirements of Art 5.6 of the SPS Agreement, the Panel relied upon its erroneous findings against the risk assessments for fire blight and ALCM under Arts 5.1 and 5.2 (and consequently Art 2.2) of the SPS Agreement in concluding that New Zealand's alternative measures would achieve Australia's appropriate level of protection (**ALOP**). In addition to or in the alternative, the Panel erred in its interpretation and application of Art 5.6, and failed to make an "objective assessment of the matter" as required by Art 11 of the DSU, in concluding that New Zealand's alternative measures would achieve Australia's ALOP. The errors appear at [7.1133-7.1197] and [7.1286-7.1331] of the Panel Report.

Annex II

**Schedule of Specific Errors in Panel Report**

SPS measures

| **Nature of Panel's error** | **Paragraph reference to the main body of Australia's appellant submission** | **Paragraphs in Panel Report** |
|---|---|---|
| Misinterpretation of Annex A(1)<br>• Panel failed to ask whether the putative "measures" individually met the three essential characteristics required by the definition of SPS measures in Annex A(1)(a). | [61]-[66] | [7.124]-[7.142], [7.172], [7.187] |

Fire Blight

| **Nature of Panel's error** | **Paragraph reference to the main body of Australia's appellant submission** | **Paragraphs in Panel Report** |
|---|---|---|
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel failed to assess the materiality of the purported flaws | [84]-[90] | [7.259] (Importation Step 1)<br>[7.275] (Importation Step 2)<br>[7.290] (Importation Step 3)<br>[7.320] (Importation Step 5)<br>[7.342] (Importation Step 7)<br>[7.356]-[7.357], [7.447] (Overall probability of importation)<br>[7.417] (Exposure)<br>[7.420] (Establishment)<br>[7.470] (Consequences)<br>[7.484], [7.496], [7.508]-[7.510] (Methodology) |
| | [101] | [7.258]-[7.259] (Importation Step 1) |

| | | |
|---|---|---|
| | [103] | [7.272]-[7.275] (Importation Step 2) |
| | [105] | [7.288]-[7.289] (Importation Step 3) |
| | [106] | [7.320] (Importation Step 5) |
| | [108] | [7.342] (Importation Step 7) |
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel failed to consider whether the IRA conclusions were within the range that could be considered legitimate by the standards of the scientific community | [95] | [7.258]-[7.259] (Importation Step 1)<br>[7.271]-[7.272], [7.274]-[7.275] (Importation Step 2)<br>[7.288]- [7.290] (Importation Step 3)<br>[7.320] (Importation Step 5)<br>[7.342] (Importation Step 7)<br>[7.355]-[7.357] (overall probability of importation)<br>[7.393]-[7.396], [7.399]-[7.403], [7.408], [7.411]-[7.413], [7.417] (Exposure)<br>[7.420] (Establishment)<br>[7.423] (Spread)<br>[7.429], [7.442]-[7.445], [7.448] (Conclusions on entry, establishment & spread)<br>[7.463]-[7.469] (Consequences)<br>[7.483]-[7.484], [7.492], [7.495]-[7.496], [7.508] (Methodology), (Importation Step 7) |
| | [101] | [7.258] (Importation Step 1) |
| | [103] | [7.271]-[7.272], [7.274]-[7.275] (Importation Step 2) |
| | [105] | [7.288] (Importation Step 3) |
| | [106] | [7.320] (Importation Step 5) |
| | [107] | [7.342] (Importation Step 7)<br>[7.508] (Methodology), (Importation Step 7) |

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| | [110], [112] | [7.400]-[7.403] , [7.417], [7.423], [7.442], [7.445] (Exposure) |
| | [111] | [7.493]-[7.496] |
| | [113] | [7.405]-[7.408], [7.420], [7.429] (Inoculum dose) |
| | [114], [116] | [7.463]-[7.469] (Consequences)<br>Annex B-1 [94]<br>Annex B-1 [85] |
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel misapplied the required standard of scientific "sufficiency" | [80]-[82], [92]-[94], [103], [105], [110] | [7.258]-[7.259] (Importation Step 1)<br>[7.273]-[7.274] (Importation Step 2)<br>[7.289] (Importation Step 3)<br>[7.320] (Importation Step 5)<br>[7.399]-[7.403], [7.417] (Exposure)<br>[7.420] (Establishment)<br>[7.429], [7.442]-[7.445] (Conclusions on entry, establishment & spread) |
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel erroneously applied rules or requirements it purported to derive from ISPMs | [96]-[97] | [7.274], [7.318], [7.356]-[7.357], [7.433]-[7.440], [7.482] |
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel erroneously held the IRA's assessment of "consequences" to a scientific standard of satisfaction, and failed to take into account the necessity to evaluate economic factors | [79], [114]-[115], [151] | [7.463]-[7.470] |
| Panel failed in the performance of its duty under Article 11 of the DSU<br>• Panel failed to engage with evidence | [133]-[134] | Dr Deckers:<br>Annex B-1 [85]<br>Annex B-1 [114]<br>Annex B-1 [117]<br>Annex B-2 [227] |

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| | | Annex B-2 [259]<br>Annex B-2 [297]<br>Annex B-2 [379]<br>Dr Paulin:<br>Annex B-1 [94]<br>Dr Schrader:<br>Annex B-1 [781]<br>Annex B-1 [97] |
| | [136]-[138] | [7.354]-[7.357] (fn 1595)<br>Annex B-1 [237]<br>Annex B-2 [227]<br>Annex B-2 [259] |
| | [139]-[140] | [7.399]-[7.403], [7.417], [7.442], [7.445]<br>Annex B-1 [240]<br>Annex B-2 [297] |
| | [141]-[142] | [7.463]-[7.465] (especially fn 1796)<br>Annex B-1 [85] |
| | [143]-[144] | [7.471]-[7.472], [7.1191]-[7.1192]<br>Annex B-1 [117] |
| | [145]-[146] | [7.463]-[7.468],<br>Annex B-1 [94] |
| | [147]-[148] | [7.492], [7.495]-[7.496]<br>Annex B-1 [781]-[783] |
| | [151] | [7.454], [7.463]-[7.470] |
| Panel failed in the performance of its duty under Article 11 of the DSU<br>• Misunderstanding the IRA | [152]-[159] | [7.479]-[7.484],<br>[7.492]-[7.496],<br>[7.508]-[7.510],<br>Annex B-2 [46],<br>Annex B-2 [114],<br>Annex B-2 [198]-[210],<br>Annex B-2 [297] |

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| Misinterpretation and misapplication of Art 5.6<br>• Consequential reversal | [165]-[166] | [7.1153],<br>[7.1157]-[7.1159],<br>[7.1194],<br>[7.1196]-[7.1197] |
| Misinterpretation and misapplication of Art 5.6<br>• Misapplication of rules governing burden of proof | [167]-[173] | [7.1154]-[7.1156],<br>[7.1142]-[7.1144], |
| Misinterpretation and misapplication of Art 5.6<br>• First misinterpretation: ALOP | [175]-[176] | [7.1192]-[7.1197] |
| Misinterpretation and misapplication of Art 5.6<br>• Second misinterpretation: relationship to Arts 5.1 and 5.2 | [177]-[184] | [7.1153], [7.1157]-[7.1159],<br>[7.1194], [7.1196]-[7.1197] |

Apple Leafcurling Midge (ALCM)

| **Nature of Panel's error** | **Paragraph reference to the main body of Australia's appellant submission** | **Paragraphs in Panel Report** |
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| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel erroneously applied rules or requirements it purported to derive from ISPMs | [96]-[97] | [7.804]-[7.805], [7.811], [7.863], [7.865]-[7.866] |
| Misinterpretation and misapplication of Arts 2.2, 5.1 and 5.2<br>• Panel failed to consider whether the IRA conclusions were within the range that could be considered legitimate by the standards of the scientific community and failed to assess the materiality of the purported flaws | [118]-[123] | [7.797]-[7.801], [7.810]-[7.812], [7.868]-[7.871], [7.1360] |
| Panel failed in the performance of its duty under Article 11 of the DSU<br>• Panel failed to engage with evidence | [133], [149]-[150] | [7.879]-[7.881]<br>Annex B-1 [556]-[561] |

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| Misinterpretation and misapplication of Art 5.6<br>• Consequential reversal | [165]-[166] | [7.1300], [7.1308]-[7.1309], [7.1311], [7.1328], [7.1330]-[7.1331] |
| Misinterpretation and misapplication of Art 5.6<br>• Misapplication of rules governing burden of proof | [170]-[173] | [7.1300]-[7.1331] |
| Misinterpretation and misapplication of Art 5.6<br>• First misinterpretation: ALOP | [176] | [7.1311] |
| Misinterpretation and misapplication of Art 5.6<br>• Second misinterpretation: relationship to Arts 5.1 and 5.2 | [177]-[184] | [7.1300]-[7.1336] |