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AUSTRALIA – MEASURES AFFECTING THE IMPORTATION OF APPLES FROM NEW ZEALAND

AB-2010-2

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CASES CITED IN THIS REPORT

Short title	**Full case title and citation**
Australia – Apples	Panel Report, *Australia – Measures Affecting the Importation of Apples from New Zealand*, WT/DS367/R, circulated to WTO Members 9 August 2010
Australia – Salmon	Appellate Body Report, *Australia – Measures Affecting Importation of Salmon*, WT/DS18/AB/R, adopted 6 November 1998, DSR 1998:VIII, 3327
Australia – Salmon	Panel Report, *Australia – Measures Affecting Importation of Salmon*, WT/DS18/R and Corr.1, adopted 6 November 1998, as modified by Appellate Body Report WT/DS18/AB/R, DSR 1998:VIII, 3407
Australia – Salmon (Article 21.5 – Canada)	Panel Report, *Australia – Measures Affecting Importation of Salmon – Recourse to Article 21.5 of the DSU by Canada*, WT/DS18/RW, adopted 20 March 2000, DSR 2000:IV, 2031
Brazil – Retreaded Tyres	Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, adopted 17 December 2007, DSR 2007:IV, 1527
Canada – Autos	Appellate Body Report, *Canada – Certain Measures Affecting the Automotive Industry*, WT/DS139/AB/R, WT/DS142/AB/R, adopted 19 June 2000, DSR 2000:VI, 2985
Canada – Continued Suspension	Appellate Body Report, *Canada – Continued Suspension of Obligations in the EC – Hormones Dispute*, WT/DS321/AB/R, adopted 14 November 2008
EC – Approval and Marketing of Biotech Products	Panel Report, *European Communities – Measures Affecting the Approval and Marketing of Biotech Products*, WT/DS291/R, WT/DS292/R, WT/DS293/R, Add.1 to Add.9, and Corr.1, adopted 21 November 2006, DSR 2006:III-VIII, 847
EC – Asbestos	Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001, DSR 2001:VII, 3243
EC – Bananas III	Appellate Body Report, *European Communities – Regime for the Importation, Sale and Distribution of Bananas*, WT/DS27/AB/R, adopted 25 September 1997, DSR 1997:II, 591
EC – Bananas III (Article 21.5 – Ecuador II) / EC – Bananas III (Article 21.5 – US)	Appellate Body Reports, *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Second Recourse to Article 21.5 of the DSU by Ecuador*, WT/DS27/AB/RW2/ECU, adopted 11 December 2008, and Corr.1 */ European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Article 21.5 of the DSU by the United States*, WT/DS27/AB/RW/USA and Corr.1, adopted 22 December 2008
EC – Hormones	Appellate Body Report, *EC Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R, WT/DS48/AB/R, adopted 13 February 1998, DSR 1998:I, 135
EC – Sardines	Appellate Body Report, *European Communities – Trade Description of Sardines*, WT/DS231/AB/R, adopted 23 October 2002, DSR 2002:VIII, 3359
EC – Selected Customs Matters	Appellate Body Report, *European Communities – Selected Customs Matters*, WT/DS315/AB/R, adopted 11 December 2006, DSR 2006:IX, 3791
Guatemala – Cement I	Appellate Body Report, *Guatemala – Anti-Dumping Investigation Regarding Portland Cement from Mexico*, WT/DS60/AB/R, adopted 25 November 1998, DSR 1998:IX, 3767

Short title	Full case title and citation
Japan – Agricultural Products II	Appellate Body Report, *Japan – Measures Affecting Agricultural Products*, WT/DS76/AB/R, adopted 19 March 1999, DSR 1999:I, 277
Japan – Alcoholic Beverages II	Appellate Body Report, *Japan – Taxes on Alcoholic Beverages*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996, DSR 1996:I, 97
Japan – Apples	Appellate Body Report, *Japan – Measures Affecting the Importation of Apples*, WT/DS245/AB/R, adopted 10 December 2003, DSR 2003:IX, 4391
Japan – Apples	Panel Report, *Japan – Measures Affecting the Importation of Apples*, WT/DS245/R, adopted 10 December 2003, as upheld by Appellate Body Report WT/DS245/AB/R, DSR 2003:IX, 4481
Korea – Dairy	Appellate Body Report, *Korea – Definitive Safeguard Measure on Imports of Certain Dairy Products*, WT/DS98/AB/R, adopted 12 January 2000, DSR 2000:I, 3
Korea – Various Measures on Beef	Appellate Body Report, *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef*, WT/DS161/AB/R, WT/DS169/AB/R, adopted 10 January 2001, DSR 2001:I, 5
US – Carbon Steel	Appellate Body Report, *United States – Countervailing Duties on Certain Corrosion-Resistant Carbon Steel Flat Products from Germany*, WT/DS213/AB/R and Corr.1, adopted 19 December 2002, DSR 2002:IX, 3779
US – Continued Suspension	Appellate Body Report, *United States – Continued Suspension of Obligations in the EC – Hormones Dispute*, WT/DS320/AB/R, adopted 14 November 2008, DSR 2008:X, 3507
US – Continued Zeroing	Appellate Body Report, *United States – Continued Existence and Application of Zeroing Methodology*, WT/DS350/AB/R, adopted 19 February 2009
US – Corrosion-Resistant Steel Sunset Review	Appellate Body Report, *United States – Sunset Review of Anti-Dumping Duties on Corrosion-Resistant Carbon Steel Flat Products from Japan*, WT/DS244/AB/R, adopted 9 January 2004, DSR 2004:I, 3
US – Poultry (China)	Panel Report, *United States – Certain Measures Affecting Imports of Poultry from China*, WT/DS392/R, adopted 25 October 2010
US – Steel Safeguards	Appellate Body Report, *United States – Definitive Safeguard Measures on Imports of Certain Steel Products*, WT/DS248/AB/R, WT/DS249/AB/R, WT/DS251/AB/R, WT/DS252/AB/R, WT/DS253/AB/R, WT/DS254/AB/R, WT/DS258/AB/R, WT/DS259/AB/R, adopted 10 December 2003, DSR 2003:VII, 3117
US – Upland Cotton	Appellate Body Report, *United States – Subsidies on Upland Cotton*, WT/DS267/AB/R, adopted 21 March 2005, DSR 2005:I, 3
US – Upland Cotton (Article 21.5 – Brazil)	Appellate Body Report, *United States – Subsidies on Upland Cotton – Recourse to Article 21.5 of the DSU by Brazil*, WT/DS267/AB/RW, adopted 20 June 2008, DSR 2008:III, 809
US – Wheat Gluten	Appellate Body Report, *United States – Definitive Safeguard Measures on Imports of Wheat Gluten from the European Communities*, WT/DS166/AB/R, adopted 19 January 2001, DSR 2001:II, 717
US – Wool Shirts and Blouses	Appellate Body Report, *United States – Measure Affecting Imports of Woven Wool Shirts and Blouses from India*, WT/DS33/AB/R, adopted 23 May 1997, and Corr.1, DSR 1997:I, 323

Short title	Full case title and citation
US – Zeroing (EC) (Article 21.5 – EC)	Appellate Body Report, *United States – Laws, Regulations and Methodology for Calculating Dumping Margins ("Zeroing") – Recourse to Article 21.5 of the DSU by the European Communities*, WT/DS294/AB/RW and Corr.1, adopted 11 June 2009
US – Zeroing (Japan) (Article 21.5 – Japan)	Appellate Body Report, *United States – Measures Relating to Zeroing and Sunset Reviews – Recourse to Article 21.5 of the DSU by Japan*, WT/DS322/AB/RW, adopted 31 August 2009

ABBREVIATIONS USED IN THIS REPORT

Abbreviation	**Description**
ALCM	Apple leafcurling midge
ALOP	Appropriate level of protection
AQIS	Australian Quarantine and Inspection Service
DSB	Dispute Settlement Body
DSU	*Understanding on Rules and Procedures Governing the Settlement of Disputes*
FAO	Food and Agriculture Organization of the United Nations
GATT 1994	*General Agreement on Tariffs and Trade 1994*
Imp	Importation step
IPPC	*International Plant Protection Convention*
IRA	Biosecurity Australia, *Final Import Risk Analysis Report for Apples from New Zealand* (Canberra, November 2006), Parts A, B, and C (Panel Exhibits AUS-1, AUS-2, and AUS-3, respectively)
ISPM	IPPC's International Standards for Phytosanitary Measures
Panel Report	Panel Report, *Australia – Measures Affecting the Importation of Apples from New Zealand*, WT/DS367/R
SPS	Sanitary and phytosanitary
SPS Agreement	*Agreement on the Application of Sanitary and Phytosanitary Measures*
Working Procedures	*Working Procedures for Appellate Review*, WT/AB/WP/5, 4 January 2005. (Note: Although this version of the *Working Procedures for Appellate Review* applied to this appeal, it has been replaced by a subsequent version, WT/AB/WP/6, 16 August 2010)
WTO	World Trade Organization

WORLD TRADE ORGANIZATION
APPELLATE BODY

Australia – Measures Affecting the Importation of Apples from New Zealand

Australia, *Appellant/Appellee*
New Zealand, *Other Appellant/Appellee*

Chile, *Third Participant*
European Union[1], *Third Participant*
Japan, *Third Participant*
Pakistan, *Third Participant*
Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, *Third Participant*
United States, *Third Participant*

AB-2010-2

Present:

Zhang, Presiding Member
Hillman, Member
Oshima, Member

I. Introduction

1. Australia and New Zealand each appeals certain issues of law and legal interpretations developed in the Panel Report, *Australia – Measures Affecting the Importation of Apples from New Zealand* (the "Panel Report").[2] The Panel was established on 21 January 2008 to consider a complaint by New Zealand concerning several Australian measures on the importation of apples from New Zealand.[3]

2. Following a request for access to the Australian market filed by New Zealand in January 1999, the Australian Quarantine and Inspection Service ("AQIS") initiated an import risk analysis[4] to assess the risks associated with the importation of apples from New Zealand, including, notably, the risks associated with the following three quarantine pests: fire blight, European canker, and apple leafcurling midge ("ALCM").[5] In November 2006, Biosecurity Australia issued its

[1]This dispute began before the entry into force of the *Treaty of Lisbon amending the Treaty on European Union* and the *Treaty establishing the European Community* (done at Lisbon, 13 December 2007) on 1 December 2009. On 29 November 2009, the World Trade Organization received a Verbal Note (WT/L/779) from the Council of the European Union and the Commission of the European Communities stating that, by virtue of the *Treaty of Lisbon*, as of 1 December 2009, the European Union replaces and succeeds the European Community. Thus, although the European Communities reserved its right to participate in the panel proceedings as a third party, and the Panel referred to the European Communities in its Report, the European Union filed a third participant's submission in this appeal, and we will refer to the European Union in this Report.

[2]WT/DS367/R, 9 August 2010.

[3]Panel Report, paras. 1.1 and 1.2.

[4]Panel Report, para. 2.31. At the time, Biosecurity Australia was part of AQIS. In 2004, Biosecurity Australia was created as a separate agency, and is part of the Commonwealth Department of Agriculture, Fisheries and Forestry. (*Ibid*., para. 7.157; Biosecurity Australia, *Final Import Risk Analysis Report for Apples from New Zealand* (Canberra, November 2006) (the "IRA"), Part B (Panel Exhibit AUS-2), p. 8)

[5]Panel Report, para. 2.27. In addition to fire blight, European canker, and ALCM, the IRA assessed the risks associated with eight other pests.

Final Import Risk Analysis Report for Apples from New Zealand (the "IRA").[6] This risk assessment was "semi-quantitative" in that, for each pest, it combined a quantitative assessment of the likelihood of entry, establishment and spread with a qualitative assessment of the likely associated potential biological and economic consequences.[7] The combination of these probability assessments then yielded an overall determination of "unrestricted risk", that is, the risk associated with the importation of apples from New Zealand in the absence of any risk management measures.[8] When the "unrestricted risk" associated with a specific pest was determined to exceed Australia's appropriate level of protection ("ALOP")[9], then possible risk management measures that could be adopted to mitigate the risk were evaluated, and recommendations made accordingly.[10] Thus, the IRA recommended a number of risk management measures to the Director of Animal and Plant Quarantine.[11] The Director subsequently determined that the importation of apples from New Zealand can be permitted subject to, *inter alia*, the application of the phytosanitary measures specified in the IRA.[12]

3. The 17 measures listed by New Zealand in its request for the establishment of a panel are among those specified in the IRA.[13] Of the 17 challenged measures, eight relate to fire blight, five to European canker, and one to ALCM. Three additional "general" measures apply to all three of these pests.[14] The IRA provides that New Zealand and Australia must agree standard operating procedures for each quarantine pest of concern before exports of apples may begin, but no such agreement has yet been reached.[15] Further details regarding the measures examined by the Panel and the process leading to their adoption are set out in section IV of this Report.

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[6]Biosecurity Australia, *Final Import Risk Analysis Report for Apples from New Zealand* (Canberra, November 2006), Part A (Panel Exhibit AUS-1), Part B (Panel Exhibit AUS-2), and Part C (Panel Exhibit AUS-3).

[7]Panel Report, paras. 2.36 and 2.61-2.67.

[8]Panel Report, paras. 2.56 and 2.57.

[9]Australia's appropriate level of protection is expressed in qualitative terms as "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero". (See Panel Report, paras. 2.59, 7.963, and 7.1136; and IRA, Part A, p. 3, and Part B, p. 4)

[10]The IRA states that the measures, or combinations of measures, that it sets out are necessary to achieve Australia's appropriate level of protection by reducing risk to an acceptable level. (Panel Report, paras. 2.58, 2.59, and 7.134 (referring to IRA, Part A, pp. 9 and 13, and Part B, pp. 41, 105-115, 151-155, 187-192, and 313-325))

[11]Further details on the methodology used by the IRA to assess the risks associated with the import of apples from New Zealand and to recommend risk management measures are set out *infra*, paras. 132-148 of this Report.

[12]Biosecurity Australia Policy Memorandum 2007/07, *Biosecurity Policy Determination – Importation of Apples from New Zealand*, 27 March 2007 (Panel Exhibit NZ-2) quoted, in relevant part, in Panel Report, para. 7.165.

[13]The 17 measures are set out *infra*, para. 125 of this Report. See also Request for the Establishment of a Panel by New Zealand, WT/DS367/5.

[14]Panel Report, para. 2.92. These general requirements are also relevant to other pests examined in the IRA, which are not at issue in this dispute.

[15]Panel Report, para. 2.33.

4. Before the Panel, New Zealand claimed that the measures at issue, both individually and as a whole, are inconsistent with Articles 2.2, 2.3, 5.1, 5.2, 5.5, 5.6, and 8, and Annex C(1)(a) to the *Agreement on the Application of Sanitary and Phytosanitary Measures* (the "*SPS Agreement*").[16] New Zealand alleged that the Australian measures: (i) are maintained without scientific evidence[17]; (ii) are not based on a proper risk assessment[18]; (iii) subject imported fruit with a degree of risk equivalent to or higher than that of New Zealand apples to measures substantially less restrictive than those imposed on imports of New Zealand apples[19]; and (iv) are more trade restrictive than necessary to achieve Australia's appropriate level of protection.[20] New Zealand also claimed that the IRA ignores available scientific evidence, Australian border inspection processes, relevant apple production processes in New Zealand, relevant diseases or pests in New Zealand, and relevant climatic conditions in both New Zealand and Australia.[21] Furthermore, New Zealand alleged that the delay of almost eight years between New Zealand's request for the admission into Australia of New Zealand apples and the completion of Australia's approval procedures was "undue".[22]

5. On 13 March 2008, Australia requested a preliminary ruling from the Panel regarding the consistency of New Zealand's panel request with Article 6.2 of the *Understanding on Rules and Procedures Governing the Settlement of Disputes* (the "DSU"). On 6 June 2008, the Panel issued a preliminary ruling and determined that the 17 specific measures set out in New Zealand's panel request had been properly identified; that no other measure had been identified by New Zealand; and that New Zealand's panel request contained sufficient information regarding the legal basis of the complaint to present the problem clearly with respect to the 17 identified measures.[23] On 22 August 2008, Australia requested a second preliminary ruling. Australia requested the Panel to find that New Zealand's claim under Article 8 and Annex C(1)(a) to the *SPS Agreement* fell outside the scope of the dispute, because New Zealand had not identified the "process" that had allegedly been "unduly delayed". On 8 September 2008, the Panel informed the parties that it would address New Zealand's claim under Article 8 and Annex C(1)(a) to the *SPS Agreement* in its final report since it had found no good cause to issue a second preliminary ruling.[24] On 19 December 2008, the parties

[16]Panel Report, para. 3.1.
[17]Panel Report, para. 4.13.
[18]Panel Report, para. 4.28.
[19]Panel Report, para. 4.44.
[20]Panel Report, para. 4.46.
[21]Panel Report, para. 4.43.
[22]Panel Report, para. 4.49.
[23]Communication from the Chairman of the Panel, Preliminary Ruling by the Panel, WT/DS367/7.
[24]Panel Report, para. 1.16.

advised the Panel that they had reached agreement on one of the 17 measures. Consequently, the Panel did not rule on New Zealand's claims in respect of this measure.[25]

6. The Panel decided to seek expert advice and requested the *International Plant Protection Convention* (the "IPPC") Secretariat and the Council for International Congresses of Dipterology to provide names of experts in the following fields: fire blight (*Erwinia amylovora*); European canker (*Neonectria galligena*); ALCM (*Dasineura mali*); and pest risk assessment, including semi-quantitative methodologies.[26] On 15 December 2008, the Panel informed the parties that it had appointed seven experts: Dr. Jean-Pierre Paulin and Dr. Tom Deckers for fire blight; Dr. Bernardo Latorre and Dr. Terence Swinburne for European canker; Dr. Jerry Cross for ALCM; and Dr. Gritta Schrader and Dr. Ricardo Sgrillo for pest risk assessment, including the use of semi-quantitative methodologies.[27]

7. The Panel Report was circulated to Members of the World Trade Organization (the "WTO") on 9 August 2010. For the reasons set out in its Report, the Panel found that:

> (a) [t]here is no evidence that the process of selection and consultation of experts was conducted improperly, that due process in the expert consultation phase of these proceedings was compromised, nor that Australia's procedural rights were in any manner negatively affected in this regard[28];
>
> (b) [t]he 16 measures at issue in the current dispute, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) and are covered by the SPS Agreement[29];
>
> (c) Australia's measures at issue regarding fire blight, European canker and ALCM, as well as the requirements identified by New Zealand as "general" measures that are linked to all three pests at issue in the present dispute, are inconsistent with Articles 5.1 and 5.2 of the SPS Agreement and, by implication, these requirements are also inconsistent with Article 2.2 of the SPS Agreement[30];
>
> (d) New Zealand has failed to demonstrate that the measures at issue in the current dispute are inconsistent with Article 5.5 of the SPS Agreement and, consequentially, has also failed to

[25]Panel Report, paras. 1.20 and 2.96. The agreement concerned Measure 12 relating to European canker. (See *infra*, para. 126 of this Report)
[26]Panel Report, paras. 1.21-1.32.
[27]Panel Report, para. 1.33.
[28]Panel Report, para. 8.1(a); see also para. 7.102.
[29]Panel Report, para. 8.1(b); see also para. 7.187.
[30]Panel Report, para. 8.1(c); see also paras. 7.510 (with respect to fire blight), 7.781 (with respect to European canker), 7.887 (with respect to ALCM), 7.905 (with respect to the general measures), and 7.906 (overall conclusion).

> demonstrate that these measures are inconsistent with Article 2.3 of the SPS Agreement[31];
>
> (e) Australia's measures at issue regarding fire blight, European canker, and ALCM, are inconsistent with Article 5.6 of the SPS Agreement; New Zealand has failed to demonstrate, however, that the requirements identified by New Zealand as "general" measures that are linked to all three pests at issue in the present dispute, are inconsistent with Article 5.6 of the SPS Agreement[32]; and
>
> (f) New Zealand's claim under Annex C(1)(a) ... and its consequential claim under Article 8 of the SPS Agreement are outside of the Panel's terms of reference in this dispute.[33]

Accordingly, the Panel recommended that the Dispute Settlement Body (the "DSB") request Australia to bring those measures found to be inconsistent into conformity with its obligations under the *SPS Agreement*.

8. On 31 August 2010, Australia notified the DSB of its intention to appeal certain issues of law covered in the Panel Report and certain legal interpretations developed by the Panel, pursuant to Articles 16.4 and 17 of the DSU, and filed a Notice of Appeal[34] pursuant to Rule 20 of the *Working Procedures for Appellate Review* (the "*Working Procedures*").[35] On 7 September 2010, Australia filed an appellant's submission.[36] On 13 September 2010, New Zealand notified the DSB of its intention to appeal certain issues of law covered in the Panel Report and certain legal interpretations developed by the Panel, pursuant to Articles 16.4 and 17 of the DSU, and filed a Notice of Other Appeal[37] pursuant to Rule 23(1) and (2) of the *Working Procedures*. On 15 September 2010, New Zealand filed an other

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[31]Panel Report, para. 8.1(d); see also paras. 7.1089, 7.1090, and 7.1095.

[32]Panel Report, para. 8.1(e); see also para. 7.1403. With respect to New Zealand's claim relating to the first requirement in Article 2.2 of the *SPS Agreement*, that measures be applied only to the extent necessary to protect human, animal or plant life or health, the Panel recalled that it had already found the measures at issue to be inconsistent with the requirement in Article 2.2 that Members' sanitary and phytosanitary measures be based on scientific principles and not be maintained without sufficient scientific evidence. (*Ibid*., para. 7.1409) The Panel considered that a positive solution to the dispute did not require it to assess whether the same measures violate another requirement in Article 2.2. Thus, the Panel deemed it unnecessary to rule on this "Article-5.6-related Article 2.2 claim by New Zealand" or "to engage in a detailed analysis of the relationship between the third condition of the Article 5.6 test and the first requirement of Article 2.2" of the *SPS Agreement*. (*Ibid*., para. 7.1410)

[33]Panel Report, para. 8.1(f); see also para. 7.1477.

[34]WT/DS367/13 (attached as Annex I(a) to this Report). By letter dated 16 September 2010, Australia requested authorization from the Appellate Body Division hearing this appeal to correct a clerical error in its Notice of Appeal, pursuant to Rule 18(5) of the *Working Procedures*. On 17 September 2010, pursuant to Rule 18(5), the Division invited New Zealand and the third participants to comment on Australia's request. No objections to Australia's request were received. On 23 September 2010, the Division authorized Australia to correct the clerical error in its Notice of Appeal. (WT/DS367/13/Corr.1 (attached as Annex I(b) to this Report))

[35]WT/AB/WP/5, 4 January 2005. (Note: Although this version of the *Working Procedures* applied to this appeal, it has been replaced by a subsequent version, WT/AB/WP/6, 16 August 2010)

[36]Pursuant to Rule 21 of the *Working Procedures*.

[37]WT/DS367/14 (attached as Annex II to this Report).

appellant's submission.[38] On 27 September 2010, Australia and New Zealand each filed an appellee's submission.[39] On the same day, the European Union, Japan, and the United States each filed a third participant's submission[40] and the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu notified its intention to appear at the oral hearing as a third participant.[41] On 28 September 2010, Chile and Pakistan each notified its intention to appear at the oral hearing as a third participant.[42]

9. On 1 September 2010, the Division hearing this appeal received a joint letter from Australia and New Zealand requesting the Appellate Body to authorize public observation of the oral hearing. On 2 September 2010, the Division invited the third participants to comment in writing on the joint request of Australia and New Zealand and on the logistical arrangements proposed in the request. Comments were received on 6 September 2010 from the European Union, and on 7 September 2010 from the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, and the United States. These third participants expressed support for the request by the participants. In a Procedural Ruling dated 14 September 2010, the Division authorized public observation of the oral hearing by means of simultaneous closed-circuit television broadcast, shown in a separate room.[43]

10. The oral hearing in this appeal was held on 11 and 12 October 2010. The participants and four of the third participants (Chile, the European Union, Japan, and the United States) made oral statements. The participants and third participants responded to questions posed by the Members of the Division hearing the appeal.

II. Arguments of the Participants and the Third Participants

A. *Claims of Error by Australia – Appellant*

11. First, Australia appeals the Panel's finding that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) to the *SPS Agreement*. Second, Australia appeals the Panel's finding that the measures at issue regarding fire blight and ALCM, as well as the requirements identified by New Zealand as "general" measures that are linked to all three pests at issue in the present dispute, are inconsistent with Articles 5.1 and 5.2 of the *SPS Agreement* and, by implication, with Article 2.2 of the *SPS Agreement*. Third, Australia claims

[38]Pursuant to Rule 23(3) of the *Working Procedures*.
[39]Pursuant to Rules 22 and 23(4) of the *Working Procedures*.
[40]Pursuant to Rule 24(1) of the *Working Procedures*. On 29 September 2010, the Director of the Appellate Body Secretariat received the executive summary of the United States' third participant's submission. By letter dated 30 September 2010, the Division informed the United States that the executive summary would not be accepted because it had been submitted after 27 September 2010, the deadline for filing a third participant's submission. The original and copies of the executive summary were returned to the United States.
[41]Pursuant to Rule 24(2) of the *Working Procedures*.
[42]Pursuant to Rule 24(4) of the *Working Procedures*.
[43]The Procedural Ruling is attached as Annex III to this Report.

that the Panel failed to engage with all of the important evidence before it, failed to understand the methodology employed in the IRA, and, thus, failed to make an objective assessment of the facts before it, as required by Article 11 of the DSU. Finally, Australia appeals the Panel's finding that Australia's measures at issue are more trade restrictive than required and are therefore inconsistent with Article 5.6 of the *SPS Agreement*.

1. Annex A(1) to the *SPS Agreement*: "SPS Measure"

12. Australia requests the Appellate Body to find that the Panel applied an incorrect legal interpretation of the definition of sanitary and phytosanitary ("SPS") measure in Annex A(1) to the *SPS Agreement* and, accordingly, to reverse the Panel's finding at paragraphs 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. Australia accepts that all of the measures at issue constitute SPS measures when taken as a whole or "grouped appropriately".[44] However, Australia contends that the Panel erred in finding that the 16 measures at issue constitute SPS measures not only as a whole, but also individually, and that the Panel failed to assess whether the 16 measures individually meet the requirements of Annex A(1) to the *SPS Agreement*.

13. Australia contends that, in order for a measure to fall discretely within the definition of an SPS measure in the first sentence of Annex A(1), it must have three essential characteristics. First, it must imply the taking of some discrete and recognizable action or course of action as a means to an end. Second, the measure must be applied, that is, deployed or put into practical operation. Third, the measure must be so applied for a specific purpose, namely, to protect against a specified category of risk. The last sentence of the definition in Annex A(1) serves to ensure that the things to which it refers are not excluded *a priori* from being deemed to be SPS measures. Australia stresses, however, that the last sentence does not mean that any requirement, procedure, or process described in the list is necessarily to be classified as an SPS measure, and does not undermine the essential characteristics of an SPS measure required by the first sentence of the definition. It follows that, for a panel to characterize a measure as an SPS measure, the panel must identify, practically and purposively, some action or course of action (including an identifiable omission) that a Member puts into practical operation for the purpose of protecting against some relevant risk. Activities or requirements, such as administrative processes or procedures, that have no operation other than to enhance the efficacy of some active mechanism for protecting animal or plant life or health from relevant risk, should not be identified as separate SPS measures. Such ancillary processes or procedures should be identified together with the mechanisms to which they relate collectively as amounting to a single, composite

[44]Australia's appellant's submission, para. 60.

SPS measure. Otherwise, cautions Australia, potentially every detail of an administrative regime would be opened up for separate evaluation of compliance with the *SPS Agreement*.

14. Australia maintains that its conception of an SPS measure is supported by the 2008 *Glossary of Phytosanitary Terms*, the IPPC's International Standards for Phytosanitary Measures ("ISPM"s) ISPM No. 5[45], which draws a distinction between a phytosanitary *measure* and a phytosanitary *procedure*. A phytosanitary measure is "[a]ny 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 is "[a]ny official method for implementing phytosanitary measures including the performance of inspections, tests, surveillance or treatments in connection with regulated pests".[46] Australia asserts that these definitions make clear that a phytosanitary procedure, aimed simply at implementing a phytosanitary measure, is not itself a distinct phytosanitary measure.

15. With regard to the present dispute, Australia alleges that the Panel failed to ask whether each "measure" identified by New Zealand individually met the essential characteristics of the definition of an SPS measure in Annex A(1)(a). The Panel's finding that all 16 measures have a purpose that corresponds to Annex A(1)(a) is not sufficient for each of them individually to amount to an SPS measure. Indeed, certain requirements identified by New Zealand were dependent on a principal measure and would be meaningless and ineffective to achieve any protection from risk if considered individually. Australia illustrates this point by referring to what New Zealand identified as Measure 3. This measure requires that an orchard inspection methodology be developed and approved that addresses issues such as: visibility of symptoms in the tops of trees; the inspection time required; the number of trees to be inspected to meet the efficacy level; and training and certification of inspectors.[47] Australia argues that, taken alone, this requirement would be meaningless and ineffective for achieving any protection from risk, and that it would only have meaning insofar as it is ancillary to the principal measure requiring that apples be sourced from areas free from fire blight disease symptoms. Australia explains that what New Zealand identified as Measures 1, 2, 3, 4, 5, 8, 15, 16, and 17 are properly seen as a single, composite SPS measure, rather

[45]*Glossary of Phytosanitary Terms*, 2008 (ISPM No. 5, FAO, Rome (Panel Exhibit AUS-164)). Regarding ISPMs, see further explanation, *infra*, footnote 195 of this Report.
[46]Australia's appellant's submission, para. 59 (quoting ISPM No. 5, *supra*, footnote 45 of this Report).
[47]See *infra*, para. 125 of this Report.

than as separate SPS measures.[48] Overall, adds Australia, the Panel should have found that Australia had not 16 SPS measures, but four: two for fire blight, one for European canker, and one for ALCM. For fire blight, the two measures are inspection of source orchards and disinfection of fruit; and, for ALCM, the measure is: the option of inspection of 3000 fruit for export and, if necessary, treatment or rejection of fruit for export.

2. Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*

16. Australia requests the Appellate Body to reverse the Panel's findings that its measures for fire blight and ALCM, as well as the general measures, are inconsistent with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*. Australia argues that, in so finding, the Panel erred because it applied an incorrect legal interpretation of "risk assessment" and misapplied the criteria identified in paragraphs 590-592 of the Appellate Body reports in *US/Canada – Continued Suspension*[49] for a panel's analysis of whether a risk assessment complies with Articles 5.1 and 5.2.

17. In Australia's view, the Appellate Body, in *US/Canada – Continued Suspension*, confirmed the limited role of a panel reviewing an SPS measure for conformity with Articles 5.1 and 5.2. The panel is not to itself conduct a risk assessment but to review the risk assessment relied upon by the Member in order to determine whether the risk assessment is "objectively justifiable", rather than whether it is "correct".[50] Referring, in particular, to paragraph 591 of those Reports, Australia explains that the Appellate Body considered that this requires a panel to: (i) identify the scientific basis upon which the SPS measure was adopted; (ii) verify that the scientific basis comes from a respected and qualified source; (iii) assess whether the reasoning articulated on the basis of the scientific evidence is objective and coherent; and (iv) determine whether the results of the risk assessment sufficiently warrant the SPS measure at issue.

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[48]Australia's appellant's submission, para. 66, and additional clarifications provided at the oral hearing in this appeal. These Measures are set out *infra*, para. 125 of this Report. In essence, they require: that apples be sourced from areas free from fire blight disease symptoms; that orchards/blocks be inspected for fire blight disease symptoms; that an appropriate orchard/block inspection methodology be developed and approved; that an orchard/block be suspended for the season on the basis of evidence of an attempt to remove or hide symptoms of fire blight; that an orchard/block be suspended for the season upon detection of any visual symptoms of fire blight; that packing houses registered for export of apples process only fruit sourced from registered orchards; that Australian Quarantine and Inspection Service officers be involved in orchard inspections, verification of packing house procedures, and in fruit inspection and treatment; that New Zealand ensure that all orchards registered for export to Australia operate under standard commercial practices; and that packing houses provide details of the layout of premises.

[49]In this Report, we use the term "*US/Canada – Continued Suspension*" to refer to both Appellate Body Reports, *US – Continued Suspension* (WT/DS320/AB/R) and *Canada – Continued Suspension* (WT/DS321/AB/R).

[50]Australia's appellant's submission, para. 68 (referring to Appellate Body Reports, *US/Canada – Continued Suspension*, para. 590).

18. Regarding the Panel's findings that intermediate conclusions in the IRA were not supported by "adequate" or "sufficient" scientific evidence, Australia argues that the Panel 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*".[51] According to Australia, if a risk assessment within the meaning of Article 5.1 gives rise to significant instances of uncertainty or inconclusiveness, a risk assessor should still be able to exercise expert judgement to deal with such uncertainty, taking into account risk assessment techniques developed by the relevant international organizations, such as those found in ISPM No. 2 and ISPM No. 11.

19. Australia claims that, while the available scientific evidence may be sufficient to conduct a risk assessment, thus foreclosing recourse to Article 5.7 of the *SPS Agreement*, such evidence may still be inconclusive or uncertain, and in such cases a risk assessor may resort to expert judgement in reaching its conclusions. The fact that a circumstance may present particular methodological difficulties does not excuse the risk assessor from evaluating the risk. Australia claims that, where there is little available scientific evidence, the phrase "as appropriate to the circumstances" in Article 5.1 provides a measure of flexibility in terms of how the risk assessment is conducted.

20. According to Australia, the flexibility to adapt risk assessment methodologies as a function of the available scientific evidence is reinforced by the reference in Article 5.1 to the risk assessment techniques developed by international organizations. In this respect, Australia notes that the relevant risk assessment standards of the IPPC, including ISPM No. 2 and ISPM No. 11, recognize the need for expert judgement in risk assessments in circumstances of scientific uncertainty arising from incomplete, inconsistent, or conflicting data.

21. Regarding the Panel's findings that intermediate conclusions in the IRA were not "objective and coherent", Australia argues that the Panel 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*".[52] According to Australia, it was enough for Biosecurity Australia to explain its overall methodology, identify the available scientific evidence and the areas and degree of scientific uncertainty, record any expert judgement made, and ensure that any expert judgement fell "within a range that could be considered legitimate by the standards of the scientific community".[53]

[51]Australia's appellant's submission, para. 92.
[52]Australia's appellant's submission, para. 93.
[53]Australia's appellant's submission, para. 93.

22. In Australia's view, the criterion identified in *US/Canada – Continued Suspension* that "the reasoning articulated on the basis of the scientific evidence is objective and coherent" is not directed at assessing the quality of the reasoning as an end in itself, but rather at determining whether the "particular conclusions" drawn by the Member assessing the risk are sufficiently supported by the scientific evidence relied upon. The application of this criterion thus "focuses on the relationship between the scientific evidence and the conclusions ultimately reached by the Member as the basis for an SPS measure".[54] Australia argues that the question of whether a particular conclusion ultimately reached by a Member as the basis for the SPS measure is sufficiently supported by "available scientific evidence" is properly answered by asking whether the particular conclusion is rationally or objectively related to that scientific evidence, not by asking whether the conclusion is correct or whether it is the same conclusion that the Panel, or an expert, would have reached.

23. According to Australia, Biosecurity Australia was not required to explain in greater detail precisely how it drew each intermediate conclusion. Australia claims that the Panel erred in asking whether itself or its appointed experts would have made the same judgement as Biosecurity Australia, rather than whether the expert judgements made by Biosecurity Australia at intermediate steps in the IRA fell "within a range that could be considered legitimate by the standards of the scientific community".[55]

24. Australia also argues that the Panel erred in requiring that Biosecurity Australia explain precisely how it arrived at the expert judgements it made at intermediate steps in the IRA. Australia claims that no such obligation exists in Article 5.1 of the *SPS Agreement*. The standards of "documentation" and "transparency" set forth in ISPM No. 2 and ISPM No. 11 only require 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. However, ISPM No. 2 and ISPM No. 11 do not suggest any need for an explanation of how a particular expert judgement was reached. The IRA was transparent in its use of expert judgement and noted that, at each intermediate step where the inconclusive or incomplete nature of scientific data gave rise to scientific uncertainty, the IRA identified and recorded the expert judgement required in the light of that scientific uncertainty. Australia also points out that the IRA included an explicit statement documenting the process of making expert judgements and the constraints observed.

25. Australia further claims that the Panel erred because it failed to assess the materiality of the faults it found in the intermediate conclusions reached in the IRA. Australia, relying on the panel report in *Australia – Salmon (Article 21.5 – Canada)*, argues that the Panel should have asked, but

[54]Australia's appellant's submission, para. 76. (original underlining)
[55]Australia's appellant's submission, para. 95.

erroneously failed to ask, whether any alleged flaws in the IRA's reasoning were "so serious" as to undermine "reasonable confidence" in the risk assessment as a whole.[56]

26. Australia then illustrates how these errors of interpretation and application under Article 5.1 of the *SPS Agreement* affected the Panel's analysis of the IRA's assessment of the risk of fire blight and ALCM.

(a) Measures regarding Fire Blight

27. Regarding importation step 1[57] (the probability that *Erwinia amylovora* is present in source orchards in New Zealand), Australia argues that the Panel adopted Dr. Paulin's view that the estimate had not been shown to be "true"[58] rather than determining, based on his expert testimony, whether the estimate was within a legitimate range. Australia also argues that the Panel failed to assess the significance of any overestimation under importation step 1, either to the overall probability of importation or to the overall assessment of risk.

28. Regarding importation step 2 (the probability that fruit picked from an orchard in which *Erwinia amylovora* is present will itself be either infested or infected), Australia claims that, in relying on Dr. Paulin's testimony that no general and reasonable conclusion could be based on the disparate results of the various scientific studies reviewed by the IRA, the Panel failed to adhere to the Appellate Body's guidance that scientific uncertainty or inconclusiveness does not excuse the risk assessor from evaluating the risk, and failed to properly assess whether the judgement made was within a range that could be considered legitimate according to the standards of the scientific community. Australia further contends that the Panel failed to assess the significance of any overestimation under importation step 2, either to the overall probability of importation or to the overall assessment of risk.

29. Regarding importation step 3 (the probability that clean fruit is contaminated with *Erwinia amylovora* during picking and transportation to a packing house), Australia argues that, in finding that

[56]Australia's appellant's submission, paras. 84 and 90 (quoting Panel Report, *Australia – Salmon (Article 21.5 – Canada)*, para. 7.57).

[57]Australia explains, at paragraphs 33-35 of its appellant's submission, that the IRA, first, identified a series of discrete steps 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 at which an apple could potentially become or remain infested or infected with the pest were identified and the conditional likelihood of infestation or infection occurring or remaining at each point was estimated. The eight points were labelled as numbered "importation steps". The importation steps do not describe a single, linear process of infection or infestation. Rather, there are ten distinct pathways through the importation steps by which an apple that is infested or infected may be imported (importation scenarios). The probability of an infected or infested apple being imported into Australia was calculated as the sum of the probabilities for each of these ten alternative importation scenarios.

[58]Australia's appellant's submission, para. 101 (quoting Panel Report, para. 7.258).

the studies relied upon by the IRA cannot constitute an adequate scientific basis for a coherent and objective analysis, the Panel overlooked the practical necessity for a risk assessor to make a judgement even when confronted by limited scientific evidence. Moreover, Australia contends that the Panel erred in relying on the experts' views that the probability of contamination estimated by the IRA seemed "rather high"[59], instead of asking whether the estimate was within a range that could be considered legitimate according to the standards of the scientific community, and that it failed to assess the significance of any overestimation under importation step 3, either to the overall probability of importation or to the overall assessment of risk.

30. Regarding importation step 5 (the probability that clean fruit is contaminated with *Erwinia amylovora* during processing in the packing house), Australia argues that the Panel erred in finding that the estimate for this step was not objective and coherent, because there was no indication in the IRA of how the results of certain scientific studies referenced in the IRA were taken into account. The Panel should instead have verified whether the estimate was within a range that could be considered legitimate according to the standards of the scientific community. According to Australia, the Panel also erred in failing to assess the significance of any overestimation under importation step 5 either to the overall probability of importation or to the overall assessment of risk.

31. Regarding importation step 7 (the probability that clean fruit will become contaminated with *Erwinia amylovora* during palletization, quality inspection, containerization, and transportation), Australia contends that the Panel failed to verify whether the estimate for this step was within a range that could be considered legitimate according to the standards of the scientific community, irrespective of any perceived flaw in the relationship between the numerical range and the qualitative descriptor. Moreover, Australia argues that the Panel erred by not assessing the significance of any overestimation under importation step 7, either to the overall probability of importation or to the overall assessment of risk, and observes that the contribution made by importation step 7 to the overall probability of importation of infested or infected fruit was "several orders of magnitude less than could be considered material".[60]

32. Regarding "exposure" (the transfer of *Erwinia amylovora* from infested or infected apple waste to a susceptible host plant), Australia argues that, in finding that the IRA's conclusions were not supported by scientific evidence, the Panel overlooked that, while direct scientific evidence on specific mechanisms of transfer may be lacking, it is established, including through the testimony of the Panel's appointed experts, that transfer can occur. Confronted with such evidence and uncertainties, the IRA team was not excused from making an assessment of risk. In Australia's view,

[59]Australia's appellant's submission, para. 105 (quoting Panel Report, para. 7.288).
[60]Australia's appellant's submission, para. 108.

in finding that the probability of transfer should be commensurate to the extremely low likelihood of transmission through one transfer scenario, the Panel failed to give any consideration to the range of estimates that would be considered legitimate according to the standards of the scientific community, and displaced the judgement made by the IRA in favour of its own implicit assessment of the probability of transfer as "extremely low".

33. Regarding the use of uniform distribution[61], Australia argues that, in reaching its conclusion, the Panel relied on 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. The Panel should have verified whether the decision by the IRA to use a uniform distribution was within a legitimate range of available judgements, not whether this decision was the correct or the preferable one. Australia adds that the Panel's error in this regard directly affects, and similarly taints, the Panel's somewhat unclear finding with respect to the IRA's conclusions on the probability of spread.

34. Regarding the likelihood of establishment of fire blight in Australia, Australia argues that the Panel's criticism that the IRA failed to note the difference between experiments taking place under ideal conditions in the laboratory and under natural circumstances highlights the Panel's failure to ask the correct question, that is, whether 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, irrespective of any differences between laboratory and natural conditions.

35. Regarding the potential biological and economic consequences associated with the entry, establishment and spread of fire blight, Australia claims that, in finding that the IRA's assessment did not rely on adequate scientific evidence, the Panel relied almost exclusively upon the testimony of one expert, Dr. Paulin, and unduly relied on the scientific aspects of the evidence, thereby failing to appreciate that Article 5.3 of the *SPS Agreement* requires a risk assessment to assess "potential" consequences and take into account "relevant economic factors". Australia argues that, had the Panel properly appreciated the meaning of a "risk assessment" in this regard, it would not have overlooked the evidence of the economic impact of the outbreaks of fire blight at Hawkes Bay, New Zealand, in 1998, and in Michigan, United States, in 2000, which were reviewed in the IRA.

[61] Australia explains, at paragraph 42 of its appellant's submission, that in its quantitative assessment of the likelihood of entry, establishment and spread, the IRA evaluated each step in the schemata for importation and distribution, utilization, waste generation, and disposal using a probability distribution. 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". Australia explains that uniform distributions (where any value contained in the range between the minimum and maximum values occurs with equal probability) were used in cases where insufficient information was available to determine the most likely value.

(b) Measures regarding ALCM

36. Australia claims that the Panel erred in finding that certain matters had not properly been taken into account in the IRA, or that the IRA was based upon incorrect assumptions, without asking "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".[62] Australia adds that the Panel failed to assess the materiality of the errors it found, and failed to verify whether those errors took the judgements made in the IRA outside a legitimate range.

37. Australia recalls that, with respect to the probability of importation of ALCM, the IRA made two separate estimates for ALCM. The first, based on the IRA's methodology, yielded an estimated probability of 4.1 per cent. The second, based on August 2005 trade data supplied by New Zealand, yielded an estimate of between 0.1 and 0.38 per cent. The Panel found that the IRA's reasoning regarding the viability of ALCM was not objectively justifiable because it did not take into account the proportions of cocoons with viable ALCM, in the light of the possible incidence of the parasitic wasp *Platygaster demades*. At no point did the Panel find that the estimate of probability of importation was not within a legitimate range. Moreover, in the Article 5.6 section of its Report, the Panel described the infestation rate of 0.1-0.38 per cent as "more realistic" than the infestation rate of 4.1 per cent.[63] Australia points out that the measures relating to ALCM *were* adopted on the basis of the 0.1-0.38 per cent infestation rate and argues, accordingly, that the Panel has found "abstract fault" in the IRA's "perceived failure" to take into account viability even though the Panel itself concluded that the infestation rate actually relied upon was "more realistic".[64]

38. With respect to establishment and spread of ALCM, Australia notes that the Panel assessed four alleged flaws and found against the IRA with respect to three of them. The Panel failed, however, to ask the "correct" question, namely, whether any of these flaws meant that the estimate reached by the IRA was outside a legitimate range.

39. Regarding the potential biological and economic consequences associated with the entry, establishment and spread of ALCM, Australia claims that the Panel erred in relying on Dr. Cross' testimony that different impact scores for particular factors "would be more appropriate" or "more objective and credible", while ignoring Dr. Cross' statement that he would not change the IRA's overall rating of the consequences of ALCM ("low") and that Australia's analysis was objective and

[62]Australia's appellant's submission, para. 118.
[63]Australia's appellant's submission, para. 120 (quoting Panel Report, para. 7.1360).
[64]Australia's appellant's submission, para. 120.

credible.[65] Australia contends that the Panel failed to enquire whether the overall judgement of the IRA on the potential biological and economic consequences of ALCM was within a legitimate range, having regard to the requirement to assess "potential" consequences and taking into account relevant economic factors.[66]

3. Article 11 of the DSU

40. Australia requests the Appellate Body to find that the Panel failed to observe its duty under Article 11 of the DSU to make an objective assessment of the matter before it, and to reverse the Panel's findings that Australia's measures for fire blight and ALCM, as well as the general measures, are inconsistent with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*. Australia claims that the Panel failed to make an objective assessment of the facts before it, as required by Article 11 of the DSU, because it failed to engage with all of the important evidence before it and failed to understand the methodology employed in the IRA.

(a) Treatment of Expert Testimony

41. Australia argues that the Panel disregarded critical aspects of the appointed experts' testimony that were favourable to Australia. A panel must engage with all of the important evidence before it that is relevant to the matter at issue and will err if it fails to give significant evidence proper, genuine, and realistic consideration and assess its significance. In this respect, Australia relies on the Appellate Body reports in *US/Canada – Continued Suspension* and argues that if, in those proceedings, the panel erred by merely reproducing testimony and not assessing its significance, the Panel in the present dispute committed an even more serious error, because in several instances it overlooked entirely testimony that was favourable to Australia's case.[67] While a panel has a margin of discretion as the trier of facts, such discretion does not undermine the panel's overriding obligation to make an objective assessment of the facts. Merely reproducing testimony without discussing it, or disregarding it entirely, constitutes a failure to make an objective assessment of the facts.[68] Australia stresses, in this regard, the importance of the overlooked testimony to its case.

42. In respect of the overall probability of importation of infested or infected apples, Australia argues that the Panel incorrectly characterized Dr. Deckers as having stated that the overall likelihood of importation "is probably" overestimated, when Dr. Deckers had in fact stated that such probability

[65]Australia's appellant's submission, para. 123 (referring to Panel Report, para. 7.881).
[66]Australia's appellant's submission, para. 123.
[67]Australia's appellant's submission, para. 133.
[68]Australia's appellant's submission, para. 130.

"could be" overestimated.[69] The Panel further failed to consider that Dr. Deckers had also stated that he did not think that the estimation in the importation steps was exaggerated. Dr. Deckers' statement that the IRA's assessment of the probability of importation was not exaggerated should be read to qualify significantly Dr. Deckers' earlier statement that the probability of importation "could be" overestimated. By failing to reproduce and assess Dr. Deckers' position comprehensively, the Panel failed to make an objective assessment of the matter, as required under Article 11 of the DSU. Australia adds that this error was made worse by the fact that the Panel referred to Dr. Deckers' testimony that was favourable to Australia in a footnote "in peremptory and dismissive terms: 'But see, Dr. Deckers' reply in Transcript of the Panel's meeting with experts, para. 259.'"[70]

43. In respect of the Panel's analysis of "exposure", Australia argues that the Panel failed to make an objective assessment of the facts, because it relied on Dr. Deckers' initial testimony that the chance of epiphytic bacteria being transmitted to the susceptible organs of a host plant at the appropriate moment to realize an infection was "rather small", without reproducing or assessing the significance of Dr. Deckers' clarifying testimony that he thought the IRA's estimation of the probability of exposure of 0 to 10^{-6} (zero to one in one million) was "true".[71]

44. Regarding the Panel's review of the IRA's analysis of the potential biological and economic consequences of fire blight, Australia claims that the Panel acted inconsistently with Article 11 of the DSU, because it relied exclusively on certain testimony by Dr. Paulin to the effect that certain individual impact scores in the assessment of consequences "could be exaggerated", but failed to reproduce or assess the significance of testimony favourable to Australia given by Dr. Deckers and Dr. Paulin, both of whom rated the overall potential biological and economic consequences of fire blight as "high". Australia points out that the only reference in the Panel Report to Dr. Deckers' testimony favourable to Australia on this point was a bare reference in a footnote preceded by the words "[b]ut see".[72] Australia also claims that the Panel acted inconsistently with Article 11 of the DSU, because it proceeded on the erroneous basis that an assessment of consequences must be based only on scientific evidence and failed, thereby, to engage with or refer to the evidence of actual production losses caused by outbreaks of fire blight at Hawkes Bay, New Zealand, in 1998, and in Michigan, United States, in 2000.

[69]Australia's appellant's submission, para. 137 (quoting Panel Report, para. 7.356; and Dr. Deckers' response to Panel Question 34, Panel Report, Annex B-1, para. 237).
[70]Australia's appellant's submission, para. 137 (quoting Panel Report, footnote 1595 to para. 7.356).
[71]Australia's appellant's submission, paras. 139 and 140 (quoting Dr. Deckers' response to Panel Question 42, Panel Report, Annex B-1, para. 271).
[72]Australia's appellant's submission, para. 142 (quoting Panel Report, footnote 1796 to para. 7.465).

45. Australia contends that the Panel reproduced, but dismissed without explanation, the testimony given by Dr. Deckers that "[t]he limitation of apple exports to mature symptomless apples is not enough to achieve Australia's ALOP".[73] According to Australia, the Panel failed to assess the significance of this testimony not only in relation to New Zealand's claims under Article 5.6 of the *SPS Agreement*, but also in relation to Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*, because this testimony also shows that Australia's SPS measures were sufficiently warranted by the IRA.

46. Regarding the use of uniform distribution, Australia argues that the Panel's finding that such use is unjustified is based on Dr. Sgrillo's testimony that the IRA team should have used a triangular distribution, and on only part of Dr. Schrader's testimony, opining that uniform distribution is the least realistic of the three types of distribution. Australia contends, however, that the Panel acted inconsistently with Article 11 of the DSU by failing to reproduce or assess the significance of Dr. Schrader's additional statement, favourable to Australia, that uniform distribution is useful in situations presenting "a high degree of uncertainty" and where there is insufficient information to determine the most likely value.[74]

47. Regarding the IRA's assessment of potential biological and economic consequences of entry, establishment and spread of ALCM, Australia argues that the Panel committed an error under Article 11 of the DSU by failing to reproduce or assess the significance of testimony given by Dr. Cross that was favourable to Australia. The Panel reproduced Dr. Cross' testimony opining that certain individual impact scores assigned by the IRA were too severe and that a more credible score could be assigned, but the Panel failed to reproduce or assess the significance of Dr. Cross' testimony, favourable to Australia, that even assuming that the most severe scores (for plant health and control treatment) were reassigned based on his appreciation of the facts, this would not result in a change of the rating of the overall consequences as "low" and that, in this respect, "the conclusion of Australia's analysis was objective and credible".[75]

(b) The Panel's Alleged Misunderstanding of the IRA

48. Australia further argues that the Panel acted inconsistently with Article 11 of the DSU because it failed to understand the risk assessment methodology employed in the IRA and, in particular, the choice of a probability interval of 0 to 10^{-6} (zero to one in one million) with a midpoint (if uniform distribution is used) of 5×10^{-7} (0.5 in one million) for events with a "negligible"

[73]Dr. Deckers' response to Panel Question 15, Panel Report, Annex B-1, para. 117.
[74]Australia's appellant's submission, paras. 147 and 148 (quoting Dr. Schrader's response to Panel Question 135, Panel Report, Annex B-1, paras. 781-783).
[75]Australia's appellant's submission, paras. 149 and 150 (quoting Dr. Cross' response to Panel Question 96, Panel Report, Annex B-1, para. 561).

likelihood of occurring. Australia contends that, if the Panel misunderstood in a material respect what the risk assessor had done, it necessarily failed to perform its duties under Article 11 of the DSU.

49. Australia recalls that, in the IRA's semi-quantitative risk assessment methodology, a quantitative assessment of entry, establishment and spread was combined with a qualitative assessment of potential consequences. In exercising expert judgement to arrive at an estimated probability distribution, the IRA team was not constrained by the intervals suggested by the nomenclature. Indeed, that nomenclature, which defined correspondence between a so-called "negligible" event and a probability interval of 0 to 10^{-6} was, in and of itself, inevitably arbitrary. The relevant issue was that the probability distribution assigned to particular events was not arbitrary. The qualitative label "negligible" was assigned to the quantitative range, rather than the range being assigned to the label. Australia contends that at the steps where the interval 0 to 10^{-6} was used (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.

50. Australia also argues that the Panel, in finding that the methodological flaws constituted an independent basis for the invalidity of the IRA, failed to acknowledge that the IRA team used the interval of 0 to 10^{-6} at just two points (importation step 7 and "exposure") and in combination with uniform distribution only for "exposure". The Panel's conclusion that the alleged methodological flaws were serious enough to constitute an independent basis for the IRA's invalidity cannot stand if the limited uses of the impugned methodologies are understood in their broader context. Australia observes in this regard that, based on the contested interval, only 72 clean apples were estimated to become contaminated at importation step 7, which Australia argues is an insignificant number relative to the 6 million infested apples that the IRA estimated would be imported annually.

51. Australia concludes that, without the multiple failures to observe its duties under Article 11 of the DSU, the Panel should have found that Australia's SPS measures for fire blight and ALCM, as well as the general measures linked to both pests, were consistent with Articles 2.2, 5.1, 5.2, and 5.6 of the *SPS Agreement*.

4. Article 5.6 of the *SPS Agreement*

52. Australia requests the Appellate Body to reverse the Panel's conclusion, in paragraph 8.1(e) of the Panel Report, that the measures imposed in respect of fire blight and ALCM were more trade restrictive than required and therefore inconsistent with Article 5.6 of the *SPS Agreement*. Australia further requests the Appellate Body to reverse the two intermediate findings upon which this

conclusion was based: that New Zealand had raised a sufficiently convincing presumption that restricting imports of New Zealand apples to mature, symptomless apples was an alternative measure with respect to fire blight that would meet Australia's appropriate level of protection[76]; and that New Zealand had made a *prima facie* case that the inspection of a 600-fruit sample of each import lot would be an alternative measure with respect to ALCM that would meet Australia's appropriate level of protection.[77]

53. Australia identifies two bases for reversal of the Panel's findings under Article 5.6. First, Australia argues that the Panel's findings under Article 5.6 should be reversed consequentially upon a reversal of the Panel's findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*. According to Australia, the Panel's findings under Article 5.6 are based on its previous findings under Articles 5.1, 5.2, and 2.2. Thus, if the Appellate Body reverses the Panel's findings under Articles 5.1, 5.2, and 2.2 the basis for the Panel's findings relating to Article 5.6 would fall, because those findings could not be sustained on their own terms.

54. Second, irrespective of its arguments under Articles 5.1, 5.2, and 2.2, Australia alleges that the Panel misinterpreted the requirements of Article 5.6 and misapplied the rules governing the burden of proof. Although the Panel correctly stated the burden of proof at the outset and at the conclusion of its analysis, the Panel in fact applied a significantly lower standard. The Panel relied "virtually entirely"[78] upon its ultimate finding under Article 5.1 as to the IRA's exaggeration of risk associated with the importation of apples. With respect to both fire blight and ALCM, the Panel purported to consider whether the alternative measures would meet Australia's appropriate level of protection, but in fact only reviewed the perceived inadequacy of the scientific basis for intermediate estimates in the risk analysis. Even assuming *arguendo* that the Panel's analysis was correct, this entitled the Panel to conclude only that, in the light of the shortcomings in the IRA, an inference that the alternative measures would meet the appropriate level of protection was not foreclosed. This is not sufficient to establish a *prima facie* case, which consists of evidence on the basis of which a panel would be required to rule in favour of the claim. The Panel, however, "fundamentally misunderstood"[79] that New Zealand's burden was not to show that its proposed alternative measures "might" or "may" achieve Australia's appropriate level of protection, but that they "would" do so. In Australia's view, therefore, by prematurely shifting the burden to Australia to rebut the presumption of inconsistency, the Panel effectively reversed the burden of proof, and required Australia to prove

[76]Panel Report, para. 7.1197.
[77]Panel Report, para. 7.1328.
[78]Australia's appellant's submission, para. 171.
[79]Australia's appellant's submission, para. 172.

consistency of its measures upon a showing by New Zealand of no more than "doubt" about whether an alternative measure would achieve the appropriate level of protection.

55. Australia further contends that the Panel misinterpreted the words "appropriate level of sanitary or phytosanitary protection" in Article 5.6. In determining whether an alternative measure proposed by a complainant achieves the respondent's appropriate level of protection, a panel must apply the definition of "appropriate level of protection" in accordance with Annex A(5) to the *SPS Agreement*. This must also be understood by reference to the meaning of "risk" as set out in the definition of "risk assessment" in Annex A(4). Pursuant to this definition, "risk" is the combination of "the likelihood of entry, establishment or spread" of a pest and of "the associated potential biological and economic consequences". The Panel's analysis of New Zealand's Article 5.6 claim, however, focused solely on the likelihood of entry, establishment and spread of a pest and failed to consider any such associated consequences. Australia submits that, without having considered the potential consequences, the Panel could not have reached any conclusion about the "risk" associated with New Zealand's alternative measures and, therefore, could not have properly determined whether those measures meet Australia's appropriate level of protection.

56. Furthermore, Australia alleges that the Panel misinterpreted the requirement that there be "another measure ... that achieves" the Member's appropriate level of protection in order to establish that the measure at issue is more trade restrictive than required. It is not enough that the alternative measures "could" or "might" achieve the appropriate level of protection. In its anxiousness to avoid impermissible *de novo* review, the Panel failed to satisfy itself that the evidence and arguments adduced by New Zealand demonstrate that the alternative measures "would achieve" Australia's appropriate level of protection, and instead wrongly relied on its findings under Article 5.1 regarding the inadequacy of the IRA as also establishing inconsistency with Article 5.6. However, the correct question for a panel assessing a breach of Article 5.6 to ask itself is whether a "proper" risk assessment would necessarily have concluded that the alternative measure "would" achieve the Member's appropriate level of protection.[80] This does not require an impermissible *de novo* review, because 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. For Australia, it is clear that, had the Panel asked itself the correct legal question, it would have answered in the negative, because the Panel expressly recognized that a proper risk assessment might conclude that the alternative measures exceed Australia's appropriate level of protection.

[80]Australia's appellant's submission, para. 179.

B. *Arguments of New Zealand – Appellee*

1. Annex A(1) to the *SPS Agreement*: "SPS Measure"

57. New Zealand requests the Appellate Body to uphold the Panel's findings that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) and are covered by the *SPS Agreement*. New Zealand characterizes Australia's conception of an SPS measure—and, in particular, the alleged distinction between "principal" and "ancillary" measures—as "mere assertion" with "no basis in the SPS Agreement or the jurisprudence".[81]

58. New Zealand refers to Australia's argument that to *not* distinguish between principal and ancillary measures would "potentially open up every detail of an administrative regime to separate evaluation for compliance" with Articles 2.2, 5.1, 5.2, and 5.6 of the *SPS Agreement*.[82] In New Zealand's view, this argument overlooks two points. First, only SPS measures that directly or indirectly affect international trade are subject to scrutiny under the *SPS Agreement*, and thus not every detail is open to evaluation. Second, what is required to comply with the obligations of the *SPS Agreement* depends on the particular circumstances and the nature of the measures at issue. Where measures are closely related to each other and rely to a significant degree on the same underlying science, this is relevant in determining whether those measures comply with the applicable obligations.

59. New Zealand makes reference to Australia's arguments that, in order to constitute an SPS measure, a measure must have the three essential characteristics required by the first sentence of Annex A(1) to the *SPS Agreement*, and that the Panel should have asked whether each measure requires, practically and purposively, some discrete and recognizable action or course of action that was deployed or put into practical operation for the purpose of protecting against some relevant risk. New Zealand highlights, however, that the Panel approached this issue in accordance with the text of the *SPS Agreement* and the relevant jurisprudence, rather than in accordance with the definition set forth by Australia. The Panel considered, first, whether the purposes of the 16 measures correspond to the purposes in subparagraphs (a) through (d) of Annex A(1); and, second, whether the measures correspond to the "form and nature" elements in the last sentence of Annex A(1).[83] New Zealand maintains, in any event, that all three elements of an SPS measure identified by Australia were addressed by the Panel.

[81]New Zealand's appellee's submission, para. 2.6.
[82]New Zealand's appellee's submission, para. 2.11 (referring to Australia's appellant's submission, para. 58).
[83]New Zealand's appellee's submission, para. 2.17 (referring to Panel Report, paras. 7.118 and 7.119; and Australia's second written submission to the Panel, paras. 75 and 76).

60. With respect to the first element identified by Australia, namely, that the instrument requires some action or course of action, New Zealand submits that the Panel confirmed that "each of the 16 measures requires New Zealand or its apple producers, packing houses and traders to do something as a condition for New Zealand apples to have access to the Australian market".[84] Regarding Australia's second element, namely, whether the measures were "deployed or put into practical operation", the Panel found that "New Zealand needs to comply with each of the measures in order to export apples to Australia", and that, therefore, the measures were "deployed or put into practical operation".[85] The Panel also addressed the third element of Australia's definition and identified the purpose of the 16 measures. The Panel analyzed the elements in subparagraph (a) of Annex A(1), looking at the subject ("animal or plant life or health"), geography ("within the territory of the Member"), and risk ("arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms"). For New Zealand, the Panel correctly concluded that the 16 measures were applied to protect against a category of risk specified in subparagraph (a) of Annex A(1).[86]

61. New Zealand also refers to Australia's argument that the exclusion of "ancillary" measures from the definition of an "SPS measure" is supported by ISPM No. 5, which distinguishes between "phytosanitary measures" and "phytosanitary procedures". New Zealand responds that the *SPS Agreement*'s definition of SPS measure is clear and unambiguous, and does not exclude SPS measures because they "support", "enhance", or "implement" other SPS measures. In addition, New Zealand maintains that an SPS regime may well be made up of many interlinked measures. The fact that a measure is linked to another measure does not disqualify it from being an SPS measure in its own right. New Zealand further submits that the last sentence of Annex A(1) lists, as examples of SPS measures, the very types of measures that Australia argues are "ancillary".

2. Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*

62. New Zealand requests the Appellate Body to reject Australia's claim that the Panel misinterpreted and misapplied Articles 5.1, 5.2, and 2.2 of the *SPS Agreement* and to find, instead, that the Panel was correct in its interpretation of what constitutes a "risk assessment", and that it properly interpreted and applied Articles 5.1, 5.2, and 2.2 of the *SPS Agreement* according to the guidance provided by the Appellate Body in *US/Canada – Continued Suspension*.

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[84]New Zealand's appellee's submission, para. 2.21 (quoting Panel Report, para. 7.161). (underlining added by New Zealand)

[85]New Zealand's appellee's submission, para. 2.22 (quoting Panel Report, para. 7.161, and Australia's appellant's submission, para. 63).

[86]New Zealand's appellee's submission, para. 2.23 (referring to Panel Report, para. 7.139).

63. New Zealand argues that two of Australia's main assertions, that the standard of objectivity and coherence set out in paragraph 591 of the Appellate Body reports in *US/Canada – Continued Suspension* should apply only to conclusions ultimately reached and that a panel should only review whether expert judgements fall within a range considered legitimate by the standards of the scientific community, are "designed to shelter the IRA from effective review".[87]

64. According to New Zealand, Australia's discussion of the concepts of "sufficient scientific evidence" under Articles 2.2 and 5.7 of the *SPS Agreement* and of "as appropriate to the circumstances" and "risk assessment techniques developed by the relevant international organizations" under Article 5.1, is unclear. New Zealand agrees that risk assessments often involve scientific uncertainty and that expert judgement may be used in such circumstances, but argues that the third criterion in *US/Canada – Continued Suspension*, that reasoning in a risk assessment be "objective and coherent" and that the "conclusions drawn find sufficient support in the scientific evidence", applies equally to reasoning and to conclusions that are based in part on the application of expert judgement.

65. New Zealand claims that, unlike the definition proposed by Australia, the phrase "as appropriate to the circumstances" in Article 5.1 provides for some flexibility regarding the nature of a risk assessment, but does not allow deviation from Article 5.1's substantive obligations. New Zealand recalls that, during the eight-year risk assessment process for New Zealand apples, Australia deviated from its usual "qualitative" approach to assessing risk and adopted a "semi-quantitative" approach in which the probability of entry, establishment and spread was assessed quantitatively. New Zealand further notes that the Panel agreed with its appointed experts that "a quantitative methodology should only be used 'when reliable specific numeric data are available'".[88]

66. New Zealand observes that, under Article 5.1, irrespective of the particular risk assessment methodology adopted by a WTO Member, according to the third criterion set out in paragraph 591 of the Appellate Body reports in *US/Canada – Continued Suspension*, there must be a sufficient relationship between the scientific evidence and the conclusions reached by the risk assessor. ISPM No. 2 and ISPM No. 11, which establish general principles for risk assessment, cannot be used to limit the specific obligations contained in Article 5.1. Specifically, New Zealand claims that, even if a risk assessment takes into account techniques developed by relevant international organizations, the risk assessment is not "sheltered" from review under Article 5.1, nor can it be considered objectively justified based only on the implementing Member's indication that expert judgement was used.

[87]New Zealand's appellee's submission, para. 2.40.
[88]New Zealand's appellee's submission, para. 2.47 (quoting Panel Report, para. 7.441).

67. New Zealand asserts that the "objective and coherent" standard in *US/Canada – Continued Suspension* refers to "particular conclusions", not only to "conclusions ultimately reached", and is not replaced or weakened by ISPM No. 2 and ISPM No. 11. New Zealand claims that requiring a panel to assess only "conclusions ultimately reached" is tantamount to prohibiting a panel from making an objective assessment, because a panel would be prevented from reviewing the relevant relationships between the scientific evidence, intermediate determinations, and the ultimate conclusions reached.

68. New Zealand rejects Australia's contention that the Panel erred by considering whether the Panel itself or its appointed experts would have made the same judgement as Biosecurity Australia at intermediate steps in the IRA. In New Zealand's view, the Panel did not do so, but instead assessed whether the scientific evidence supporting the IRA was objective and coherent. According to New Zealand, Australia's assertion that a panel should assess whether an intermediate conclusion in a risk assessment was within a range that could be considered legitimate by the standards of the scientific community would establish a lower threshold for a panel reviewing a risk assessment than the threshold clarified by the Appellate Body in *US/Canada – Continued Suspension*, and such a lower threshold would eliminate the need to assess the link between the scientific evidence and the conclusions reached in a risk assessment.

69. New Zealand rejects Australia's contention that, where expert judgement was used to address scientific uncertainty, the Panel could only consider whether this expert judgement was legitimate by the standards of the scientific community. New Zealand asserts that the IRA did not face an unprecedented level of scientific uncertainty, and argues that the standard proposed by Australia would prevent a panel from assessing the relationship between scientific evidence and conclusions.

70. New Zealand disagrees with Australia's contention that the Panel failed to assess the materiality of flaws it found in the intermediate steps of the IRA or to consider whether such flaws undermined the overall risk assessment. New Zealand argues that the Panel did focus on the materiality of the flaws it found in the intermediate steps of the IRA and that it assessed the cumulative effect of such flaws.

71. New Zealand asserts that, contrary to Australia's claims, the Panel did not discount the IRA's use of expert judgement because it was not documented and transparent. Rather, the Panel rejected the concept that the mere recourse to expert judgement requires a panel to uphold the conclusions reached through that expert judgement.

(a) Measures regarding Fire Blight

72. New Zealand characterizes as without merit Australia's contentions that, because the Panel failed to assess the materiality of the purported flaws in the IRA, failed to consider whether the IRA's conclusions were within a range that could be considered legitimate by the standards of the scientific community, and misapplied the required standard of scientific sufficiency, the Panel misinterpreted and misapplied Articles 5.1, 5.2, and 2.2 of the *SPS Agreement* in finding that Australia's measures regarding fire blight are inconsistent with those provisions.

73. First, New Zealand disagrees that the Panel failed to assess the materiality of the faults it found with the IRA because it failed to engage with significant testimony of Dr. Deckers that was favourable to Australia. Dr. Deckers' views on the probability of importation were consistent with those of other experts and his statement that the IRA's prediction that the likelihood of importation of apples infested with fire blight is 3.9 per cent was not exaggerated is taken out of context by Australia. Read in context, it is clear that Dr. Deckers was commenting on the way in which the IRA aggregated the importation steps and not on the overall figure of 3.9 per cent. In addition, the Panel did not ignore Dr. Deckers' views on consequences, and Dr. Deckers' testimony that "[t]he limitation of apples exports to mature symptomless apples is not enough to achieve Australia's ALOP" is an issue to be dealt with under the Article 5.6 analysis and not under Article 5.1, as Australia suggests.[89] New Zealand adds that, in any event, this testimony was not favourable to Australia.

74. Second, New Zealand argues that Australia's proposed standard of "legitimate according to the standards of the scientific community" should not be adopted because it is not based on the Appellate Body's statements in *US/Canada – Continued Suspension*.[90] New Zealand agrees that the Panel was not required or permitted to make its own risk assessment, but highlights how the Panel correctly applied the required standard of objectivity and coherence of the reasoning in its analysis of importation steps 1, 2, 3, 5, and 7, and of exposure and spread, uniform distribution, establishment, and consequences of fire blight.

75. Regarding importation step 1, New Zealand asserts that Australia has not established that the Panel erred by failing to consider fully Dr. Paulin's testimony regarding the likelihood that *Erwinia amylovora* is present in any source orchard in New Zealand or by failing to assess the significance of any overestimation under importation step 1 either to the overall probability of importation or to the overall risk assessment, because the Panel fully considered Dr. Paulin's relevant testimony and the Panel noted the significance of any overestimation under importation step 1.

[89]New Zealand's appellee's submission, para. 2.95 (quoting Dr. Deckers' response to Panel Question 15, Panel Report, Annex B-1, para. 117).

[90]See, for instance, New Zealand's appellee's submission, para. 2.115.

76. New Zealand rejects Australia's criticisms of the Panel's assessment of importation step 2, including that the Panel erred by failing to adhere to Appellate Body guidance that scientific uncertainty or inconclusiveness does not excuse the risk assessor from evaluating the risk. New Zealand argues that the Panel was cognizant of scientific uncertainty or inconclusiveness, but that this does not excuse non-compliance with the *SPS Agreement*; that the Panel used the word "aggregated" simply to mean "collected together" and explained that the IRA did not indicate transparently how the scientific data from a range of disparate studies were used under importation step 2; that the Panel made findings that would satisfy the Australian-proposed test of "within a range that could be considered legitimate according to the standards of the scientific community" (even though this test is itself flawed); and that the Panel considered the significance of an overestimation under importation step 2.[91]

77. Regarding importation step 3, New Zealand contests Australia's claims that the Panel erred by overlooking the practical necessity of making a risk assessment judgement even when there is limited scientific evidence, by failing to assess whether Australia's estimates could be considered legitimate by the scientific community, and by failing to assess the significance of any overestimation under importation step 3. The Panel did not require Australia to make a specific kind of risk assessment. Rather, in applying the requirement that the judgements made by a risk assessor be objectively justifiable, the Panel did not consider Australia's estimate to be sufficiently supported by scientific evidence. New Zealand also argues that the Panel assessed the significance of an overestimation under importation step 3.

78. In response to Australia's claims regarding importation step 5, that the Panel erred in failing to ascertain whether importation step 5 could be considered legitimate according to the standards of the scientific community and in failing to assess the significance of any overestimation under importation step 5, New Zealand asserts that the Panel assessed the connection between the IRA's conclusions on importation step 5 and the scientific evidence and considered the materiality of any overestimation under importation step 5.

79. Similarly, with respect to Australia's arguments on importation step 7, New Zealand contends that the Panel assessed the connection between the IRA's conclusions on importation step 7 and the scientific evidence[92] and considered the cumulative effect of importation step 7.

80. Regarding exposure and spread, New Zealand asserts that Australia mistakenly maintains that the Panel failed to consider the possibility that a transfer may occur despite a lack of direct scientific

[91]New Zealand's appellee's submission, paras. 2.113-2.116.
[92]New Zealand's appellee's submission, para. 2.131.

evidence on specific transfer mechanisms and made its finding on exposure without assessing the range of estimates that the scientific community would consider legitimate, while overlooking Dr. Deckers' testimony. New Zealand argues that it was not established before the Panel that the transfer itself could occur, that the Panel considered the relevant scientific evidence, and that the Panel assessed Dr. Deckers' testimony on exposure.

81. New Zealand disputes Australia's claims that the Panel erred by not questioning whether the use of uniform distribution was within a legitimate range of available judgements and by not assessing the significance of Dr. Schrader's testimony that uniform distribution may be useful. New Zealand responds that the Panel enquired whether uniform distributions may be used and properly assessed Dr. Schrader's testimony.

82. Regarding establishment, New Zealand disagrees with Australia's assertions that the Panel failed to assess whether 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, and contends that the Panel correctly assessed whether the IRA's conclusions found sufficient support in the scientific evidence and were thus objective and coherent.

83. New Zealand rejects Australia's arguments that the Panel erred in its assessment of the consequences of fire blight by not considering economic evidence of actual production losses shown to have been caused by prior outbreaks of fire blight and by ignoring Dr. Paulin's and Dr. Deckers' views that the consequences could properly be assessed as "high". In New Zealand's view, the Panel did not fail to consider any relevant economic evidence and did not overlook the relevant expert testimony regarding the consequences of fire blight.

(b) Measures regarding ALCM

84. Regarding ALCM, New Zealand disagrees with Australia's argument that the Panel failed to assess whether the estimate of the probability of importation was within a legitimate range. New Zealand responds that Australia's proposed standard of "within a range that could be considered legitimate according to the standards of the scientific community" should not be adopted because it is not based on the Appellate Body's guidance in *US/Canada – Continued Suspension*, that Australia conflates the concepts of "infestation rate" and "likelihood of importation"[93], and that the Panel reasonably concluded that the IRA's reasoning was not objectively justifiable.[94] New Zealand disputes Australia's contention that the Panel failed to assess the materiality of the perceived errors in

[93]New Zealand's appellee's submission, para. 2.186.
[94]New Zealand's appellee's submission, paras. 2.187-2.190.

the IRA, because the Panel was not required or permitted to conduct its own risk assessment and the Panel assessed the materiality of the perceived errors in the IRA. Moreover, New Zealand challenges Australia's argument that the Panel erred in not assessing whether the overall judgement made by the IRA was within a legitimate range, as evidenced by the Panel's failure to refer to Dr. Cross' testimony, because Australia's proposed standard of "within a range that could be considered legitimate according to the standards of the scientific community" should not be adopted and the Panel was not required to refer to Dr. Cross' testimony.[95]

3. Article 11 of the DSU

85. New Zealand requests the Appellate Body to reject Australia's claim that the Panel failed to make an objective assessment of the matter before it in accordance with Article 11 of the DSU. Referring to the Appellate Body report in *Brazil – Retreaded Tyres*, New Zealand notes that a panel enjoys discretion in assessing whether a given piece of evidence is relevant for its reasoning, and is not required to discuss, in its report, each and every piece of evidence.[96]

(a) Treatment of Expert Testimony

86. New Zealand highlights the differences in circumstances between this case and *US/Canada – Continued Suspension*. New Zealand points out that, in *US/Canada – Continued Suspension*, there were justifiable doubts as to the independence or impartiality of the two experts on whom the panel relied extensively, whereas the experts relied upon by the Panel in this dispute are clearly independent and impartial.[97] New Zealand then turns to specific statements made by the experts that Australia alleges the Panel overlooked.

87. First, New Zealand argues that Dr. Deckers' statement that the overall probability of importation was "not an exaggerated situation" is not favourable to Australia and, further, that the Panel did assess the significance of it.[98] New Zealand claims that this statement does not qualify Dr. Deckers' earlier statement that the probability of importation "could be overestimated".[99] New Zealand also submits that the statement concerning the overall probability of importation does not support Australia's position because Dr. Deckers considered that the likelihoods assessed under

[95]New Zealand's appellee's submission, paras. 2.201 and 2.202.
[96]New Zealand's appellee's submission, para. 2.207 (quoting Appellate Body Report, *Brazil – Retreaded Tyres*, para. 202).
[97]New Zealand's appellee's submission, para. 2.209.
[98]New Zealand's appellee's submission, paras. 2.217-2.222 (quoting Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Dr. Deckers, para. 259).
[99]New Zealand's appellee's submission, para. 2.220 (referring to Australia's appellant's submission, para. 137; and quoting Dr. Deckers' response to Panel Question 34, Panel Report, Annex B-1, para. 237).

importation steps 2, 3, and 5, which are aggregated as parts of the overall probability of importation, are overestimated.

88. Second, New Zealand points out that, when stating that the IRA's estimation of exposure as an interval of 0 to 10^{-6} appeared to be correct, Dr. Deckers "was not making an informed comment on the interval"[100], because he was not considering whether the likelihood at issue corresponds to an event that almost certainly would not occur. New Zealand also notes that Dr. Deckers admitted the insufficiency of his expertise in examining the appropriateness of risk analysis methodologies.

89. Third, as to the IRA's assessment of consequences associated with fire blight, New Zealand claims that the Panel made an objective assessment of the views of Dr. Deckers and those of Dr. Paulin. The Panel chose to rely primarily on Dr. Paulin's views because they were more comprehensive and detailed on this issue than those of Dr. Deckers. New Zealand also argues that Dr. Deckers' response to Panel Question 11 and his testimony are of limited assistance in considering whether the IRA's evaluation of the potential consequences of entry, establishment and spread of fire blight was coherent and objective.

90. Fourth, New Zealand argues that, in concluding that restricting the importation of apples to mature, symptomless apples would meet Australia's appropriate level of protection, the Panel properly engaged with the totality of the evidence and did not, as Australia claims, dismiss without explanation Dr. Deckers' testimony stating that such a limitation is not enough to achieve Australia's appropriate level of protection.

91. Fifth, New Zealand claims that Dr. Schrader's general statement, that the use of uniform distribution is useful when there is not sufficient information to determine the most likely value, could not be applied to the IRA because this statement relied on the existence of a properly justified maximum value, and the maximum value was not properly justified in the IRA. New Zealand also argues that the Panel properly chose to rely primarily on the responses of experts who had addressed the IRA's use of uniform distribution in combination with the interval of 0 to 10^{-6}.

92. Lastly, New Zealand contests Australia's argument that the Panel failed to make an objective assessment of Dr. Cross' views relating to ALCM by failing to reproduce one aspect of his testimony in its Report. Citing the Appellate Body report in *EC – Hormones*, New Zealand emphasizes that a

[100]New Zealand's appellee's submission, para. 2.224.

panel should be allowed a substantial margin of discretion as to which statements are to be explicitly referred to in its report.[101]

(b) The Panel's Alleged Misunderstanding of the IRA

93. New Zealand contests Australia's assertion that the Panel misunderstood the IRA's use of the interval of 0 to 10^{-6} and uniform distribution to represent negligible events. First, the Panel was correct to consider the definitional correspondence between the term "negligible" and the interval and distribution. Table 12 of the IRA sets out a series of likelihood labels, corresponding to quantitative probability intervals, and defines "negligible" likelihood as an event that "would almost certainly not occur".[102] Second, the Panel correctly understood what the interval and uniform distribution assigned to "negligible" events represented. The Panel found that the "negligible" interval together with uniform distribution were not appropriate for modelling events that almost certainly would not occur. Lastly, the Panel was correct in concluding that the methodological flaws were serious enough to constitute an independent basis for the IRA's invalidity. New Zealand points out that the interval at issue was assigned to over one third of all the intervals used in the IRA. New Zealand also notes that Dr. Sgrillo and Dr. Latorre stated that there were fundamental problems with the IRA's treatment of the "negligible" interval.

4. Article 5.6 of the *SPS Agreement*

94. New Zealand requests the Appellate Body to uphold the Panel's conclusion that Australia's measures regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*. New Zealand submits that the Panel was correct in finding that New Zealand had raised a presumption that restricting imports of New Zealand apples to mature, symptomless apples was an alternative measure with respect to fire blight that would meet Australia's appropriate level of protection, and that New Zealand had made a *prima facie* case that the inspection of a 600-fruit sample of each import lot would be an alternative measure with respect to ALCM that would meet Australia's appropriate level of protection.

95. In response to Australia's argument that the Panel's findings under Article 5.6 should be reversed consequentially upon a reversal of the Panel's findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*, New Zealand argues that, because the latter findings should not be reversed, the conditions for a consequential reversal would not arise. In any event, New Zealand argues that Australia is not correct in arguing that the Panel's findings under Article 5.6 are largely consequential

[101]New Zealand's appellee's submission, para. 2.252 (quoting Appellate Body Report, *EC – Hormones*, para. 138).

[102]New Zealand's appellee's submission, para. 2.261.

on its findings under Articles 5.1, 5.2, and 2.2, because Australia overlooks that the Panel undertook a second step in its analysis, assessing New Zealand's contention that, with respect to fire blight and ALCM, mature, symptomless apples do not pose a risk exceeding Australia's appropriate level of protection.

96. New Zealand contends that Australia's argument that the Panel, while correctly articulating the burden of proof, actually applied a significantly lower burden of proof "does not withstand serious analysis".[103] Although Australia asserts that the Panel relied "virtually entirely"[104] upon its finding under Article 5.1 as to the IRA's exaggeration of risk, the Panel's findings under Article 5.1 were only the beginning of its analysis and not something on which it relied "virtually entirely". The Panel adopted a two-step approach, assessing under the first step whether Australia's calculation of the risk resulting from the importation of New Zealand apples was exaggerated, and considering more directly under the second step whether the alternative measures proposed by New Zealand would reduce the risk to or below Australia's appropriate level of protection. New Zealand argues that Australia is incorrect in asserting that under the second step the Panel merely reviewed the perceived inadequacy of the scientific basis for intermediate estimates in the IRA. Instead, the Panel assessed New Zealand's contention that mature, symptomless apples do not pose a risk of transmission of fire blight or ALCM that exceeds Australia's appropriate level of protection. The Panel did more than rely on its findings under Article 5.1: it looked at the arguments made by New Zealand and the views of the experts. New Zealand highlights, in this regard, that it was particularly appropriate for the Panel to consider the scientific evidence in the IRA and test New Zealand's claim with the assistance of the experts, because Australia relied *exclusively* on the validity of the IRA to defend New Zealand's claim under Article 5.6. Having done so, Australia cannot now claim that the Panel erred in having regard to the evidence in the IRA as part of its Article 5.6 analysis. Thus, New Zealand maintains that there was no "shifting"[105] of the burden of proof.

97. New Zealand also objects to Australia's allegation that the Panel, throughout its consideration of New Zealand's claim under Article 5.6, failed to consider potential biological and economic consequences, and instead focused solely on the likelihood of entry, establishment and spread of the pests. The Panel observed that it had already assessed potential biological and economic consequences in the context of its analysis under Article 5.1, and referred back to these findings in its analysis under Article 5.6, namely, in the context of fire blight at paragraph 7.1152, and in the context

[103]New Zealand's appellee's submission, para. 2.290.
[104]New Zealand's appellee's submission, para. 2.288 (quoting Australia's appellant's submission, para. 171).
[105]New Zealand's appellee's submission, para. 2.300 (quoting Australia's appellant's submission, para. 173).

of ALCM at paragraph 7.1307 of its Report.[106] In addition, the Panel accepted that New Zealand had raised a presumption that there is no scientific evidence that mature, symptomless apples can provide a pathway for the transmission of fire blight, and that the conditions for the entry, establishment and spread of ALCM will "likely 'almost never occur'" even with the "'worst case' infestation level".[107] In the light of these findings, along with its earlier finding that the IRA's assessment of consequences was not objectively justifiable, the Panel was not required to consider consequences any further in this part of its analysis.

98. With respect to Australia's argument that the Panel failed to assess whether a proper risk assessment would necessarily have concluded that the alternative measure would achieve Australia's appropriate level of protection, New Zealand argues that this would constitute an impermissible *de novo* assessment of the risk. Australia is requiring a degree of scientific certainty that can come only from performing a risk assessment. New Zealand maintains that the Panel could not make the assessment proposed by Australia without performing an actual risk assessment. New Zealand reiterates that Australia's arguments ignore what the Panel found New Zealand to have demonstrated regarding the likelihood of entry, establishment and spread of fire blight and ALCM, and observes that it is difficult to understand what more the Panel could have done without conducting a *de novo* review.

C. *Claims of Error by New Zealand – Other Appellant*

1. Annex C(1)(a) and Article 8 of the *SPS Agreement*

99. New Zealand requests the Appellate Body to reverse the Panel's finding that its claim under Annex C(1)(a), and its consequential claim under Article 8 of the *SPS Agreement*, fell outside the Panel's terms of reference. New Zealand alleges that the Panel erred in finding that New Zealand had not properly identified the measure at issue in the context of its claims under Annex C(1)(a) and Article 8, and that New Zealand had to challenge the completed "IRA process" as a measure separate from the measures specified in the IRA. New Zealand further requests the Appellate Body to complete the analysis of its claim of undue delay.

100. New Zealand contends that the Panel committed three main errors relating to the interpretation of Annex C(1)(a) to the *SPS Agreement* and Article 6.2 of the DSU, namely: (i) the Panel proceeded on the erroneous assumption that the measure at issue must *directly* cause the violation of obligations; (ii) the Panel blurred the distinction between measures at issue and claims; and (iii) by insisting that the IRA process, although expired, was the only measure that could be

[106]New Zealand's appellee's submission, paras. 2.304 and 2.305.
[107]New Zealand's appellee's submission, para. 2.309 (quoting Panel Report, para. 7.1312).

challenged, the Panel ignored the fact that it is the measures challenged by New Zealand that continue to impair benefits.

101. New Zealand maintains that there is no requirement that the measure at issue must directly cause the violation of an obligation, and refers to Article 5.1 of the *SPS Agreement*, Article X:1 of the *General Agreement on Tariffs and Trade 1994* (the "GATT 1994"), and provisions of the *Agreement on Safeguards* in support of this proposition. Thus, under Article 5.1 of the *SPS Agreement*, it is not the measure at issue that causes the breach, but rather the lack of an objectively justifiable risk assessment. New Zealand adds that the Appellate Body report in *EC – Selected Customs Matters* is consistent with this proposition. In that case, the Appellate Body sought to ensure that "measures at issue" were not limited by the obligation being challenged, and the Appellate Body stated that "a complainant is entitled to include in its panel request an allegation of inconsistency with a covered agreement of any measure that may be submitted to WTO dispute settlement."[108]

102. New Zealand contends that the Panel erred in finding that the measure at issue must necessarily be the "procedure" referred to in the chapeau of Annex C(1) to the *SPS Agreement*. In doing so, the Panel improperly limited the measures at issue by reference to the specific obligation being challenged, thereby blurring the distinction between claims and measures under Article 6.2 of the DSU. In contrast, the Appellate Body in *EC – Selected Customs Matters* held that the "manner of administration" relevant for purposes of Article X:3 of the GATT 1994 need not necessarily be identified as the measure at issue. By analogy, the reference to "approval procedures" in Annex C(1)(a) does not mean that such "approval procedures" must be identified as the measures at issue.[109] New Zealand further observes that the Panel's finding is at odds with the finding of the panel in *EC – Approval and Marketing of Biotech Products*, where the measure at issue was the *de facto* moratorium, rather than the "procedures" referred to in the chapeau of Annex C(1).[110]

103. New Zealand takes issue with the Panel's finding that the IRA process, although expired, was the only measure that could be challenged, because it continues to impair benefits. It is the SPS measures resulting from the approval process, rather than the approval process itself, that give rise to the continuing impairment of benefits, and that is why New Zealand made those measures the subject of its challenge. The SPS measures are inextricably linked to the process by which they were developed and they can therefore be challenged under Annex C(1)(a). Where SPS measures have been developed and adopted in the context of an unduly delayed approval process, such measures can

[108]New Zealand's other appellant's submission, para. 12 (quoting Appellate Body Report, *EC – Selected Customs Matters*, para. 133).
[109]New Zealand's other appellant's submission, para. 17.
[110]New Zealand's other appellant's submission, para. 18 (referring to Panel Report, *EC – Approval and Marketing of Biotech Products*, paras. 7.1491 and 7.1492).

be the basis of a challenge of that undue delay. There may be other ways to raise a claim of undue delay, for example, by challenging, in connection with an ongoing process, the approval process itself, or the acts or omissions leading to delays in approval, as the measures at issue. Similarly, as the Panel itself recognized, it may be possible to characterize the substantive SPS measures that are developed as part of an approval process, and the approval process itself, as separate SPS measures.[111] However, in New Zealand's view, it does not follow from this that only the approval process can be challenged under Annex C(1)(a), even when it has expired.

104. New Zealand requests the Appellate Body to complete the legal analysis with regard to New Zealand's claim of undue delay. New Zealand explains that the panel in *EC – Approval and Marketing of Biotech Products* found that a delay is "undue" if the time taken to complete an approval procedure exceeds the time that is reasonably needed to check and ensure the fulfilment of its relevant SPS requirements.[112] New Zealand asserts that in the present dispute the key factual matters establishing that the time taken to complete the IRA exceeded that which was reasonably needed are uncontested, namely: (i) the eight-year period to complete the IRA; (ii) letters from Australia's quarantine service at the outset of the IRA process indicating that the risk assessment would be "routine" and would take approximately 12 months to complete because it was "technically less complex" than previous processes; (iii) the recognition, in an Australian government-mandated review of Australia's quarantine system, that the delay was "difficult to justify"; and (iv) the absence of explanation or justification of the delay by Australia.[113]

D. *Arguments of Australia – Appellee*

1. Annex C(1)(a) and Article 8 of the *SPS Agreement*

105. Australia requests the Appellate Body to dismiss New Zealand's other appeal and uphold the Panel's finding that New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement* were outside the Panel's terms of reference. According to Australia, the Panel correctly required New Zealand to identify in its panel request the "procedure" alleged to be inconsistent with the obligation under Annex C(1)(a).

106. In response to New Zealand's argument that the Panel erroneously assumed that the measure at issue must directly cause the violation of obligations, Australia asserts that New Zealand "seeks to contrive a distinction between the object of a claimed violation and a measure at issue, when they are

[111]New Zealand's other appellant's submission, para. 25 (referring to Panel Report, para. 7.1463).
[112]New Zealand's other appellant's submission, para. 28 (quoting Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1499).
[113]New Zealand's other appellant's submission, para. 28.

the same thing."[114] Australia further argues that the Panel did not blur the distinction between the measures at issue and the claim because it did not interpret the term "measures at issue" in Article 6.2 of the DSU in the light of the specific obligation. Rather, the Panel simply found that the object of New Zealand's claim was absent from its panel request. The Panel also did not, as New Zealand asserts, find that the *only* measure that could be challenged in the circumstances of this dispute was the expired IRA process. Instead, asserts Australia, the Panel's conclusion concerned simply the way in which New Zealand articulated its claims in this dispute.

107. Australia points to the various ways in which New Zealand formulated and reformulated its Annex C(1)(a) and Article 8 claims throughout these proceedings. Australia emphasizes that, throughout these various formulations, the object of New Zealand's claim was the IRA process, or the development of the 17 specified measures, and that New Zealand never claimed that the 17 measures themselves violated Annex C(1)(a) and Article 8. The Panel correctly understood this, and also correctly recognized that the *development* of the 17 measures was conceptually distinct from the measures themselves. The measures at issue were, as established in the Panel's preliminary ruling, limited to the 17 measures identified in the panel request, and the Panel correctly found that neither the development of the 17 measures, nor "the IRA process", were captured by the mere identification of the 17 measures in the panel request. Although New Zealand cites the Appellate Body report in *EC – Selected Customs Matters* for the proposition that a complainant is entitled to challenge any measure, this ruling does not speak to the more fundamental requirement that New Zealand has consistently overlooked, namely, that the allegation of inconsistency in respect of the *relevant measure* must be set out in the panel request. Australia emphasizes that it is not sufficient for the relevant measure to be identified in subsequent submissions, because a complainant cannot be permitted to "cure" defects in its panel request by identifying in its subsequent submissions the measure it sought to challenge.[115]

108. Australia submits that in any event New Zealand's claim is based on a misinterpretation of Annex C(1)(a). Although New Zealand seems to regard Annex C(1)(a) as a provision containing an obligation to develop SPS measures without undue delay, the ordinary meaning of a procedure "to check and ensure the fulfilment" of SPS measures referred to in the chapeau of Annex C(1) cannot be the equivalent of a procedure that "develops" SPS measures.[116] The measures at issue were adopted following and as a result of the IRA process, and, therefore, the IRA process cannot be considered as a process intended to check or ensure the fulfilment of the 17 measures within the scope of the

[114]Australia's appellee's submission, para. 10.
[115]Australia's appellee's submission, para. 14 (quoting Appellate Body Report, *US – Carbon Steel*, para. 127).
[116]Australia's appellee's submission, para. 18.

chapeau of Annex C(1). In addition, before the Panel, New Zealand submitted that the SPS measure to which the chapeau of Annex C(1) refers is Australia's regime relating to the import approval of fresh fruit or vegetables.[117] According to Australia, this concession makes it all the more explicit that the 17 measures within the Panel's terms of reference corresponded to neither the "procedure" nor the "[SPS] measures" referred to in the chapeau of Annex C(1).[118]

109. Finally, Australia submits that the Appellate Body should not complete the legal analysis of New Zealand's claims under Annex C(1)(a) and Article 8 because at least two of the "key factual matters" relied upon by New Zealand, namely, the absence of justification for the delay and the statements in the domestic review of Australia's quarantine system, have been contested by Australia in the course of the Panel proceedings.[119]

E. *Arguments of the Third Participants*

1. European Union

110. The European Union disagrees with Australia's conception of an SPS measure, contending instead that, to the extent that an act or an omission attributable to a WTO Member is applied in order to pursue one of the aims listed in Annex A(1)(a) to (d), the WTO adjudicating bodies can consider that act or omission a "measure" within the meaning of Annex A(1) to the *SPS Agreement* and, thus, examine its conformity with the provisions of the *SPS Agreement*. The Appellate Body has adopted a broad notion of the term "measure" under the DSU, and there is no reason to interpret the term differently in the chapeau of Annex A(1) to the *SPS Agreement*.[120] Neither Annex A(1) nor any other provision of the *SPS Agreement* distinguishes between "ancillary" and "principal" measures. WTO Members frequently adopt a number of different measures that can only attain their objective when they operate together. Thus, an assessment of a given measure cannot always be done in "clinical isolation"[121], but may require an adjudicator to consider the interaction among a number of different measures. This, however, does not mean that each act or omission of the State that meets the relevant conditions cannot be identified as a discrete "measure" for the purpose of WTO dispute settlement. The European Union adds that it is up to the complaining Member, in the first instance, to identify the "measure at issue". The complaining Member has some, albeit not unfettered, discretion in this respect, and must also accept the consequences that flow from its identification of the measure at

[117]Australia's appellee's submission, para. 19 (quoting New Zealand's response to Panel Question 146 after the first Panel meeting, para. 301).
[118]Australia's appellee's submission, para. 19.
[119]Australia's appellee's submission, para. 20.
[120]European Union's third participant's submission, paras. 3-6 (referring to Appellate Body Report, *US – Corrosion-Resistant Steel Sunset Review*, paras. 81-89).
[121]European Union's third participant's submission, para. 9.

issue. In any event, the European Union observes, sometimes the question of whether one construes a single measure or several distinct measures will be of no significance, as appears to be the case in this dispute.

111. With respect to Australia's claims of error under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*, the European Union submits that the panel's role in reviewing a risk assessment conducted by a WTO Member has been correctly identified and explained by the Appellate Body in previous disputes, in particular in *US/Canada – Continued Suspension*. It is not the panel's role to determine whether a risk assessment is correct or not. In addition, as stated by the Appellate Body in *US/Canada – Continued Suspension*, the risk assessment cannot be entirely isolated from, and its scope or method may be affected by, the appropriate level of protection chosen by a Member.[122] The fact that there may be some minor flaws, misconceptions, or subjective elements in a risk assessment does not, in itself, suffice to disqualify the risk assessment under Article 5.1 of the *SPS Agreement*. Thus, observes the European Union, the onus of proof placed on a complaining party is high.

112. The European Union expresses the view, in connection with Australia's claim under Article 11 of the DSU, that experts' opinions should be confined to assessing the scientific evidence submitted by the parties. Neither the panel nor the experts may engage in *de novo* review of the evidence, conduct their own risk assessments, or consider or opine on the science in a manner that is completely detached from the appropriate level of protection. Without taking a position as to whether Australia has met the high burden of establishing that the Panel acted inconsistently with Article 11 of the DSU in this dispute, the European Union notes that, in a number of passages of its Report, the Panel seems to have been rather selective in reporting the experts' opinions, ignoring or dismissing without any (or much) explanation testimony that did not support its findings.

113. Regarding Australia's claim under Article 5.6 of the *SPS Agreement*, the European Union agrees with Australia that, in principle, a finding of violation of Article 5.6 cannot be merely consequential on a finding of violation of Articles 5.1 and 2.2 of the *SPS Agreement*. Articles 5.1 and 5.6 of the *SPS Agreement* contain distinct and independent obligations. Measures that are properly based on a risk assessment as required by Articles 5.1 and 2.2 may still breach Article 5.6. Conversely, the fact that a risk assessment may not be in compliance with Articles 5.1 and 2.2 does not exclude that the SPS measures adopted are consistent with Article 5.6. The European Union takes no position on whether the Panel's findings were merely consequential on its finding of a breach of Articles 5.1 and 2.2, but submits that, should the Appellate Body conclude that they were, then Australia's claims of error would be well founded.

[122]European Union's third participant's submission, para. 20 (quoting Appellate Body Reports, *US/Canada – Continued Suspension*, para. 534).

114. Regarding New Zealand's other appeal, the European Union submits that a process leading to the adoption of a risk assessment that forms the basis of one or more SPS measures may, under certain circumstances, constitute, in itself and independently from those measures, an SPS measure. In the present dispute, the European Union "wonders"[123] whether the undue delay claim by New Zealand relates to the adoption of the measures at issue, rather than to an alleged "IRA process". If so, it seems rather artificial to refer to the "IRA process" as a separate and distinct measure. The European Union also points out that New Zealand's panel request asserts that the 17 measures, both individually *and as a whole*, are inconsistent with the relevant obligations. Challenging the alleged undue delay of the "IRA process" appears, therefore, to be tantamount to contesting the undue delay with respect to the 17 measures as a whole. The European Union adds that the fact that the 17 measures are imposed and regulated by the IRA means that the alleged delay in undertaking and completing approval inevitably and automatically affected the 17 measures duly identified by New Zealand in its panel request.

2. Japan

115. With respect to the issue of whether the Panel erred in finding that the 16 measures challenged by New Zealand individually constitute SPS measures, Japan disagrees with Australia's argument that "an administrative or procedural requirement that is necessary, even 'indispensable', to achieve ALOP, but not sufficient to do so, cannot without more amount in itself to an SPS measure."[124] Japan highlights that Annex A(1) to the *SPS Agreement* refers to "*any* measure" and to "*all* relevant laws, decrees, regulations, requirements and procedures"[125], thus suggesting a broad range of measures are covered. Japan further points to Annex A(1)'s reference to "provisions on relevant statistical methods, sampling procedures and methods of risk assessment", arguing that such measures could be "ancillary", yet they are expressly included in the definition of an SPS measure. Japan cautions that accepting Australia's reasoning would substantially undermine the disciplines of the *SPS Agreement* and that Members must not be allowed to circumvent their obligations by putting in place trade-restrictive, SPS-type measures that are merely "ancillary" or "administrative".

116. Japan agrees with Australia that the Panel erred in finding that Biosecurity Australia, the Australian entity issuing the IRA, acted inconsistently with Article 5.1 by failing to document and to make transparent its use of expert judgement. Japan argues that the *SPS Agreement* does not contain a requirement for documentation and transparency in a risk assessment. Japan therefore suggests that the Appellate Body should "clarify" that the Panel's documentation and transparency "test" has no

[123]European Union's third participant's submission, para. 37.
[124]Japan's third participant's submission, para. 18 (quoting Australia's appellant's submission, para. 64).
[125]Japan's third participant's submission, para. 19. (original emphasis)

basis in the text or context of Article 5.1 and is thus not relevant for purposes of determining consistency with Article 5.1.[126]

117. With respect to Australia's allegation that the Panel erred in finding Australia's measures to be inconsistent with Article 5.6 as a consequence of being inconsistent with Articles 5.1 and 5.2, Japan does not take a position on whether the Panel in fact made such a consequential finding. If, however, the Appellate Body were to find that the Panel's finding of inconsistency with Article 5.6 rested on such a "consequential determination", then Japan considers that this finding was in error.[127] Japan emphasizes that Article 5.6 sets out an obligation that is distinct from the obligations in Articles 5.1 and 5.2, and does not, in its text, refer to a risk assessment. An SPS measure may be based on a proper risk assessment, in accordance with Articles 5.1 and 5.2. If, however, this measure is more trade restrictive than necessary, this would constitute a stand-alone violation of Article 5.6. Likewise, according to Japan, an SPS measure might not be based on a proper risk assessment, in violation of Articles 5.1 and/or 5.2. Yet it could still be consistent with Article 5.6 if it were determined to be the least trade-restrictive measure to achieve the Member's appropriate level of protection.

118. Japan takes issue with the Panel's approach to the analysis under Article 5.6. Rather than assessing, as an initial matter, whether New Zealand had demonstrated that Australia's calculation of the risk resulting from the importation of New Zealand apples was exaggerated, the Panel could have analyzed New Zealand's alternative measure specifically and directly. Furthermore, the Panel's finding that "there is no reason to believe that the alternative measure suggested by New Zealand would not meet Australia's ALOP" is a "leap of logic" that cannot be considered equivalent to an affirmative showing by New Zealand that its less trade-restrictive alternative measure in fact "achieves" Australia's appropriate level of protection.[128] Thus, to the extent that the Panel relied on "doubt" as to whether the risk exceeds Australia's appropriate level of protection instead of an affirmative determination that the alternative measures would meet Australia's appropriate level of protection, Japan believes that the Panel erred in its analysis under Article 5.6.

119. Japan disagrees that New Zealand's claims under Annex C(1)(a) and Article 8 were outside the Panel's terms of reference. Rather, New Zealand identified all the measures at issue in its panel request and, by listing Annex C(1)(a), New Zealand clearly presented its concern. Accordingly, the question of whether the 17 measures at issue are inconsistent with Annex C(1)(a) and Article 8 was properly within the Panel's terms of reference, and the Panel simply needed to interpret Annex C(1)(a) and Article 8 and determine whether New Zealand had made a *prima facie* case of inconsistency.

[126]Japan's third participant's submission, para. 25.
[127]Japan's third participant's submission, para. 8.
[128]Japan's third participant's submission, para. 17 (quoting Panel Report, para. 7.1153).

Japan stresses that the question of whether a complainant has made its *prima facie* case should not be confused with the question of whether a procedural violation has occurred pursuant to Article 6.2 of the DSU, and cautions that, while due process concerns are important, it is even more important to encourage Members positively to resolve disputes rather than to engage in procedural arguments.[129]

3. United States

120. The United States disagrees with Australia's conception of an SPS measure, which the United States considers to be "completely divorced from the text of Annex A(1)" to the *SPS Agreement*.[130] The Panel determined that the legislative basis for each of the 16 measures, the procedures under which they were adopted, and the IRA, all had "general objectives" that correspond to those set out in Annex A(1)(a).[131] The Panel also looked at the 16 measures individually and found that each had a "close linkage" to the objective of controlling risks that correspond to the risks set forth in Annex A(1).[132] The Panel further analyzed the form and nature of the measures at issue and found that they fit within the definition in Annex A(1). The United States notes that, in any event, this issue "seems to be of minimal importance for purposes of this dispute".[133]

121. The United States submits that the Appellate Body should not adopt the approach to an assessment of a measure's conformity with Article 5.1 suggested by Australia. Such an approach—if adopted—would be inconsistent with findings in prior disputes, would undermine the requirement in Article 5.1 that SPS measures be based on a risk assessment, and would severely weaken a panel's ability to review the sufficiency of a risk assessment. Australia's argument that it is not within the panel's authority to review the quality of the reasoning contained in the IRA *per se*, but only the quality of the particular conclusions drawn, is inconsistent with the approach adopted by the Appellate Body in prior disputes and should not be accepted. Referring to the Appellate Body reports in *Japan – Apples* and *US/Canada – Continued Suspension*, the United States points out that the Appellate Body has explained that panels are to "assess whether the *reasoning* articulated on the basis of the scientific evidence is objective and coherent".[134] The United States further disagrees with Australia's argument that the Panel was not permitted to review anything but the IRA's ultimate conclusions. A panel's failure to conduct a full examination of a challenged risk assessment, including all intermediate steps leading to the ultimate conclusion of the assessment, would constitute

[129]Japan addressed New Zealand's other appeal in its opening remarks at the oral hearing in this appeal.
[130]United States' third participant's submission, para. 3.
[131]United States' third participant's submission, para. 5 (referring to Panel Report, paras. 7.123-7.141).
[132]United States' third participant's submission, para. 5 (referring to Panel Report, paras. 7.140 and 7.141).
[133]United States' third participant's submission, para. 6.
[134]United States' third participant's submission, paras. 14 and 15 (referring to Appellate Body Report, *Japan – Apples*, paras. 201, 203, and 205; and Appellate Body Reports, *US/Canada – Continued Suspension*, para. 591). (original emphasis)

"deliberate disregard" for the evidence and be "incompatible with a panel's duty to make an objective assessment of the facts".[135] As the facts of this dispute illustrate, when the overall probability is the result of a sequence of events, each step must be evaluated in order to make an "objective assessment", and it would be very difficult, if not impossible, for a panel properly to evaluate the ultimate conclusion without any examination of whether the intermediate steps are supported by science.

122. The United States disagrees with Australia that the Panel acted inconsistently with Article 11 of the DSU by disregarding expert testimony that was favourable to Australia's case. The United States maintains that Australia's Article 11 claim is based on the theory that a panel fails to make an objective assessment when the panel report does not include a discussion of every piece of evidence that may not be supportive of the panel's ultimate findings, or when the report does not describe in each instance why the panel placed more weight on some pieces of evidence. In the appeal in *Brazil – Retreaded Tyres*, the European Union argued that the panel had ignored relevant studies submitted by the European Union, and claimed that this was inconsistent with Article 11. Yet, maintains the United States, the Appellate Body did not require the panel to reproduce or directly cite these studies and considered that it was sufficient that the panel had cited in a footnote paragraphs of the European Union's oral statement and answers to questions that referred to these studies.[136]

123. The United States also disagrees with Australia's claim that the Panel incorrectly applied the burden of proof in its analysis under Article 5.6. The United States submits that Australia's argument ignores the second step of the Panel's analysis, in which the Panel undertook a careful review of the evidence before it in order to assess "more directly" whether New Zealand had raised a presumption that its proposed alternative measures meet Australia's appropriate level of protection. The United States disagrees with Australia that the Panel misapplied Article 5.6 and found that New Zealand had discharged this burden merely by identifying an alternative measure that "could" or "might" achieve Australia's appropriate level of protection. New Zealand's burden was to present sufficient evidence to raise a presumption of inconsistency, not to adduce evidence to establish beyond a shadow of a doubt that its argument was the correct one, as Australia seems to contend. The United States adds that the Panel Report shows that New Zealand adduced evidence sufficient to discharge this burden. Accordingly, for the United States, the Panel properly found that the alternative measure meets Australia's appropriate level of protection, just as the compliance panel in

[135]United States' third participant's submission, para. 18 (referring to Appellate Body Report, *EC – Hormones*, para. 133).
[136]United States' third participant's submission, para. 26 (referring to Appellate Body Report, *Brazil – Retreaded Tyres*, para. 190).

the *Japan – Apples* dispute found that limiting imports to mature, symptomless apples met Japan's arguably more stringent appropriate level of protection.

III. Issues Raised in This Appeal

124. The following issues are raised in this appeal:

(a) Whether the Panel erred in finding that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) to the *SPS Agreement*;

(b) Whether, in finding that the measures regarding fire blight and apple leafcurling midge ("ALCM"), as well as the "general" measures relating to these pests, are inconsistent with Articles 5.1, 5.2, and, consequently, 2.2 of the *SPS Agreement*, the Panel misinterpreted and misapplied these provisions, and more specifically:

(i) whether, in evaluating Australia's risk assessment and the consistency of Australia's SPS measures with these provisions, the Panel applied an improper standard of review;

(ii) whether, in reviewing Australia's risk assessment and its use of expert judgement at several intermediate steps, the Panel required too high a standard of transparency and documentation and, thereby, erred in its assessment of the objectivity and coherence of the reasoning of the risk assessor; and

(iii) whether the Panel erred in failing to assess the materiality of the faults it found with Australia's risk assessment, and in failing to determine whether any alleged flaws were so serious as to call into question the risk assessment as a whole;

(c) Whether the Panel failed to conduct an objective assessment of the matter before it within the meaning of Article 11 of the DSU, and in particular:

(i) whether the Panel failed to engage with or disregarded testimony of its appointed experts that was favourable to Australia; and

(ii) whether the Panel misunderstood the methodology employed in Australia's risk assessment;

(d) Whether the Panel erred in finding that the measures regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*, and more specifically:

(i) whether the Panel inappropriately relied on its findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement* in concluding that New Zealand's proposed alternative measures would achieve Australia's appropriate level of protection;

(ii) whether the Panel failed to require New Zealand to establish affirmatively the inconsistency of the measures at issue with Article 5.6 of the *SPS Agreement* because it determined only that the alternative measures "might" or "may" achieve Australia's appropriate level of protection; and

(iii) whether the Panel erred in interpreting the term "appropriate level of sanitary or phytosanitary protection", defined in Annex A(5) to the *SPS Agreement*, by focusing solely on the likelihood of entry, establishment and spread of the relevant pests without also considering the associated potential biological and economic consequences; and

(e) Whether the Panel erred in finding that New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement* are outside the Panel's terms of reference, and, if so, whether the Appellate Body can complete the legal analysis and find that Australia's measures at issue are inconsistent with the "without undue delay" obligation in Annex C(1)(a) and Article 8 of the *SPS Agreement*.

IV. The Measures at Issue and the Risk Assessment on which They were Based

A. *The Measures at Issue*

125. The following 17 measures relating to the importation of New Zealand apples into Australia were initially identified by New Zealand as the measures at issue in this dispute[137]:

Measures 1-8 relate to fire blight

Measure 1: The requirement that apples be sourced from areas free from fire blight disease symptoms.

[137]Panel Report, para. 2.91; Request for the Establishment of a Panel by New Zealand, WT/DS367/5.

Measure 2: The requirement that orchards/blocks be inspected for fire blight disease symptoms, including that they be inspected at an intensity that would, at a 95 per cent confidence level, detect visual symptoms if shown by 1 per cent of the trees, and that such inspections take place between 4 to 7 weeks after flowering.

Measure 3: The requirement that an orchard/block inspection methodology be developed and approved that addresses issues such as the 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 the training and certification of inspectors.

Measure 4: 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 or hide symptoms of fire blight.

Measure 5: The requirement that an orchard/block be suspended for the season on the basis of detection of any visual symptoms of fire blight.

Measure 6: The requirement that apples be subject to disinfection treatment in the packing house.

Measure 7: 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.

Measure 8: The requirement that packing houses registered for export of apples process only fruit sourced from registered orchards.

Measures 9-13 relate to European canker

Measure 9: The requirement that apples be sourced from export orchards/blocks free of European canker (pest free places of production).

Measure 10: The requirement that all trees in export orchards/blocks be inspected for symptoms of European canker, including that orchards/blocks in areas less conducive to disease be inspected for symptoms by walking down every row and visually examining all trees on both sides of each row, and that areas more conducive to the disease are inspected using the same procedure combined with inspection of the upper limbs of each tree using ladders (if needed), and that such inspections take place after leaf fall and before winter pruning.

Measure 11: The requirement that all new planting stock be intensively examined and treated for European canker.

Measure 12[138]**:** 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 or hide symptoms of European canker.

[138]As explained in the next paragraph of this Report, this measure is no longer at issue.

Measure 13: The requirement that exports from an orchard/block be suspended for the season on the basis of detection of European canker, with reinstatement only upon eradication of the disease, confirmed by inspection.

Measure 14 relates to ALCM

Measure 14: The requirements of inspection and treatment for ALCM, including the options of:

- inspection of each lot on the basis of a 3000-unit sample selected at random across the whole lot for ALCM, 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; or

- 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, as well as mandatory appropriate treatment of all lots.

Measures 15-17 were described by New Zealand as "general" measures

Measure 15: The requirement that Australian Quarantine and Inspection Service officers be involved in orchard inspections for European canker and fire blight, in direct verification of packing house procedures, and in fruit inspection and treatment.

Measure 16: The requirement that New Zealand ensure that all orchards registered for export to Australia operate under standard commercial practices.

Measure 17: The requirement that packing houses provide details of the layout of premises.

126. Following an agreement between the parties on Measure 12, New Zealand did not pursue its claims in respect of this measure, and the Panel did not rule on them.[139]

127. On appeal, Australia challenges the Panel's findings on the measures relating to fire blight (Measures 1-8) and ALCM (Measure 14), as well as the general measures (Measures 15-17) to the extent that they apply to these two pests. Australia does not appeal the Panel's findings on the measures relating to European canker, or the general measures (Measures 15-17) to the extent that they apply to European canker.[140] New Zealand's other appeal relating to its "without undue delay" claims concerns all of the 16 measures.[141]

[139]Panel Report, paras. 1.20 and 2.96.
[140]Notification of an Appeal by Australia, WT/DS367/13 and Corr.1 (attached as Annex I(a) and (b) to this Report).
[141]Notification of an Other Appeal by New Zealand, WT/DS367/14 (attached as Annex II to this Report).

128. As explained in further detail below, the 16 measures at issue are conditions for the importation of apples from New Zealand that have been imposed by Australia following completion of an import risk analysis.

B. *Background to the Adoption of the Measures at Issue*

129. Australia banned the importation of New Zealand apples in 1921 following the entry and establishment of fire blight[142] in Auckland in 1919.[143] New Zealand applied unsuccessfully for access to the Australian apple market in 1986, 1989, and 1995.[144] New Zealand submitted a fourth request for access in January 1999, which led to the initiation, in February 1999, of an import risk analysis by the Australian Quarantine and Inspection Service ("AQIS").[145] Following the issuance of draft risk assessments in 2000, 2004, and 2005 (as well as certain other developments, including the launch of two Senate inquiries and the restructuring of the government agencies involved[146]), in November 2006, Biosecurity Australia issued its *Final Import Risk Analysis Report for Apples from New Zealand* (the "IRA").[147] The 16 measures at issue in this dispute are among the risk management measures recommended in the IRA.[148]

130. Under Australia's current regulatory regime, the importation into Australia of fresh fruit is prohibited unless the Director of Animal and Plant Quarantine[149] has granted an import permit.[150] The Director is empowered to grant an import permit based on, among other things, the information and policy recommendations in an import risk analysis.[151] In March 2007, Australia's Director of Animal and Plant Quarantine determined that the importation of apples from New Zealand can be permitted subject to, *inter alia*, the application of the phytosanitary measures specified in the IRA.[152] The

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[142]A brief explanation of fire blight is provided *infra*, para. 134 of this Report.

[143]Panel Report, para. 2.30.

[144]Panel Report, para. 2.30.

[145]Panel Report, para. 2.31. At the time, Biosecurity Australia was part of AQIS. (See *supra*, footnote 4 of this Report)

[146]In 2004, Biosecurity Australia was created as a separate agency within the Commonwealth Department of Agriculture, Fisheries and Forestry. Biosecurity Australia was given the responsibility of reviewing and reissuing draft risk assessments in progress at that time, including the one relating to apples from New Zealand. (See Panel Report, paras. 2.32 and 7.157; and Biosecurity Australia, *Final Import Risk Analysis Report for Apples from New Zealand* (Canberra, November 2006) (the "IRA"), Part B (Panel Exhibit AUS-2), p. 8)

[147]See Panel Report, para. 2.32; and IRA, Part B, p. 8.

[148]See Request for the Establishment of a Panel by New Zealand, WT/DS367/5.

[149]The Director of Animal and Plant Quarantine is the Secretary of the Department of Agriculture, Fisheries and Forestry. (Australia's first written submission to the Panel, para. 61)

[150]Australia's biosecurity regime is set out primarily in the *Quarantine Act 1908* and its subordinate legislation, including the *Quarantine Proclamation 1998*. (Panel Report, paras. 7.124 and 7.125; Australia's appellant's submission, paras. 20 and 21)

[151]See IRA, Part B, p. 2. See also Australia's first written submission to the Panel, para. 61.

[152]Biosecurity Australia Policy Memorandum 2007/07, *Biosecurity Policy Determination – Importation of Apples from New Zealand*, 27 March 2007 (Panel Exhibit NZ-2) quoted, in relevant part, in Panel Report, para. 7.165.

standard operating procedures that New Zealand and Australia must agree upon before exports of apples can begin have yet to be agreed.[153]

C. *Relevant Aspects of the IRA and the Methodology Used*

131. The risk assessment carried out by Biosecurity Australia consisted of several stages, including pest risk assessment and pest risk management.[154] The scope of the IRA's risk assessment was the importation of mature apple fruit free of trash, either packed or sorted and graded bulk fruit from New Zealand. This was the "starting point" for the IRA's analysis.[155]

1. Pest Risk Assessment

132. The risk assessment process set out in the IRA consisted of four interrelated steps: (a) pest categorization; (b) an assessment of the probability of entry, probability of establishment, and probability of spread of the pest; (c) an assessment of the consequences associated with the pest; and (d) combining the assessment of the probability of entry, establishment and spread with the assessment of consequences to estimate the risk.[156]

(a) Pest Categorization and Pests at Issue

133. The IRA first considered whether each of a number of identified pests should be considered as a quarantine pest for which a full assessment of risk was needed.[157] Fire blight and ALCM were among the pests that qualified as quarantine pests subject to further consideration.[158]

134. Fire blight is a plant disease caused by the bacterium *Erwinia amylovora*. The disease affects apple trees, pear trees, and some other members of the *Rosaceae* family of plants.[159] In apple trees, fire blight infects flowers, young leaves, stems, and fruits. The symptoms and seriousness of infection vary, but disease development may be severe enough to result in plant death.[160] Some infected trees develop cankers (sunken areas surrounded by cracked bark) on their limbs and trunks. In warm, wet, spring conditions, cankers become active and exude a bacteria-laden ooze, which is the inoculum for

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[153]Panel Report, para. 2.33.
[154]Panel Report, para. 2.34 (quoting IRA, Part B, p. 11).
[155]Panel Report, para. 2.27 (referring to IRA, Part B, p. 9). See also IRA, Part B, p. 105.
[156]Panel Report, para. 2.35 (quoting IRA, Part B, pp. 13 and 14).
[157]Panel Report, para. 2.37 (quoting IRA, Part B, p. 14).
[158]European canker was another of the ten pests that the IRA determined required full consideration for the whole of Australia. In addition, the IRA found that six other pests required consideration for Western Australia only. (Panel Report, paras. 2.38 and 2.39 (referring to IRA, Part B, pp. 47 and 48))
[159]Panel Report, paras. 2.1 and 2.2 (referring to IRA, Part C (Panel Exhibit AUS-3), p. 105; and New Zealand's first written submission to the Panel, para. 3.46).
[160]Panel Report, para. 2.1 (referring to IRA, Part B, p. 52; and New Zealand's first written submission to the Panel, para. 3.47).

primary infection in the springtime. Cankers become inactive during the growing season, generally cease ooze production during the summer, and remain inactive until the following spring.[161] Fire blight may spread within host plants, infecting blossoms, fruits, spurs, twigs, branches, and leaves. With appropriate environmental conditions, inoculum may then be exuded from infected shoots, cankered bark, and infected fruitlets and blossoms. The inoculum may be spread by, for example, rain, insects (including bees), and wind.[162] Depending on orchard conditions, fruit can be infested[163] with low levels of *Erwinia amylovora*, when small populations of the bacteria are present on the developing flower parts. On rare occasions, an infested flower can develop into a mature apple, but bacteria are localized in the calyx (remnant of the blossom) in small numbers. In orchards with fire blight symptoms, bacteria can also be present in small numbers on the surface of an apple, but such external populations would not multiply and would tend to diminish over time.[164] Fire blight exists in New Zealand, but not in Australia.[165]

135. ALCM, or *Dasineura mali*, is a small fly, 1.5-2.5mm long, which has a lifespan of only a few days[166] and reproduces sexually.[167] Apple trees are the only hosts of ALCM.[168] Eggs laid by mated females hatch to produce immobile larvae that develop by feeding on the opening leaves of apple trees. This prevents the leaves from unfurling normally or results in curled margins of the leaves, and can result in reduced shoot and tree growth.[169] The larvae pupate, usually after having dropped to the ground. A small population of larvae may, however, lodge in and pupate on the tree, often in cracks in the bark or sometimes on the calyx- or stalk-ends of the fruit.[170] Pupating larvae spin silken cocoons from which adult ALCM emerge. The life cycle of ALCM (mating, egg-laying, larval

[161]*Erwinia amylovora* can survive the winter in infected host plants. (Panel Report, paras. 2.3 and 2.4 (referring to IRA, Part B, p. 51; Part C, pp. 110 and 111; and New Zealand's first written submission to the Panel, paras. 3.48 and 3.49))

[162]Panel Report, para. 2.5 (referring to IRA, Part B, p. 51; Part C, p. 110; and New Zealand's first written submission to the Panel, para. 3.48).

[163]Infestation refers to the epiphytic (external) existence of a pest on the surface, whereas infection refers to the endophytic (internal) occurrence of a pest in the tissue. Epiphytic infestation can occur at the stalk- and calyx-ends, and on the surface, of mature fruit. (Panel Report, footnote 151 to para. 2.6; IRA, Part B, p. 52)

[164]Panel Report, para. 2.6.

[165]Panel Report, para. 2.8 (referring to IRA, Part B, p. 51; Australia's first written submission to the Panel, para. 77; and New Zealand's first written submission to the Panel, para. 3.55). In 1997, fire blight was detected in Australia, but eradication efforts were undertaken and no further outbreaks have been reported. (Panel Report, para. 2.8 (referring to IRA, Part C, p. 107))

[166]The lifespan of ALCM was indicated as 2 to 6 days under laboratory conditions by Australia, and as 3 to 4 days under laboratory conditions and 1 to 2 days in the wild by New Zealand. (Panel Report, para. 2.21 (quoting IRA, Part B, p. 157; and New Zealand's first written submission to the Panel, para. 3.71))

[167]Panel Report, para. 2.21 (referring to IRA, Part B, p. 157; and New Zealand's first written submission to the Panel, para. 3.71).

[168]Panel Report, para. 2.20 (referring to IRA, Part C, p. 121; and New Zealand's first written submission to the Panel, para. 3.69).

[169]Panel Report, para. 2.21 (referring to New Zealand's first written submission to the Panel, para. 3.72).

[170]Panel Report, para. 2.22.

growth, pupation, and adult emergence) is usually repeated several times a year.[171] ALCM is presumed to be native to Europe and is found in cool to temperate apple-producing regions, including in New Zealand. Australia is free from ALCM.[172]

(b) Assessment of the Probability of Entry, Establishment and Spread

136. For the quarantine pests in respect of which it had determined that a risk assessment was needed, the IRA set out its methodology for assessing the annual probability of entry, probability of establishment, and probability of spread of that pest in Australia. As explained below, there were some differences in the methodology used for pathogens (for example, bacteria and viruses), including fire blight, and the methodology used for arthropod pests, including ALCM. For both, the assessment was quantitative in nature, and based on the assumption that apples would be "imported from New Zealand for 12 months without phytosanitary measures".[173] The IRA estimated that the volume of apple imports from New Zealand would be between 50 million and 400 million apples per year, with a most likely volume of 150 million.[174] As with this estimate, most of the events for which the IRA made quantitative estimates were expressed as *probability intervals*, rather than as single numbers. As explained further below, the IRA also employed *probability distributions* to pinpoint a value within each interval. The values assigned to the various steps and factors were based on the scientific evidence reviewed by the IRA as well as on the expert judgement of the IRA team (the "IRA expert judgement").[175]

(i) *Assessment for Pathogens (Including Fire Blight)*

137. The IRA's assessment of the *probability of entry* consisted of three parts: (i) an estimation of the *probability of importation* into Australia of an apple infested or infected with the pest; (ii) an estimation of *proximity*, that is, the likelihood that major handlers and users of apples ("utility points"[176]) would be located sufficiently close to pest hosts ("exposure groups") for transfer of pests

[171]Panel Report, para. 2.23.
[172]Panel Report, para. 2.25 (referring to New Zealand's first written submission to the Panel, para. 3.80).
[173]Panel Report, para. 2.56 (quoting IRA, Part B, p. 40).
[174]Panel Report, para. 7.503 (referring to IRA, Part B, pp. 17-19; and Australia's first written submission to the Panel, paras. 98 and 99).
[175]Whenever the IRA team established to assess the risk associated with the importation of apples from New Zealand, which ultimately consisted of six individuals, determined that there was scientific uncertainty, the IRA team itself exercised expert judgement to reach conclusions. Australia explained to the Panel that the IRA expert judgement was "used when there [was] limited evidence or where the underlying biological process is naturally highly variable". (Panel Report, para. 7.438 (quoting Australia's response to Panel Question 30 after the second Panel meeting, para. 162). See also paras. 7.433 and 7.746; and IRA, Part B, pp. 42 and 167)
[176]Utility points are "key points ... at which apples are distributed or utilised and at which apple waste will be generated". (IRA, Part B, p. 25)

from imported apples to susceptible host plants to take place[177]; and (iii) an estimation of *exposure*, that is, the likelihood of transfer of a pest from an infested or infected apple to a susceptible host plant.[178] In its analysis, the IRA assumed that any exposure of the pathogen to a susceptible host would take place only from infested or infected apples discarded as *waste*, rather than via any other pathway.[179]

138. The IRA calculated the *probability of importation* using two key concepts: (i) eight importation steps; and (ii) ten importation scenarios.[180] Each importation step represents a discrete point in the journey that apples will make in travelling from the orchard in New Zealand to arrival in Australia.[181] The IRA assigned a probability value to each importation step, representing the proportion of apples that would be infested or infected with the relevant pest at that point ("importation step value").[182] The "importation scenarios" represent a number of different ways of combining these importation steps.[183] In each importation scenario, the initiating step "is the sourcing

[177]Panel Report, paras. 2.44 and 7.377 (referring to IRA, Part B, p. 29).

[178]Panel Report, para. 2.45 (referring to IRA, Part B, p. 27).

[179]IRA, Part B, p. 33.

[180]The IRA refers to importation scenarios also as "biological pathway scenarios" and "importation pathways".

[181]Panel Report, para. 2.41. The importation steps used in the IRA are:

- Importation step 1 (Imp1): the proportion of New Zealand orchards in which the pest is present;
- Importation step 2 (Imp2): the proportion of fruit coming from an infected or infested orchard in New Zealand that is infected or infested with the pest;
- Importation step 3a (Imp3a): the proportion of clean fruit from infected or infested orchards in New Zealand that is contaminated by the pest during picking and transport to the packing house;
- Importation step 3b (Imp3b): the proportion of clean fruit from uninfected or uninfested orchards in New Zealand that is contaminated by the pest during picking and transport to the packing house;
- Importation step 4 (Imp4): the proportion of infected or infested fruit that remains infected or infested by the pest after routine processing procedures in the packing house;
- Importation step 5 (Imp5): the proportion of clean fruit that is contaminated by the pest during processing in the packing house;
- Importation step 6 (Imp6): the proportion of infected or infested fruit that remains infected or infested by the pest during palletization, quality inspection, containerization and transportation to Australia;
- Importation step 7 (Imp7): the proportion of clean fruit that is contaminated by the pest during palletization, quality inspection, containerization and transportation to Australia; and
- Importation step 8 (Imp8): the proportion of infected or infested fruit that remains infected or infested by the pest after on-arrival minimum border procedures for the unrestricted analyses.

These definitions refer to the *likelihood* of infection or infestation at each importation step. However, in this Report, we use the term "importation step" to refer only to a particular point in the journey of an apple from New Zealand to Australia, and the term "importation step value" to refer to the likelihood associated with each such importation step.

[182]Panel Report, para. 2.41 (quoting IRA, Part B, p. 21).

[183]The IRA explains that each "biological pathway", or "importation scenario", is an "ordered sequence of steps undertaken in sourcing, processing and exporting a commodity up to the point where it is released from quarantine by the importing country". (Panel Report, para. 2.42 (quoting IRA, Part B, p. 19))

of apples from orchards in New Zealand and the end-point is the arrival in Australia of infected or infested fruit or packaging materials."[184] Since, however, the scenarios include the possibility of contamination of clean fruit at certain importation steps (importation steps 3, 5, and 7), as well as the possibility that the pest is eliminated at certain other steps (importation steps 4, 6, and 8), only one importation scenario is a simple sequence of importation steps representing an apple that was infested or infected in the orchard in New Zealand and remained infested or infected upon release from quarantine in Australia. The remaining nine importation scenarios represent different combinations of those importation steps, or different scenarios as to how an apple may become or cease to be infested or infected during the process of importation.[185] The probabilities associated with each of the ten individual importation scenarios were added to arrive at the overall probability of importation of an apple infested or infected with the relevant pest.[186]

139. Turning to the other two elements of the IRA's analysis of the probability of entry, first, with regard to *proximity*, the IRA estimated the likelihood that a utility point is located sufficiently close to an exposure group for some likelihood of transfer of the pest to a susceptible host plant to exist. The IRA accordingly combined five utility points—namely, orchard packing house/wholesalers, urban packing house/wholesalers, retailers, food service industries, and consumers[187]—and four exposure groups—namely, susceptible commercial fruit crops, susceptible nursery plants, susceptible household and garden plants, and susceptible wild and amenity species[188]—and assigned point estimates or probability ranges to the resulting 20 different combinations.

140. Second, with regard to *exposure*, the IRA explained that it is a complex variable dependent on a number of factors, such as viability of the pest, survival mechanism of the pest, transfer mechanism(s) of the pest, host receptivity, and environmental factors.[189] The IRA noted that a sequence of events needs to be completed for successful exposure of host plants to the pest carried by infested or infected apples, and analyzed key steps in such sequence of events.[190]

141. The next step in the IRA's methodology was to estimate the probabilities of *establishment* and *spread* of the pest in Australia for each of the four exposure groups.[191] This involved examination of a number of biological factors associated with the likelihood that a pest will successfully propagate on or in a susceptible host (establishment) and disperse from there within the larger population of

[184]Panel Report, para. 2.42 (quoting IRA, Part B, p. 19).
[185]Panel Report, paras. 2.42 and 2.43 (referring to IRA, Part B, p. 19).
[186]Panel Report, para. 2.43 (referring to IRA, Part B, p. 23).
[187]Panel Report, para. 2.44 (referring to IRA, Part B, p. 25).
[188]Panel Report, para. 2.45 (referring to IRA, Part B, pp. 28 and 29).
[189]Panel Report, para. 2.45 (referring to IRA, Part B, p. 27).
[190]Panel Report, para. 7.381 (quoting IRA, Part B, p. 27). See also IRA, Part B, p. 85.
[191]Panel Report, para. 2.51; IRA, Part B, pp. 31-33.

susceptible hosts (spread).[192] The IRA considered various factors in order to estimate the probability of establishment[193] and the probability of spread[194], explaining that, in doing so, it was following international guidelines for risk analysis.[195]

142. Lastly, the IRA generated an overall estimate of the annual probability of entry, establishment and spread by combining the various probability values that it had assigned to the various steps, along with the estimated volume of apples, in a computer program called @Risk (Palisade Corporation, 2007).[196]

(ii) *Assessment for Arthropods (Including ALCM)*

143. With regard to arthropod pests, the methodology used to assess the probability of entry, establishment and spread differed slightly from that used for pathogens, to take account of the fact that such pests are mobile and that a mating pair would be needed to establish a population.[197] Accordingly, the IRA focused on the number of infested apples that could be at a particular location at the same time rather than, as it had done for pathogens, on following individual apples through the distribution chain. The assessment of the probability of entry, establishment and spread of arthropods involved five steps: steps one and two were estimations of the probability of importation and of the

[192]Panel Report, para. 2.47; IRA, Part B, pp. 17 and 29.

[193]Probability of establishment was derived from a comparative assessment of: availability of suitable hosts, alternate hosts and vectors in the pest risk analysis area; suitability of the environment; cultural practices and control measures; and other characteristics of the pest relevant to the probability of establishment. (Panel Report, para. 2.48 (referring to IRA, Part B, p. 30))

[194]Probability of spread was derived from a comparative assessment of: suitability of the natural and/or managed environment for natural spread of the pest; presence of natural barriers; the potential for movement with commodities or conveyances; intended use of the commodity; potential vectors of the pest in the pest risk analysis area; and potential natural enemies of the pest in the pest risk analysis area. (Panel Report, para. 2.49 (referring to IRA, Part B, p. 31))

[195]International Standards for Phytosanitary Measures ("ISPM"s) are adopted by the Commission on Phytosanitary Measures, which governs the International Plant Protection Convention (the "IPPC"). The IPPC is an international treaty to secure action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control. Two ISPMs, *Pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms*, 2004 (ISPM No. 11, FAO, Rome (Panel Exhibit AUS-6) ("ISPM No. 11"), together with *Framework for pest risk analysis*, 2007 (ISPM No. 2, FAO, Rome) ("ISPM No. 2"), present the general framework for conducting a pest risk assessment. (Panel Report, paras. 2.69 and 2.71)

[196]According to the Panel:

> A Monte Carlo stochastic (random) simulation model was used with @Risk, based on random sampling from the set of values. The @Risk software selected a number from within each probability range, taking into account the shape of the range, to represent the likelihood of an event occurring; it did this thousands of times to produce an output in the form of a distribution representing the annual probability of entry, establishment and spread. The 5 per cent, median and 95 per cent values of the range were included in the [IRA].

(Panel Report, para. 2.64 (referring to Australia's first written submission to the Panel, paras. 90 and 106; and New Zealand's first written submission to the Panel, para. 4.190). See also IRA, Part B, pp. 35 and 97)

[197]Panel Report, para. 2.50; IRA, Part B, pp. 33-35.

distribution of infested apples to utility points, which were the same as in the analysis for pathogens. In step three, called a "scenario analysis", the IRA estimated the number of infested apples that could be at a particular location at the same time.[198] In step four, the estimated numbers obtained in step three were combined with the pest's ability to establish and spread, and the IRA estimated the partial probability of entry, establishment and spread for each combination of a utility point and an exposure group, resulting in 20 partial probabilities of entry, establishment and spread.[199] Step five, the process of combining these partial probabilities using the @Risk program, was similar to that used for pathogens.

(c) Assessment of Consequences

144. The IRA assessed the potential biological, economic, social, and environmental effects of a pest by dividing such effects into two categories: direct criteria[200]; and indirect criteria.[201] For each criterion, the IRA estimated the impact of a pest or disease at four levels—local, district, regional, and national—and described such impact in qualitative terms—"unlikely to be discernible", "of minor significance", "significant", or "highly significant".[202] The IRA then used a correspondence table to convert those qualitative terms into impact scores, ranging from the least significant consequences, "A", to the most significant consequences, "G".[203] Individual impact scores were then evaluated based on certain "decision rules" set forth in the IRA[204], to arrive at an overall conclusion on the potential biological and economic consequences. The overall conclusion was expressed in qualitative terms, namely, "negligible", "very low", "low", "moderate", "high", or "extreme".[205]

(d) Combining the Estimated Probability of Entry, Establishment and Spread with the Estimate of Consequences

145. As indicated above, the IRA combined a quantitative assessment of the probability of entry, establishment and spread with a qualitative assessment of potential consequences, which Australia describes as a "semi-quantitative approach".[206]

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[198]Panel Report, para. 2.50 (quoting IRA, Part B, p. 33).
[199]Panel Report, para. 2.50; IRA, Part B, pp. 34 and 35.
[200]The direct criteria were: plant life or health; human life or health; and any other aspects of environmental effects. (Panel Report, para. 2.53 (quoting IRA, Part B, p. 36))
[201]The indirect criteria were: control or eradication; domestic trade and international trade; environment; and communities. (Panel Report, para. 2.54 (quoting IRA, Part B, p. 37))
[202]Panel Report, para. 2.55; IRA, Part B, pp. 38 and 39.
[203]Panel Report, para. 7.458.
[204]IRA, Part B, pp. 39 and 40.
[205]Panel Report, para. 2.55 (quoting IRA, Part B, pp. 39 and 40).
[206]Panel Report, para. 2.61 (quoting IRA, Part B, p. 11).

146. When assigning quantitative values to the likelihoods associated with the importation steps and the factors relating to proximity, exposure, establishment and spread, the IRA used both point values (a single number) and, more frequently, probability intervals or ranges.[207] These were based on the scientific evidence and resources, as well as on the IRA expert judgement. Three types of probability distributions were used in connection with the probability intervals: uniform, triangular, and pert.[208] All three distributions have a maximum and a minimum value. Triangular and pert distributions also have a third parameter: a most likely value.[209] In a uniform distribution, in contrast, each value in the continuous range between these minimum and maximum values occurs with equal probability. The IRA states that uniform distribution was used where there was insufficient information to determine a most likely value.[210]

147. To combine the quantitative estimates of the overall probability of entry, establishment and spread with the qualitative description of the potential overall consequences of the pest, the IRA established a correspondence between the quantitative values and qualitative likelihood ratings, as set out in the "nomenclature" table reproduced below. The IRA then used a "risk estimation matrix" to combine the resulting qualitative likelihood rating with the qualitative consequences rating to yield an overall determination of the "unrestricted risk"[211] associated with each pest if apples from New Zealand were imported into Australia for 12 months without any phytosanitary measures.[212] This matrix generates one of six possible results: negligible risk, very low risk, low risk, moderate risk, high risk, or extreme risk.

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[207]In most cases, the IRA selected an interval from a set of six pre-defined quantitative ranges suggested in Biosecurity Australia's 2001 draft *Guidelines for import risk analysis*, although the IRA team was not constrained to do so. (Panel Report, para. 2.65 (referring to IRA, Part B, p. 42; and *Guidelines for import risk analysis* (Draft, Canberra, September 2001) (Panel Exhibit AUS-17))) These intervals are the ones set out in the third column of Table 12 at page 43 of Part B of the IRA, reproduced *infra*, para. 147 of this Report.

[208]Panel Report, para. 2.66 (referring to IRA, Part B, p. 42).

[209]The triangular distribution is not necessarily symmetric, but can be skewed by placing the most likely value towards either minimum or maximum value and was used when information on the most likely value was available. Like the triangular distribution, the pert distribution has minimum and maximum values and a most likely value. However, unlike the triangular distribution, "[t]he [p]ert distribution generates a smooth distribution curve that ... places progressively more emphasis on values close to the most likely value." The pert distribution was used only to model the projected volume of New Zealand apples imported to Australia. (Panel Report, paras. 2.66 (referring to IRA, Part B, p. 42) and 7.493 (referring to Dr. Schrader's response to Panel Question 135, Panel Report, Annex B-1, para. 783))

[210]Panel Report, para. 2.66 (referring to IRA, Part B, p. 42).

[211]The IRA defines risk as "a function of the likelihoods of an event occurring and the consequences or impact resulting from that event". (IRA, Part B, p. 40)

[212]Panel Report, para. 2.56 (quoting IRA, Part B, p. 40).

Nomenclature for Qualitative Likelihoods Used by the IRA

Likelihood	Qualitative descriptors	Probability interval	Midpoint (if uniform distribution)
High	The event would be very likely to occur	$0.7 \rightarrow 1$	0.85
Moderate	The event would occur with an even probability	$0.3 \rightarrow 0.7$	0.5
Low	The event would be unlikely to occur	$5 \times 10^{-2} \rightarrow 0.3$	0.175
Very low	The event would be very unlikely to occur	$10^{-3} \rightarrow 5 \times 10^{-2}$	2.6×10^{-2}
Extremely low	The event would be extremely unlikely to occur	$10^{-6} \rightarrow 10^{-3}$	5×10^{-4}
Negligible	The event would almost certainly not occur	$0 \rightarrow 10^{-6}$	5×10^{-7}

Source: Australia's appellant's submission, para. 42; IRA, Part B, Table 12, p. 43.

Risk Estimation Matrix Used by the IRA[213]

Likelihood of entry, establishment and spread							
	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
		Negligible	*Very low*	*Low*	*Moderate*	*High*	*Extreme*

Consequences of entry, establishment and spread

Source: Australia's appellant's submission, para. 45; IRA, Part B, Table 11, p. 41.

2. Pest Risk Management

148. According to the IRA, risk management is the process of identifying and implementing measures to mitigate risks of the pest so as to achieve Australia's appropriate level of protection.[214]

[213]Australia's appropriate level of protection of "very low risk" is indicated in white.
[214]Panel Report, para. 2.58 (quoting IRA, Part B, p. 41).

The IRA expresses Australia's appropriate level of protection as "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero".[215] Thus, if the unrestricted risk identified through the risk estimation matrix was "negligible" or "very low", it did not exceed Australia's appropriate level of protection, and risk management measures were not required. In contrast, if the unrestricted risk was "low", "moderate", "high", or "extreme", it exceeded Australia's appropriate level of protection, and thus risk management measures would be required.[216] In such circumstances, the IRA used the same risk assessment methodology to assess the effects of, and risk associated with, potential risk management measures.[217]

D. *The IRA's Conclusions on Fire Blight*

1. Pest Risk Assessment

(a) Assessment of Probability of Entry, Establishment and Spread

149. The IRA assigned an importation step value of 1 (100 per cent) to importation steps 1 and 8, and importation step values based on probability intervals and triangular distribution to the other six importation steps.[218] Inserting these values into the ten different importation scenarios, the IRA estimated the overall probability of importation of apples infested with *Erwinia amylovora* to be 3.9 per cent of the total number of apples that would be imported from New Zealand annually.[219]

150. With regard to proximity[220], the IRA estimated the likelihood, for each exposure group, that a utility point is sufficiently close to a susceptible host plant for there to be some likelihood of transfer of *Erwinia amylovora*. In considering the combinations of five utility points and four exposure groups[221], the IRA determined, for the combination of orchard wholesalers and commercial fruit crops, that the proportion of utility points sufficiently close to susceptible host plants in the exposure group is 1 (100 per cent), whereas, for the other 19 combinations, the IRA determined probability intervals, with various minimum and maximum values, all of which were combined with uniform

[215]Panel Report, para. 2.59 (quoting IRA, Part B, p. 4).
[216]Panel Report, para. 2.59 (referring to IRA, Part B, p. 41).
[217]IRA, Part B, p. 41.
[218]Panel Report, paras. 7.255, 7.266, 7.283, 7.298, 7.311, 7.326, 7.338, and 7.347 (referring to IRA, Part B, pp. 54, 65, 71, 77, 79, and 80).
[219]More specifically, having inserted its probability estimates into the risk simulation model, the probability of importation was estimated by the IRA as "3.9×10^{-2} (mean), 2.2×10^{-2} (5^{th} percentile) and 5.6×10^{-2} (95^{th} percentile)". (Panel Report, para. 7.353 (quoting IRA, Part B, p. 80))
[220]As described above, proximity is the likelihood that major handlers and users of apples (utility points) would be located sufficiently close to pest hosts (exposure groups) for transfer of pests from imported apples to host plants to take place.
[221]Panel Report, paras. 2.44 and 2.45 (referring to IRA, Part B, pp. 24-29). The five utility points and four exposure groups are described *supra*, para. 139 of this Report.

distribution.[222] The IRA further considered two alternative scenarios regarding proximity. Under the first scenario, 70 to 100 per cent of imported apples would be distributed to orchard packing houses and the remainder to urban wholesalers, while under the second scenario, only 0.1 to 5 per cent of imported apples would be distributed to orchard packing houses.[223]

151. With regard to exposure[224], the IRA assigned, to each of the 20 combinations of five utility points and four exposure groups, an exposure value for an individual apple consisting of a range with a minimum value of 0 and a maximum value of 10^{-6}, using uniform distribution.[225] The IRA explained that this range was based on the IRA's views on both mechanical[226] and insect mediated[227] transmission, and explicitly acknowledged "that in some circumstances the chances of exposure would be zero".[228]

152. The IRA then estimated the partial probability of establishment and the partial probability of spread for each of the four exposure groups. All eight partial probabilities—four for establishment and four for spread—were described as a probability interval with a uniform distribution.[229] Subsequently, using the @Risk program, the IRA combined the partial probability of establishment, the partial probability of spread, the probability of importation, and the estimated volume of apples, so as to calculate the overall probability of entry, establishment and spread.[230] Using the two scenarios regarding proximity described above[231], the IRA generated two probability values[232], both of which fell within the category of "very low" in the IRA's nomenclature.[233]

(b) Assessment of Consequences

153. The IRA assigned the following impact scores in its assessment of the potential consequences of the entry, establishment and spread of fire blight in Australia: (i) for the direct consequences, the

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[222]Panel Report, para. 7.377 (referring to IRA, Part B, p. 85).

[223]Panel Report, para. 7.377 (referring to IRA, Part B, pp. 25, 26, and 97).

[224]As described above, exposure is the likelihood of transfer of a pest from an infested apple to a susceptible host plant.

[225]Panel Report, para. 7.381.

[226]Mechanical transmission refers to transmission through, for example, exposure of workers and equipment to the pest. (Panel Report, para. 7. 398 (quoting IRA, Part B, pp. 87 and 88))

[227]Insect mediated transmission refers to a transfer of bacteria to a susceptible host plant by insects that have browsed on discarded apples. (Panel Report, para. 7. 398 (quoting IRA, Part B, pp. 87 and 88))

[228]Panel Report, para. 7.381 (quoting IRA, Part B, p. 90).

[229]Panel Report, para. 7.426 (referring to IRA, Part B, pp. 95-97).

[230]Panel Report, para. 7.427 (referring to IRA, Part B, p. 97).

[231]*Supra*, para. 150 of this Report.

[232]The 5 per cent, median, and 95 per cent values generated were: 9.1×10^{-3}, 4.5×10^{-2}, and 0.18, under the first scenario, and 8.7×10^{-3}, 4.4×10^{-2}, and 0.18 under the second scenario. The Panel described these two sets of probability values as "almost identical". (Panel Report, para. 7.432; IRA, Part B, Table 21, p. 97)

[233]Panel Report, para. 7.427 (referring to IRA, Part B, p. 97).

IRA assigned an "F"[234] to the effects on plant life or health, and an "A"[235] to the effects on human life or health and on any other aspects of the environment[236]; and (ii) for the indirect consequences, the IRA assigned an "E"[237] to control and eradication, and to impact on the domestic industry, a "D"[238] to the effects on international trade and on communities, and an "A" to effects on the environment.[239] The IRA applied its decision rules[240] in combining those allocated impact scores to arrive at the outcome that the overall potential biological and economic consequences of fire blight were "high".[241]

(c) Combining the Estimated Probability of Entry, Establishment and Spread with the Estimate of Consequences

154. At the end of its assessment of risk, the IRA combined the overall probability of entry, establishment and spread ("very low") with the estimate of consequences ("high") using the risk estimation matrix. In accordance with the matrix, the IRA concluded that the unrestricted risk of fire blight was "low".[242]

2. Pest Risk Management

155. Since the unrestricted risk of fire blight was "low" and thus exceeded Australia's appropriate level of protection, the IRA proceeded to the stage of risk management. Because the IRA considered that the unrestricted risk was influenced by, in particular, the number of infested or infected apples at importation steps 2, 3, 4, and 5, the IRA focused on measures that could reduce the likelihood allocated to these steps.[243] Using its risk assessment methodology, the IRA considered four risk mitigation options: (i) sourcing apples for export from individual orchards free from fire blight disease symptoms; (ii) chlorine or other suitable disinfection treatment; (iii) cold storage of apples for six weeks prior to export; and (iv) systems approaches, that is, combinations of two or more of

[234]"F" means "significant" with regard to national consequences, and "highly significant" with regard to regional, district, and local consequences. (IRA, Part B, p. 39)
[235]"A" means "unlikely to be discernible" with regard to all national, regional, district, and local consequences. (IRA, Part B, p. 39)
[236]Panel Report, para. 7.459 (referring to IRA, Part B, p. 100).
[237]"E" means "minor" with regard to national consequences, "significant" with regard to regional consequences, and "highly significant" with regard to district and local consequences. (IRA, Part B, p. 39)
[238]"D" means "unlikely to be discernible" with regard to national consequences, "minor" with regard to regional consequences, "significant" with regard to district consequences, and "highly significant" with regard to local consequences. (IRA, Part B, p. 39)
[239]Panel Report, para. 7.460 (referring to IRA, Part B, pp. 100-104).
[240]The IRA has preset conversion criteria. In the analysis for fire blight, the IRA applied the rule that, where the consequences of a pest with respect to a single criterion are "F" and the consequences of a pest with respect to remaining criteria are not unanimously "E", the overall consequences are considered to be "high". (IRA, Part B, p. 40)
[241]Panel Report, para. 7.461 (referring to IRA, Part B, p. 104).
[242]Panel Report. para. 7.462 (referring to IRA, Part B, pp. 104 and 105).
[243]Panel Report, para. 2.106; IRA, Part B, pp. 105-107.

these options.[244] The IRA concluded that none of the individual options would sufficiently reduce risk by itself, but that the combination of sourcing apples from orchards free of fire blight symptoms and disinfection would reduce the risk to "very low", that is, within Australia's appropriate level of protection.[245]

E. *The IRA's Conclusions on ALCM*

1. Pest Risk Assessment

(a) Assessment of Probability of Entry, Establishment and Spread

156. The IRA assigned an importation step value of 1 (100 per cent) to importation steps 1 and 8, and an importation step value of zero to importation steps 5 and 7. For the other four importation steps, importation step values were determined as probability intervals, two with triangular distribution and two with uniform distribution.[246] Using these values, the IRA estimated the overall probability of importation of apples infested with ALCM to be 4.1 per cent of the total number of apples that would be imported from New Zealand annually.[247] In addition to this estimation of the likelihood of importation (the "original estimation") for ALCM, the IRA also used an alternative method to estimate the overall probability of importation, which was based on data submitted by New Zealand to Biosecurity Australia in 2005 (the "August 2005 data"). Using these figures, the IRA calculated the likelihood of importation of infested apples as 0.13 per cent of the total number of apples that would be imported from New Zealand annually.[248] In the subsequent steps of its analysis, the IRA considered both sets of data.

157. With regard to proximity, the IRA again considered each of the combinations of five utility points and four exposure groups.[249] The IRA determined, for the combination of orchard wholesalers and commercial fruit crops, that the proportion of utility points sufficiently close to susceptible host plants in the exposure group was 1 (100 per cent), whereas, for the other 19 combinations, the IRA determined probability intervals with various minimum and maximum values, all of which were

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[244]IRA, Part B, p. 106.
[245]IRA, Part B, pp. 114-116; see also Panel Report, para. 2.91.
[246]IRA, Part B, pp. 159-166.
[247]More specifically, having inserted its probability estimates into the risk simulation model, the probability of importation was estimated as "4.1×10^{-2} (mean), 2.1×10^{-2} (5^{th} percentile) and 6.5×10^{-2} (95^{th} percentile)". (IRA, Part B, p. 165; see also Panel Report, para. 7. 1360)
[248]More specifically, the IRA approximated the information provided by New Zealand as a triangular distribution with a minimum value of 10^{-3}, a most likely value of 1.3×10^{-3}, and a maximum value of 3.8×10^{-3}. (IRA, Part B, p. 166)
[249]Panel Report, paras. 2.44 and 2.45 (referring to IRA, Part B, pp. 25-29).

combined with uniform distribution.[250] Here, the IRA specifically mentioned that the estimated likelihoods were determined by IRA expert judgement.[251]

158. With regard to the transfer of ALCM to host plants from the utility point, the IRA noted that only adult insects' flight enables transfer of the pest from the fruit or packaging to the environment surrounding a utility point.[252] The IRA further explained that a successful transfer of ALCM from infested fruit to a host plant requires that a female, after having emerged from her cocoon, attracts and mates with a male, and lays her eggs on a susceptible host plant during her short lifespan; and that a sufficient number of those eggs survive and hatch.[253]

159. To calculate the number of infested fruit arriving at each combination of a utility point and an exposure group, the IRA made two sets of estimates for the 20 combinations of five utility points and four exposure groups, one set based on its original estimation and the other on the August 2005 data.[254] In addition, as it did with fire blight, the IRA further considered two scenarios relating to the proportion of imported apples that would be distributed to orchard packing houses.[255]

160. The IRA then estimated, for each of the 20 combinations of five utility points and four exposure groups, a partial probability of entry, establishment and spread. The IRA again generated two data sets using, for the likelihood of importation, both its original estimation and the August 2005 data. All forty probabilities were presented as intervals combined with uniform distribution.[256]

161. Using @Risk, the IRA combined the partial probabilities of entry, establishment and spread so as to calculate the overall probability of entry, establishment and spread based on the original estimation and the August 2005 data, respectively. The probability ranges generated for the two scenarios corresponded to a qualitative likelihood of entry, establishment and spread of "high"[257] (using the original estimation) and "moderate"[258] (using the August 2005 data) in the IRA's nomenclature.

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[250]IRA, Part B, p. 168.
[251]Panel Report, para. 7.803 (referring to IRA, Part B, p. 167).
[252]IRA, Part B, p. 171.
[253]IRA, Part B, p. 171.
[254]IRA, Part B, pp. 171-174.
[255]*Supra*, para. 150 of this Report.
[256]IRA, Part B, p. 179. The IRA states that "[t]hese estimates are based on expert opinion taking into account" the factors identified in its analysis, and discusses issues and evidence relevant to the likelihoods, both in general and for specific utility points. (*Ibid*., p. 178)
[257]The 5 per cent, median, and 95 per cent values generated were: 0.56, 0.73, and 0.89. (IRA, Part B, p. 183)
[258]The 5 per cent, median, and 95 per cent values generated were: 0.33, 0.51, and 0.68. (IRA, Part B, p. 183)

(b) Assessment of Consequences

162. The IRA assigned the following impact scores in its assessment of the potential consequences of the entry, establishment and spread of ALCM in Australia: (i) for the direct consequences, the IRA assigned a "D"[259] to the effects on plant life or health, and an "A"[260] to the effects on human life or health and on any other aspects of the environment[261]; and (ii) for the indirect consequences, the IRA assigned a "D" to the effects on control and eradication, on domestic industry, and on international trade[262], and a "B"[263] to the effects on the environment and on communities.[264] The IRA applied its decision rules[265] to the combination of those allocated impact scores, and concluded that the overall potential biological and economic consequences associated with ALCM were "low".[266]

(c) Combining the Estimated Probability of Entry, Establishment and Spread with the Estimate of Consequences

163. Finally, the IRA combined the overall probability of entry, establishment and spread with the estimate of consequences using the risk estimation matrix. The overall probability of entry, establishment and spread of ALCM was "high" (using the original estimation) and "moderate" (using the August 2005 data), and the estimate of consequences was "low". Based on these ratings, the IRA concluded that the overall unrestricted risk of ALCM was "low" for both data sets.[267]

2. Pest Risk Management

164. Since the unrestricted risk of ALCM was "low" and thus exceeded Australia's appropriate level of protection, the IRA proceeded to the stage of risk management. The IRA focused on two principal options to reduce risk: (i) inspection of apples coupled with remedial action when the inspection finds pests; and (ii) mandatory treatment of all apples. Noting that ALCM is highly visible, and that fumigation is assumed to be 100 per cent effective in killing it, the IRA considered

[259]As described above, "D" means "unlikely to be discernible" with regard to national consequences, "minor" with regard to regional consequences, "significant" with regard to district consequences, and "highly significant" with regard to local consequences. (IRA, Part B, p. 39)

[260]As described above, "A" means "unlikely to be discernible" with regard to all national, regional, district, and local consequences. (IRA, Part B, p. 39)

[261]IRA, Part B, pp. 184 and 185.

[262]Panel Report, para. 7.883; IRA, Part B, pp. 185 and 186.

[263]"B" means "unlikely to be discernible" with regard to national, regional, and district consequences, and "minor" with regard to local consequences. (IRA, Part B, p. 39)

[264]IRA, Part B, pp. 186 and 187.

[265]In the analysis for ALCM, the IRA applied the rule that, where the consequences of a pest with respect to one or more criteria are "D", the overall consequences are considered to be "low". (IRA, Part B, p. 40)

[266]Panel Report, para. 7.878 (quoting IRA, Part B, p. 187).

[267]IRA, Part B, pp. 187 and 188.

whether an inspection of 600 fruit from each lot[268], followed by fumigation or destruction of lots or consignments found to contain ALCM, would sufficiently reduce the risk.[269] The IRA recalculated the probability of entry, establishment and spread for this restricted risk scenario, using the data relied upon for its original estimation of likelihood of importation, and concluded that the measure would reduce this likelihood to "extremely low". When combined with "low" consequences in the risk estimation matrix, the overall risk associated with this measure was determined to be "negligible", that is, within Australia's appropriate level of protection.[270] The IRA also noted that this analysis predicted that ALCM will be detected in "practically every" lot, which would result in fumigation of every lot. The IRA went on to consider the efficacy of this risk management measure at different pest infestation rates. In particular, the IRA considered a "worst case" scenario in which, with an infestation rate of 0.17 per cent, inspection of a 600-fruit sample would allow lots to pass undetected, meaning that the overall likelihood of importation of infested apples would be 0.06 per cent. When this number was used in the overall calculation, the result was that the restricted risk would exceed Australia's appropriate level of protection.[271] Noting that this "worst case" infestation level fell within the range of the August 2005 data provided by New Zealand, the IRA tested the relationships between sample sizes and infestation rates at the high and low ends of the data provided by New Zealand. On the basis of this analysis, the IRA then considered an inspection of 3000 fruit from each lot, and concluded that the combination of a 3000-fruit inspection and suitable treatment or rejection of lots where ALCM was found would reduce the risk to "very low", within Australia's appropriate level of protection.[272] The IRA also identified an alternative risk management measure that would sufficiently reduce the risk, namely, treatment (fumigation) of all lots to kill ALCM[273], combined with a 600-fruit inspection.[274]

[268]The IRA defines "lot" as "all apple fruit packed for export to Australia each day by a registered packing house" and, thus, the Panel noted that "a 'lot' is not a fixed quantity". (Panel Report, para. 7.1347 (quoting IRA, Part B, p. 342)) However, when considering the risk management measures for ALCM, the IRA referred to a lot size of 20,000 fruit and mentioned that variations in lot size had made very little difference to the probabilities that an infested apple remains infested after inspection and fumigation. (IRA, Part B, p. 188)

[269]Panel Report, para. 7.1301 (quoting IRA, Part B, p. 188).

[270]Panel Report, para. 7.1301 (quoting IRA, Part B, p. 190); IRA, Part B, p. 189.

[271]Panel Report, para. 7.1302 (quoting IRA, Part B, p. 190).

[272]Panel Report, para. 7.1303 (quoting IRA, Part B, p. 191).

[273]Panel Report, para. 7.1305 (quoting IRA, Part B, p. 192).

[274]This inspection is to check for pests other than ALCM. (IRA, Part B, p. 321)

V. Annex A(1) to the *SPS Agreement*: "SPS Measure"

165. Australia's first ground of appeal relates to the Panel's finding that:

> [t]he 16 measures at issue in the current dispute, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) and are covered by the SPS Agreement.[275]

166. Australia appeals this finding, at least in part. Australia accepts that all of the measures at issue constitute SPS measures when taken as a whole or "grouped appropriately".[276] However, Australia takes issue with the Panel's finding that the 16 measures at issue constitute SPS measures not only as a whole, but also individually. Australia argues that the Panel's finding that the 16 measures at issue all have a purpose that corresponds to Annex A(1) to the *SPS Agreement* is not sufficient for each of them individually to amount to an SPS measure. Australia alleges that the Panel failed to assess whether the 16 measures at issue individually meet the requirements of Annex A(1) to the *SPS Agreement*.

167. According to Australia, there are not 16 separate SPS measures, but only four SPS measures, namely, two principal risk management measures relating to fire blight, one principal risk management measure relating to European canker, and one principal risk management measure related to ALCM. Australia maintains that several of what New Zealand had identified as "measures" were merely "ancillary"[277] requirements that could not individually give rise to a violation of the relevant obligations and therefore could not be challenged individually. In Australia's submission, the ancillary requirements are meaningless and ineffective if considered individually as they are dependent on, and merely serve to implement or maintain, the principal risk management measures.[278]

168. New Zealand responds that the Panel did not err in finding that the 16 measures constitute SPS measures both as a whole and individually. New Zealand disagrees with Australia's conception of "principal" and "ancillary" measures and submits that an SPS regime may be made up of multiple interlinked measures. The fact that one measure is linked to another measure does not disqualify it from being an SPS measure in its own right.[279] New Zealand also points out that the last sentence of Annex A(1) lists, as examples of SPS measures, the very types of measures that Australia argues are "ancillary" and therefore not in themselves SPS measures.[280]

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[275]Panel Report, para. 8.1(b); see also para. 7.172.
[276]Australia's appellant's submission, para. 60.
[277]Australia's appellant's submission, para. 67.
[278]Australia's first written submission to the Panel, paras. 135-144. See also Australia's responses to Panel Questions after the first Panel meeting, Annex A.
[279]New Zealand's appellee's submission, para. 2.30.
[280]New Zealand's appellee's submission, para. 2.28.

169. The question before us, therefore, is whether the 16 measures individually constitute SPS measures, or whether they constitute SPS measures only when taken as a whole or grouped together. To answer this question, we first consider the proper interpretation of the relevant text of Annex A(1)(a) to the *SPS Agreement* in accordance with the customary rules of interpretation of public international law. We then assess whether the Panel misinterpreted or misapplied the definition of an SPS measure in Annex A(1)(a).

A. *Interpretation of Annex A(1) to the SPS Agreement*

170. A unique feature of the *SPS Agreement* is that it defines the measures that are subject to its disciplines. Annex A(1) to the *SPS Agreement* provides that an SPS measure is defined as follows:

> ANNEX A
>
> DEFINITIONS
>
> 1. *Sanitary or phytosanitary measure* - Any measure applied:
>
> (a) to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;
>
> (b) to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;
>
> (c) to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or
>
> (d) to prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.
>
> Sanitary or phytosanitary measures include all relevant laws, decrees, regulations, requirements and procedures including, *inter alia*, end product criteria; processes and production methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transport of animals or plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; and packaging and labelling requirements directly related to food safety. (footnote omitted)

171. Although Annex A(1) refers to "any measure", neither the *SPS Agreement* nor the DSU contains a definition of the term "measure". The concept of "measure", however, is a key concept for dispute settlement and has been addressed by the Appellate Body in several cases. Having regard to Article 3.3 of the DSU, the Appellate Body has held that, in principle, any act or omission attributable to a WTO Member can be a measure of that Member for purposes of dispute settlement proceedings. The acts or omissions that are so attributable are, in the usual case, the acts or omissions of the organs of the State.[281]

172. A fundamental element of the definition of "SPS measure" set out in Annex A(1) is that such a measure must be one "applied to protect" at least one of the listed interests or "to prevent or limit" specified damage. Subparagraph (a) brings within the scope of the definition measures applied to protect animal or plant life or health within the Member's territory from specified risks related to pests and diseases. The word "to" in adverbial relation with the infinitive verb "protect" indicates a purpose or intention.[282] Thus, it establishes a required link between the measure and the protected interest. In that sense, the Appellate Body in *Australia – Salmon* referred to a Member's "appropriate level of protection" and explained that this level is an *objective*, and that the SPS measure is an *instrument* chosen to attain or implement that objective.[283] We note, in addition, that the word "applied" points to the application of the measure and, thus, suggests that the relationship of the measure and one of the objectives listed in Annex A(1) must be manifest in the measure itself or otherwise evident from the circumstances related to the application of the measure. This suggests that the purpose of a measure is to be ascertained on the basis of objective considerations.[284]

173. We consider that the meaning that has been attributed to the phrase "applied ... so as to afford protection" in the context of Article III:1 of the GATT 1994 may provide some assistance to the interpretative task before us.[285] The language of Annex A(1)(a) to the *SPS Agreement* is similar to Article III:1 of the GATT 1994, to the extent that both provisions use the word "applied", and in both provisions this word is followed by the infinitive of purpose, namely, "to protect" or "to afford protection", respectively. With regard to Article III of the GATT 1994, the Appellate Body has opined that, although the purpose of a measure is not easily ascertained, it can often be discerned from

[281]Appellate Body Report, *US – Corrosion-Resistant Steel Sunset Review*, para. 81.

[282]*Shorter Oxford English Dictionary*, 6th edn, A. Stevenson (ed.) (Oxford University Press, 2007), Vol. 2, p. 3280.

[283]Appellate Body Report, *Australia – Salmon*, para. 200.

[284]See, to similar effect, Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.2558.

[285]Whilst we are mindful that caution must be exercised when referring to similar words and phrases in other provisions of the covered agreements for the purpose of determining the meaning of a particular word or phrase (Appellate Body Report, *EC – Asbestos*, para. 89), we also note that, because Annex A(1) to the *SPS Agreement* and Article III:1 of the GATT 1994 form part of the same treaty by virtue of Article II:2 of the *WTO Agreement*, each constitutes context relevant to the interpretation of the other.

the measure's design, architecture, and structure.[286] A similar approach is called for under Annex A(1)(a) to the *SPS Agreement*. Whether a measure is "applied ... to protect" in the sense of Annex A(1)(a) must be ascertained not only from the objectives of the measure as expressed by the responding party, but also from the text and structure of the relevant measure, its surrounding regulatory context, and the way in which it is designed and applied. For any given measure to fall within the scope of Annex A(1)(a), scrutiny of such circumstances must reveal a clear and objective relationship between that measure and the specific purposes enumerated in Annex A(1)(a).

174. We now turn to the last sentence of Annex A(1), which provides:

> Sanitary or phytosanitary measures include all relevant laws, decrees, regulations, requirements and procedures including, *inter alia*, end product criteria; processes and production methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transport of animals or plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; and packaging and labelling requirements directly related to food safety.

175. We note that this last sentence of Annex A(1) follows, and relates to, all of the first sentence, including all of the purposes enumerated in subparagraphs (a) through (d). The first part of this sentence contains a list of legal instruments linked by the conjunction "and" ("laws, decrees, regulations, requirements and procedures"). This list is modified by the words "include" and "all relevant". The word "relevant" is, in our view, a key element within this sentence. We see "relevant" as a reference back to the preceding sentence in Annex A(1), that is, to the list of specific purposes that are the defining characteristic of every SPS measure. The words "include" and "all", which also introduce the list of instruments, suggest that the list is both illustrative and expansive. Taken together, the words "include" and "all relevant" therefore suggest that measures of a type not expressly listed may nevertheless constitute SPS measures when they are "relevant", that is, when they are "applied" for a purpose that corresponds to one of those listed in subparagraphs (a) through (d). Conversely, the fact that an instrument is of a type listed in the last sentence of Annex A(1) is not, in itself, sufficient to bring such an instrument within the ambit of the *SPS Agreement*.

176. Turning to the second part of the last sentence, we note that this provision introduces a list of instruments with the words "including, *inter alia*". The use of both "including" and "*inter alia*"

[286]Appellate Body Report, *Japan – Alcoholic Beverages II*, p. 29, DSR 1996:I, 97, at 120.

emphasizes that the list is only indicative.[287] The list itself covers a broad range of measures that are identified with varying degrees of specificity. To us, it is a list of examples of measures that may fall within the definition of an SPS measure, provided always that the measure manifests a clear and objective relationship with (is "applied" for) at least one of the purposes set out in subparagraphs (a) through (d). The list thus serves to illustrate, through a set of concrete examples, the different types of measures that, when they exhibit the appropriate nexus to one of the specified purposes, will constitute SPS measures and, accordingly, be subject to the disciplines set out in the *SPS Agreement*.

B. *Application of Annex A(1) to the Measures at Issue*

177. With these considerations in mind, we turn to the particularities of Australia's appeal. Australia alleges that the Panel's finding that the 16 measures individually meet the requirements of Annex A(1) was in error because the Panel did not properly apply the requirements of Annex A(1) to each measure individually.

178. We recall that the Panel based its conclusion on two elements. First, the Panel assessed the purpose of the measures. It observed that Australia's *Quarantine Act 1908*, which constitutes the legislative basis for the IRA and, thus, for the 16 measures at issue, defines quarantine measures as "having as their object the prevention or control of the introduction, establishment and spread of diseases or pests that will or could cause significant damage to human beings, animals, plants, other aspects of the environment or economic activities".[288] The Panel also referred to a section of the IRA providing that the purpose of the measures is to protect the health of people, animals, and plants.[289] The Panel then concluded that, because the 16 measures are spelt out in the IRA, each of them pursues these general objectives[290] and is therefore related to risks arising from the entry, establishment and spread of pests, in the sense of subparagraph (a) of Annex A(1) to the *SPS Agreement*.[291] In addition, the Panel identified the purpose of each of the individual measures, as set out in the IRA, and found a "close linkage"[292] between those purposes and managing risks. Second, the Panel analyzed whether the 16 measures fell within the list of examples of SPS measures set out in the last sentence of Annex A(1). The Panel found that each of the 16 measures prescribes a

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[287]We recall, in this connection, the Appellate Body's consideration of the term "*inter alia*" in Article 2.2 of the *Agreement on Technical Barriers to Trade* in *EC – Sardines*. Referring to the third sentence of that provision, which sets out a list introduced by the phrase "[s]uch legitimate objectives are, *inter alia*:", the Appellate Body considered that the use of the term "*inter alia*" indicated that the objectives covered by the term "legitimate objectives" extend beyond the objectives specifically mentioned in Article 2.2. (Appellate Body Report, *EC – Sardines*, para. 286)

[288]Subsection 4(1) of the *Quarantine Act 1908*, as quoted in IRA, Part B, p. 1. (footnote omitted)

[289]Panel Report, para. 7.127 (quoting IRA, Part B, p. 5; and *Import Risk Assessment Handbook* (Biosecurity Australia, 2003) (Panel Exhibit AUS-10), p. 5).

[290]Panel Report, para. 7.129.

[291]Panel Report, para. 7.139.

[292]Panel Report, para. 7.141.

particular way of doing something that needs to be followed if New Zealand apples are to be imported into Australia.[293] The Panel classified the 16 measures as regulations, requirements, or procedures. Consequently, the Panel concluded that the 16 measures, both as a whole and individually, constitute SPS measures in the sense of Annex A(1) to the *SPS Agreement*.[294]

179. We see no merit in Australia's allegation that the Panel failed to assess whether the 16 measures at issue individually meet the requirements of Annex A(1). It is correct that the Panel inferred that "[s]ince the 16 measures are spelt out in the IRA, each of them pursues the [same] general objectives [as the IRA]".[295] However, as we see it, the Panel's analysis was not limited to this finding. The Panel also assessed the purpose of the various measures individually, as spelt out in the IRA. In paragraph 7.141 of its Report, the Panel reviewed the measures individually and analyzed the purpose of each measure or small subset of measures. The Panel noted, for instance, that, according to the explanations in the IRA, Measures 2 to 5 are concerned with "risk reduction", Measure 6 relates to "mitigat[ing] the risk of fire blight", and the stated purpose of Measure 7 is "[p]revention of contamination".[296] As we see it, the Panel considered that this disaggregated analysis provided further support for its conclusion that the 16 measures at issue are related to risks arising from the entry, establishment and spread of pests, in the sense of Annex A(1)(a). We are therefore of the view that, contrary to what Australia alleges, the Panel did indeed assess whether the 16 measures at issue individually meet the requirements of Annex A(1) to the *SPS Agreement*.

180. Australia further contends that the individual measures are not SPS measures because they do not require "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."[297] Australia maintains that activities or requirements, such as administrative processes or procedures that have no operation other than to enhance the efficacy of some active mechanism for protecting animal or plant life or health from risk, should not be identified as separate SPS measures, but instead as ancillary requirements. Australia submits that ancillary requirements and the principal measures to which they relate should be identified collectively as amounting to a "single composite or enhanced SPS measure".[298] Australia illustrates this point by referring to what New Zealand identified as Measure 3. This "measure" requires that an orchard inspection methodology be developed and approved that addresses issues such as: visibility of symptoms in the tops of trees; the inspection time required and the number of trees to be inspected to meet the efficacy level; and training and certification of

[293]Panel Report, para. 7.163.
[294]Panel Report, para. 7.172.
[295]Panel Report, para. 7.129.
[296]Panel Report, para. 7.141 (quoting IRA, Part B, p. 318).
[297]Australia's appellant's submission, para. 58.
[298]Australia's appellant's submission, para. 58.

inspectors.[299] Australia argues that, taken alone, this requirement would be meaningless and ineffective for achieving any protection from risk, and that it would only have meaning insofar as it is ancillary to the principal measure requiring that apples be sourced from areas free from fire blight disease symptoms.

181. We see no support in the text of Annex A(1) to the *SPS Agreement* for the distinction between "ancillary" and "principal" measures proposed by Australia. That provision refers to "any measure"; it does not distinguish between ancillary measures and principal measures or contain the notion of "composite" or "enhanced" SPS measures. As we have set out above, the Appellate Body has interpreted the word "measure" in a broad sense, and rejected the notion that only certain types of measures could be challenged in dispute settlement proceedings.[300] Nothing in the text of Annex A(1) suggests a more restrictive interpretation of the word "measure" in the context of the *SPS Agreement*. In addition, the Appellate Body has held that the parties, and, in particular, the complainant, and the panel enjoy a certain latitude in defining the relevant measure.[301] Furthermore, the last sentence of Annex A(1) refers to laws, decrees, regulations, requirements, and procedures in general, without in any respect limiting the scope of these instruments or carving out particular types of measures. We note that Australia does not object to the Panel's classification of the "measures" identified by New Zealand as regulations, requirements, or procedures. In fact, Australia itself calls them "[a]ctivities or requirements, such as administrative processes or procedures".[302]

182. Finally, Australia argues that its reading of the definition of an SPS measure in Annex A(1) would be consistent with the definition of the term "phytosanitary measure" in the *Glossary of Phytosanitary Terms* contained in ISPM No. 5[303], and endorses the distinction that the glossary draws between a "phytosanitary measure" and a "phytosanitary procedure".[304] Australia does not explain whether or how it considers these definitions to be relevant to an interpretation of Annex A(1)(a) to the *SPS Agreement*, other than to point out that its suggested interpretation of Annex A(1)(a) would be consistent with these definitions. We recall that the Panel found that the *SPS Agreement* contains "no such distinction between phytosanitary measures, actions and procedures".[305] We agree with the Panel and we consider that the answer to the question of whether ISPM No. 5 categorizes

[299]See *supra*, para. 125 of this Report.
[300]Appellate Body Report, *US – Corrosion-Resistant Steel Sunset Review*, para. 88.
[301]See Appellate Body Report, *Brazil – Retreaded Tyres*, paras. 123-127. Such latitude may nevertheless be circumscribed when, as in *EC – Asbestos*, undue atomization of a measure would affect the applicability of relevant disciplines and/or may affect the substance of a panel's findings. (Appellate Body Report, *EC – Asbestos*, paras. 63-65) Yet Australia does not allege, and we do not see, that this would be the case in the present dispute.
[302]Australia's appellant's submission, para. 58.
[303]See *supra*, footnote 45 of this Report.
[304]Australia's appellant's submission, para. 59.
[305]Panel Report, para. 7.182.

Australia's 16 requirements as measures or procedures does not answer the question of whether or not these 16 requirements are measures falling within the scope of Annex A(1) to the *SPS Agreement*.

183. We have found that, contrary to what Australia alleges, the Panel did assess whether the 16 measures at issue individually meet the requirements of Annex A(1) to the *SPS Agreement* and we have rejected the distinction between ancillary and principal measures proposed by Australia. We, therefore, see no error in the Panel's finding that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) and are covered by the *SPS Agreement*.

C. *Conclusion*

184. Accordingly, we *uphold* the Panel's finding, in paragraphs 7.172 and 8.1(b) of the Panel Report, that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) to the *SPS Agreement*.

VI. Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*

185. We turn next to Australia's appeal of the Panel's findings that Australia's SPS measures at issue regarding fire blight and ALCM, as well as the "general" measures linked to these pests, are inconsistent with Articles 5.1 and 5.2 of the *SPS Agreement* and, by implication, also inconsistent with Article 2.2 of the *SPS Agreement*. We first provide a brief overview of the IRA's structure and reasoning followed by a summary of the relevant Panel findings. This is followed by an overview of the claims and arguments raised on appeal. We then analyze the specific issues raised by Australia's appeal against the Panel findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*. Finally, we set out our conclusion.

A. *IRA Structure and Panel Findings*

186. The Panel found that Australia's SPS measures regarding fire blight and ALCM, as well as the "general" measures linked to these pests, are inconsistent with Articles 5.1 and 5.2 of the *SPS Agreement*, and, by implication, with Article 2.2 of the *SPS Agreement*.[306]

187. The Panel reached these conclusions having found that, with respect to the analysis of the likelihood of entry, establishment and spread of fire blight and of ALCM, and of the potential consequences associated with the entry, establishment or spread of these pests in Australia, the IRA was not a proper risk assessment within the meaning of Article 5.1 and Annex A(4) to the

[306]Panel Report, paras. 7.906 and 8.1(c). See also paras. 7.472, 7.510, 7.887, and 7.905.

SPS Agreement, and that the flaws that the Panel had found in the IRA also constituted a failure, under Article 5.2 of the *SPS Agreement*, to take adequately into account factors such as the available scientific evidence, the relevant processes and production methods in New Zealand and Australia, and the actual prevalence of fire blight and viable ALCM.[307]

188. As explained *supra*, in subsection IV.C of this Report, in respect of fire blight and ALCM, the IRA included pest risk assessments for the importation of mature apple fruit free of trash, either packed or sorted and graded from New Zealand. The IRA combined a quantitative assessment of entry (importation, proximity, exposure), establishment and spread factors with a qualitative assessment of the potential biological and economic consequences associated with the entry, establishment and spread of the pests at issue. The IRA assigned quantitative values to the probabilities under the different importation steps[308] and establishment and spread factors and then aggregated and combined these probabilities to determine an overall value for the annual probability of entry, establishment and spread. This overall quantitative value was converted into a qualitative likelihood rating, based on the IRA's own "nomenclature", and this likelihood rating was combined with a qualitative assessment of the potential biological and economic consequences[309] in the IRA's "risk estimation matrix" to yield an overall determination of the "unrestricted risk".[310]

189. In the various quantitative steps of its analysis, the IRA assigned numeric point estimates or probability ranges, based on the scientific evidence it reviewed. In situations that, according to the IRA team, presented scientific uncertainty, conclusions were reached and a quantitative value was assigned through the exercise of IRA expert judgement. Probability values were assigned based on mathematical distribution models. Pert and triangular distribution were used to assign "most likely values". Uniform distribution was used and the mean value was assigned when there was not enough information to determine a "most likely value".

190. In assessing New Zealand's claims under Articles 5.1 and 5.2 of the *SPS Agreement* with respect to fire blight, the Panel reviewed the IRA's analysis of: (i) the eight importation steps;

[307]Panel Report, paras. 7.471, 7.886, and 7.904. With respect to ALCM, the Panel also referred to the IRA's failure to adequately take into account relevant environmental conditions.

[308]Eight importation steps are combined in ten different importation scenarios as to how an apple may become infected or infested during the process of importation into Australia. (*Supra*, para. 138 of this Report)

[309]The IRA assigned qualitative impact scores to specified direct and indirect criteria to determine the potential biological and economic consequences of fire blight and ALCM. These impact scores were combined to determine the overall rating assigned to the potential biological and economic consequences. (*Supra*, para. 144 of this Report)

[310]See *supra*, para. 147 of this Report.

(ii) proximity[311]; (iii) exposure[312]; (iv) establishment; (v) spread; and (vi) associated potential biological and economic consequences; and also examined (vii) certain alleged methodological flaws in the IRA.

191. On four out of eight importation steps, the Panel concluded that:

> ... the IRA's estimation that *Erwinia amylovora* will be always present in the source orchards in [N]ew 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.[313]

192. The Panel observed that the IRA calculated the overall probability of importation as a sum of the probabilities associated with ten individual importation scenarios and did not provide any separate justification or evidence regarding the estimated overall likelihood of importation. In the light of these findings, the Panel noted, but did not decide, the issue of whether this methodology was flawed in and of itself. The Panel reasoned that if, under such methodology, the estimations of one or more of the individual likelihoods are questionable, then the overall figure necessarily becomes questionable.[314] Because the Panel found that some of the individual likelihoods were flawed, it determined that the IRA's estimation of the overall probability of importation was not supported by adequate scientific evidence and, accordingly, was not coherent and objective.[315]

193. With respect to fire blight, the Panel also found that a significant part of the IRA's analysis of exposure, establishment and spread was based on a number of assumptions and qualifications that were not convincing, leading to reasonable doubts about the evaluation made by the risk assessor.[316] The Panel, therefore, concluded that the reasoning articulated in the IRA with respect to the likelihood of entry, establishment and spread of fire blight, including the IRA's estimation of the values for the

[311]Proximity is the likelihood that major handlers and users of apples (utility points) would be located sufficiently close to susceptible host plants (exposure groups) for the transfer of pests from imported apples to host plants to take place. (*Supra*, paras. 137 and 139 of this Report)

[312]Exposure is the likelihood of transfer of a pest from an infected apple to a susceptible host plant. (*Supra*, paras. 137 and 140 of this Report)

[313]Panel Report, para. 7.447.

[314]Panel Report, para. 7.355.

[315]Panel Report, para. 7.447.

[316]Panel Report, para. 7.448.

respective probabilities, did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[317]

194. Regarding the potential biological and economic consequences associated with fire blight, the Panel discussed certain testimony of its appointed experts, including that it is impossible to predict the economic consequences of the introduction of fire blight into a new area and that the IRA has a tendency to overestimate the severity of the consequences of fire blight in certain aspects. The Panel, therefore, found that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of fire blight into Australia did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[318]

195. In the light of the above, the Panel found that, with respect to its analysis of the fire blight risk, the "IRA is not a proper risk assessment within the meaning of Article 5.1 and paragraph 4 of Annex A to the SPS Agreement".[319] The Panel also found that the IRA contained certain *methodological flaws* that magnified the risk assessed and was, for that reason too, not a proper risk assessment within the meaning of Article 5.1 of the *SPS Agreement*.[320] The Panel found, accordingly, that Australia's requirements regarding fire blight on New Zealand apples are inconsistent with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*.[321]

196. With respect to ALCM, in assessing New Zealand's claims under Articles 5.1 and 5.2 of the *SPS Agreement*, the Panel reviewed the IRA's analysis of: (i) the viability of ALCM cocoons; (ii) the effects of parasitism on ALCM viability; (iii) the ALCM flight range; (iv) the period of emergence of ALCM; (v) the climatic conditions for the spread of ALCM in Australia; and (vi) the mode of trade. The Panel found that the IRA's reasoning was not objective and coherent in respect of a number of these factors, which could have a major impact on the assessment of this particular risk, in particular: the viability of ALCM in occupied cocoons; the impact of parasitism on cocoon occupancy; the protracted period of emergence of ALCM adults relative to their short lifespan, which diminishes the chances of mating; the climatic conditions for the establishment and spread of ALCM in Australia; and the likely mode of trade.[322] The Panel found that, cumulatively, the IRA's failure to take these factors into account was enough to create reasonable doubts about the risk assessment with respect to its evaluation of the likelihood of entry, establishment and spread of ALCM. The Panel, therefore, concluded that due to these flaws, the IRA's analysis of the likelihood of entry,

[317]Panel Report, para. 7.448.
[318]Panel Report, para. 7.470.
[319]Panel Report, para. 7.471.
[320]Panel Report, para. 7.510.
[321]Panel Report, paras. 7.472 and 7.510.
[322]Panel Report, para. 7.870.

establishment and spread of ALCM could not be found to be supported by coherent reasoning and sufficient scientific evidence and thus was not objectively justifiable.[323]

197. The Panel found that the IRA had a tendency to overestimate the severity of the consequences of ALCM in certain aspects, and that it did not adequately consider the existence of the climatic conditions necessary for the establishment and spread of ALCM in Australia. The Panel, therefore, concluded that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of ALCM into Australia did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[324]

198. In the light of the above, the Panel found that, with respect to its analysis of the ALCM risk, the IRA is not a proper risk assessment within the meaning of Article 5.1 and Annex A(4) to the *SPS Agreement*[325], and found, accordingly, that Australia's inspection and treatment requirements regarding ALCM on New Zealand apples are inconsistent with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*.[326]

199. With respect to the general measures, the Panel also found that the IRA is not a proper risk assessment, "[c]onsidering the link in the IRA between the 'general' measures ... and the specific requirements regarding fire blight ... and ALCM, as well as the lack of any separate justification for these 'general' measures in the IRA ...".[327] Thus, the Panel found that these measures, too, are inconsistent with Articles 5.1 and 5.2 and, by implication, Article 2.2 of the *SPS Agreement*.[328]

B. *Claims of Error and Arguments on Appeal*

200. On appeal, Australia argues that the Panel erred in its interpretation of Article 5.1 of the *SPS Agreement* and misapplied the criteria elaborated by the Appellate Body in *US/Canada – Continued Suspension* for a panel's review of a risk assessment under Article 5.1 of the *SPS Agreement*.

201. Australia claims that the Panel erred in its review of the IRA both for fire blight and ALCM, because it misapplied the standards of scientific "sufficiency"[329] and "objectivity and coherence".[330] According to Australia, as regards the IRA's intermediate conclusions, the Panel should have asked

[323]Panel Report, para. 7.871.
[324]Panel Report, para. 7.885.
[325]Panel Report, para. 7.886.
[326]Panel Report, para. 7.887.
[327]Panel Report, para. 7.904.
[328]Panel Report, para. 7.905.
[329]Australia's appellant's submission, para. 92.
[330]Australia's appellant's submission, paras. 93 and 103.

only whether they were "within a range that could be considered legitimate by the standards of the scientific community".[331] Australia adds that the standard of objectivity and coherence set out in paragraph 591 of the Appellate Body reports in *US/Canada – Continued Suspension* applies only to "the particular conclusion ultimately reached" by a Member assessing the risk.[332] Australia also claims that the Panel wrongly required the IRA to contain an explanation of precisely how the IRA team reached the expert judgements it made at intermediate steps in the IRA[333] and failed to assess the materiality of the faults it found with particular expert judgements made in the IRA.[334] Australia claims that these legal errors undermine the Panel's analysis of certain importation steps, exposure, establishment and spread, as well as of the associated potential biological and economic consequences of fire blight and ALCM.[335] At the oral hearing, Australia confirmed that its appeal of the Panel's findings on the general measures depends on its appeal of the pest-specific measures and that we must rule on the general measures in the same way as we rule on the pest-specific measures.

202. New Zealand responds that Australia's two main assertions, that the standard of objectivity and coherence in *US/Canada – Continued Suspension* should apply "only to 'conclusions ultimately reached'", and that a panel should review only whether expert judgements fall "within a range considered legitimate by the standards of the scientific community", are "designed to shelter the IRA from effective review".[336] New Zealand argues that the criteria identified in *US/Canada – Continued Suspension*—that reasoning in a risk assessment be "objective and coherent" and that "conclusions drawn find sufficient support in the scientific evidence"—apply equally to reasoning and conclusions that are based in part on the application of expert judgement.[337] New Zealand also contests Australia's assertions that the Panel imposed an unduly onerous duty of explanation on the IRA in connection with its use of expert judgement, and failed to assess the materiality of the flaws in the IRA. According to New Zealand, these assertions are "based on a misreading of the Panel Report".[338]

203. Before reviewing Australia's claims that the Panel erred in its interpretation and application of Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*, we consider the meaning and content of the obligations set out in these provisions.

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[331]Australia's appellant's submission, para. 95.
[332]Australia's appellant's submission, paras. 76 and 77.
[333]Australia's appellant's submission, paras. 96 and 97.
[334]Australia's appellant's submission, paras. 84-90 and 122.
[335]Australia's appellant's submission, paras. 100-123.
[336]New Zealand's appellee's submission, paras. 2.39 and 2.40 (quoting Australia's appellant's submission, paras. 76 and 77).
[337]New Zealand's appellee's submission, paras. 2.44 and 2.45.
[338]New Zealand's appellee's submission, para. 2.40.

C. *The Panel's Assessment of the IRA*

1. Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*

204. Article 5.1 of the *SPS Agreement* requires that sanitary or phytosanitary measures be based on a "risk assessment". Article 5.1 provides that:

> Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations.

205. "Risk assessment" for pests is defined in Annex A(4) to the *SPS Agreement* as:

> [t]he evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; ...

206. Article 5.2 of the *SPS Agreement* contains a list of factors that must be taken into account in a risk assessment:

> In the assessment of risks, Members shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest- or disease-free areas; relevant ecological and environmental conditions; and quarantine or other treatment.

207. Science plays a central role in risk assessment and, therefore, a risk assessment is "a process characterized by systematic, disciplined and objective enquiry and analysis, that is, a mode of studying and sorting out facts and opinions".[339] Moreover, the list of factors that Members shall take into account in a risk assessment set out in Article 5.2 is not a "closed list"[340], and it does not *a priori* exclude factors that are not susceptible of quantitative analysis by the empirical or experimental laboratory methods commonly associated with the physical sciences.

208. Thus, Article 5.2 requires a risk assessor to take into account the available scientific evidence, together with other factors. Whether a risk assessor has taken into account the available scientific evidence in accordance with Article 5.2 of the *SPS Agreement* and whether its risk assessment is a proper risk assessment within the meaning of Article 5.1 and Annex A(4) must be determined by

[339]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 527 (quoting Appellate Body Report, *EC – Hormones*, para. 187).
[340]Appellate Body Report, *EC – Hormones*, para. 187.

assessing the relationship between the conclusions of the risk assessor and the relevant available scientific evidence.

209. In *EC – Hormones*, the Appellate Body clarified that Article 5.1 is a "specific application of the basic obligations contained in Article 2.2 of the *SPS Agreement*" and that "Articles 2.2 and 5.1 should constantly be read together".[341] Article 2.2 focuses on the need for an SPS measure to be based on scientific principles and sufficient scientific evidence. It provides:

> Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence, except as provided for in paragraph 7 of Article 5.

210. We observe that, in its decisions under Articles 2.2 and 5.1 of the *SPS Agreement*, the Appellate Body has identified the role of a panel assessing compliance with these provisions as an inquiry into whether there is a "rational or objective relationship" between the SPS measures and the scientific evidence and between the SPS measures and the risk assessment.[342]

211. The standard of review in proceedings under the *SPS Agreement* "must reflect the balance established in that Agreement between the jurisdictional competences conceded by the Members to the WTO and the jurisdictional competences retained by the Members for themselves".[343] The applicable standard of review is set out in Article 11 of the DSU, which states in relevant part:

> [A] panel should make an objective assessment of the matter before it, including an objective assessment of the facts of the case and the applicability of and conformity with the relevant covered agreements ... .

212. In *EC – Hormones*, the Appellate Body clarified that this standard of review requires that a panel reviewing a risk assessment under Article 5.1 of the *SPS Agreement* neither undertake a *de novo* review, nor give "total deference" to the risk assessment it reviews.[344]

213. In *US/Canada – Continued Suspension*, the Appellate Body further clarified the standard of review that applies to a panel reviewing the conformity of a measure with Article 5.1 of the

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[341]Appellate Body Report, *EC – Hormones*, para. 180. The Appellate Body also clarified that "[t]he requirement that an SPS measure be 'based on' a risk assessment is a substantive requirement that there be a rational relationship between the measure and the risk assessment". (*Ibid*., para. 193)

[342]In *Japan – Agricultural Products II*, the Appellate Body stated that "the 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". (Appellate Body Report, *Japan – Agricultural Products II*, para. 84) See also Appellate Body Report, *Japan – Apples*, paras. 162 and 163.

[343]Appellate Body Report, *EC – Hormones*, para. 115.

[344]Appellate Body Report, *EC – Hormones*, para. 117.

SPS Agreement. The Appellate Body stated that, under this provision, a panel's task is to review a WTO Member's risk assessment and not to substitute its own scientific judgement for that of the risk assessor. A panel should not, therefore, determine whether the risk assessment is correct, but rather "determine whether that risk assessment is supported by coherent reasoning and respectable scientific evidence and is, in this sense, objectively justifiable".[345]

214. More specifically, at paragraph 591 of its reports in *US/Canada – Continued Suspension*, the Appellate Body stated that, with respect to the scientific basis underlying an SPS measure, a panel should verify whether it "comes from a respected and qualified source" and has "the necessary scientific and methodological rigour to be considered reputable science". The Appellate Body explained that, "while the correctness of the views need not have been accepted by the broader scientific community, the views must be considered to be legitimate science according to the standards of the relevant scientific community." With respect to the reasoning of the risk assessor, the Appellate Body observed in the same paragraph of the *US/Canada – Continued Suspension* reports that:

> [a] panel should also assess whether the reasoning articulated on the basis of the scientific evidence is objective and coherent. In other words, a panel should review whether the particular conclusions drawn by the Member assessing the risk find sufficient support in the scientific evidence relied upon.

215. Thus, in its discussion of the standard of review that applies to a panel reviewing a risk assessment under Article 5.1 of the *SPS Agreement*, the Appellate Body identified two aspects of a panel's scrutiny of a risk assessment, namely, scrutiny of the underlying scientific basis and scrutiny of the reasoning of the risk assessor based upon such underlying science. With respect to the first aspect, the Appellate Body saw the panel's role as limited to reviewing whether the scientific basis constitutes "legitimate science according to the standards of the relevant scientific community". The Appellate Body perceived the second aspect of a panel's review as involving an assessment of whether the reasoning of the risk assessor is objective and coherent, that is, whether the conclusions find sufficient support in the scientific evidence relied upon. Having done so, the panel must determine whether the results of the risk assessment sufficiently warrant the challenged SPS measures.[346] We consider that this reasoning of the Appellate Body is consistent with the overarching requirement in Article 2.2 and reflected in Articles 5.1 and 5.2 of the *SPS Agreement* that there be a "rational or objective relationship" between the SPS measures and the scientific evidence.

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[345]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 590.

[346]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 591 (referring to Appellate Body Report, *EC – Hormones*, para. 193).

216. In the light of the above, we review below Australia's claims that the Panel: (i) misinterpreted and misapplied the standard of review applicable to its review of the IRA under Article 5.1 of the *SPS Agreement*; (ii) erred in its assessment of the use of IRA expert judgement; and (iii) failed to assess the materiality of the faults it found with the reasoning in the IRA.

2. The Standard of Review Used by the Panel in Its Review of the IRA under Article 5.1 of the *SPS Agreement*

217. Australia claims that in finding that the intermediate conclusions in the IRA were not supported by adequate or sufficient scientific evidence and were thus not objective and coherent, the Panel misapplied the standard of review articulated by the Appellate Body in *US/Canada – Continued Suspension*.[347] Australia argues that the standard of review applicable to intermediate expert judgements made in the IRA in the light of scientific uncertainty "ought be no different from the standard recognised in *US/Canada – Continued Suspension* ... 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'".[348] Australia further contends that the standard of objectivity and coherence does not relate to the quality of reasoning *per se*, but to the quality of the "particular conclusion ultimately reached".[349]

218. New Zealand responds that Australia's assertion that a panel should assess whether an intermediate conclusion in a risk assessment is within a range that could be considered legitimate by the standards of the scientific community would establish a lower threshold for a panel reviewing a risk assessment than the threshold clarified by the Appellate Body in *US/Canada – Continued Suspension*, and that such a lower threshold would eliminate the need to assess the link between the scientific evidence and the conclusions reached in a risk assessment.[350]

219. We start by observing that, in *US/Canada – Continued Suspension*, the Appellate Body did not set out a series of steps that a panel must mechanically follow in the evaluation of a risk assessment under Article 5.1 of the *SPS Agreement*. Rather, the Appellate Body suggested a way for a panel to verify the consistency of a risk assessment with Article 5.1 of the *SPS Agreement* that is centred on the notion that the risk assessment should be evaluated in the light of the scientific evidence on which it relies. In this respect, the reports in *US/Canada – Continued Suspension* confirm the interpretation provided by the Appellate Body in its earlier decisions under Article 2.2 of the *SPS Agreement*—that a panel should verify the existence of a "rational or objective relationship"

[347]Australia's appellant's submission, paras. 92 and 93.
[348]Australia's appellant's submission, para. 77.
[349]Australia's appellant's submission, paras. 76 and 77. See also para. 103.
[350]New Zealand's appellee's submission, paras. 2.61 and 2.62.

between the SPS measures and the risk assessment, on the one hand, and the scientific evidence, on the other hand—and provides some practical guidance as to how this might be done.[351]

220. As we have already observed, in *US/Canada – Continued Suspension*, the Appellate Body identified two aspects of a panel's review of a risk assessment under Article 5.1 of the *SPS Agreement*: (i) a determination that the scientific basis of the risk assessment comes from a respected and qualified source and can accordingly be considered "legitimate science" according to the standards of the relevant scientific community; and (ii) a determination that the reasoning of the risk assessor is objective and coherent and that, therefore, its conclusions find sufficient support in the underlying scientific basis. A panel should first determine whether the scientific basis relied upon by the risk assessor is "legitimate" before reviewing whether the reasoning and the conclusions of the risk assessor that rely upon such a scientific basis are objective and coherent.

221. We note that the first aspect, the panel's review of the scientific basis of the risk assessment, may be particularly relevant in cases where the importing Member has relied on minority scientific opinions in conducting a risk assessment. In such cases, the question whether such opinions constitute "legitimate" science from respected and qualified sources according to the standards of the relevant scientific community may have greater prominence. In this appeal, we have not been requested to decide whether the Panel properly assessed the underlying scientific basis that was used by the IRA to support its reasoning and conclusions on the risks relating to fire blight and ALCM.

222. As far as the second aspect is concerned, the Panel found in several instances that the IRA's conclusions were not objective and coherent because they exaggerated or overestimated certain risks and consequences and did not find sufficient support in the scientific evidence relied upon. In this respect, the Panel's approach to reviewing the IRA's reasoning and conclusions is consistent with the Appellate Body reports in *US/Canada – Continued Suspension*, as well as with its previous decisions that have required panels to verify the existence of a rational or objective relationship between the SPS measures and the risk assessment, on the one hand, and the scientific evidence, on the other hand.[352]

223. We consider, therefore, that the Panel did not err in reviewing whether the IRA's intermediate reasoning and conclusions were objective and coherent, that is, whether the conclusions found sufficient support in the scientific evidence relied upon. We do not accept Australia's contention that the Panel's analysis should have been limited to a simple review of whether the intermediate

[351]See Appellate Body Report, *EC – Hormones*, para. 193; Appellate Body Report, *Japan – Agricultural Products II*, para. 84; and Appellate Body Report, *Japan – Apples*, para. 162.

[352]See Appellate Body Report, *EC – Hormones*, para. 193; Appellate Body Report, *Japan – Agricultural Products II*, para. 84; and Appellate Body Report, *Japan – Apples*, para. 162.

conclusions reached by the IRA "fall within a range that could be considered legitimate by the scientific community".

224. In our view, by arguing that the Panel's task in reviewing the IRA's intermediate conclusions should be limited to ensuring that these "fall within a range that could be considered legitimate by the scientific community", Australia is suggesting that a panel should assess the reasoning and conclusions reached by a risk assessor and the scientific evidence relied upon in the same way. We observe, however, that a distinction should be drawn between, on the one hand, the scientific evidence relied upon by the risk assessor and, on the other hand, the reasoning employed and the conclusions reached by the risk assessor on the basis of that scientific evidence. In this dispute, the scientific and technical works reviewed in the IRA on fire blight and ALCM and on the analysis of risk fall within the first category. In contrast, the IRA's reasoning, intermediate conclusions on the various steps and factors, as well as its overall conclusions, fall within the second category, even where expert judgement was exercised by the IRA to address alleged scientific uncertainty. As we consider further below, when the exercise of expert judgement forms an integral part of the risk assessor's analysis, then it should be subject to the same type of scrutiny by the panel as all other reasoning and conclusions in the risk analysis.

225. In *US/Canada – Continued Suspension*, the Appellate Body considered that the manner of scrutinizing the underlying scientific evidence differs from the manner of scrutinizing the reasoning of the risk assessor. This is because a panel is not well suited to conduct scientific research and assessments itself[353], and should not substitute its judgement for that of a risk assessor.[354] A panel, however, must be able to review whether the conclusions of the risk assessor are based on the scientific evidence relied upon and are, accordingly, objective and coherent. Whether or not the requisite rational or objective relationship exists can only be ascertained through the examination of how the scientific evidence is used and relied upon to reach particular conclusions. In this respect, the reasoning employed by the risk assessor plays an important role in revealing whether or not such a relationship exists.

226. Regarding the distinction Australia draws between "intermediate" conclusions and conclusions "ultimately reached" in the IRA, we observe that in *US/Canada – Continued Suspension* the Appellate Body did not make such a distinction, but required a review of whether the reasoning itself is "objective and coherent" so as to determine whether the "*particular conclusions* drawn by the Member assessing the risk find sufficient support in the scientific evidence relied upon".[355] The

[353]Appellate Body Report, *EC – Hormones*, para. 117.
[354]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 590.
[355]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 591. (emphasis added)

Appellate Body did not reserve this test for the *ultimate conclusions* reached by the risk assessor. In this respect, we observe that it is not possible to review the ultimate conclusions reached by the risk assessor in isolation from the reasoning and the intermediate conclusions that lead up to them. A panel needs to understand how certain conclusions were reached and their relationship with the underlying scientific basis in order to be in a position to assess whether the requisite objective and rational relationships between the science, the risk assessment, and the resulting SPS measures exist.

227. It is through the reasoning of the risk assessor that it should be possible to understand whether the risk assessment is based on the scientific evidence and whether in turn the proposed SPS measures are based on the scientific evidence and on the risk assessment. This is also recognized by the ISPM under the International Plant Protection Convention ("IPPC"). In particular, ISPM No. 2 and ISPM No. 11 specify that the entire risk analysis process, including risk assessment, should be sufficiently documented "so that when a review or a dispute arises, the sources of information and rationale used in reaching the management decision can be clearly demonstrated".[356]

228. We further note that, in this case, the reasoning in the IRA is articulated on the basis of importation steps and scenarios, along with establishment and spread factors, that are then aggregated and combined to arrive at an overall probability of entry, establishment and spread. A similar structure is used for the qualitative assessment of the potential biological and economic consequences. No separate reasoning, however, is developed for the IRA's ultimate conclusions. According to Australia, the relevant conclusions are the conclusions on the assessment of risk contained in the IRA's sections and tables on "unrestricted risk" and "restricted risk" for fire blight and ALCM.[357] The Panel's analysis of the IRA follows the IRA's own structure and, therefore, consists of reviews of steps and factors and the methodology by which they are aggregated and combined. In so doing, the Panel adhered to the standard of review applicable to a panel's review of a risk assessment under Article 5.1 of the *SPS Agreement*, which requires a panel to review the conclusions of a risk assessor, not to undertake its own risk assessment.

229. In these circumstances, if the Panel had been prevented from assessing the objectivity and coherence of the intermediate conclusions and reasoning of the IRA, it would have been left with virtually no basis upon which to assess the consistency of the IRA with Article 5.1 of the *SPS Agreement*. The Panel was, therefore, correct to assess whether the IRA's intermediate

[356]ISPM No. 11, *supra*, footnote 195 of this Report, Section 4.1; see also ISPM No. 2, *supra*, footnote 195 of this Report, Section 3.3.2. ISPM No. 11, together with ISPM No. 2, present the general framework for conducting a pest risk assessment. (Panel Report, paras. 2.69 and 2.71)

[357]Australia's response to questioning by the Appellate Body at the oral hearing (referring to IRA, Part B, Table 23, p. 104 (unrestricted risk for fire blight); Table 31, p. 116 (restricted risk for fire blight); Table 49, p. 187 (unrestricted risk for ALCM); and Table 56, p. 191 (restricted risk for ALCM)).

conclusions on the intermediate steps and factors were objective and coherent, considering that it was at these intermediate steps that the IRA reasoned and explained the relationship between the scientific evidence and its conclusions.

230. In the light of the above, we do not see that the Panel erred in its review of the IRA under the applicable standard of review. In particular, we consider that the Panel correctly reviewed whether the intermediate conclusions the IRA reached on the likelihood of importation, on the likelihood of entry, establishment and spread, and on the potential biological and economic consequences of fire blight and ALCM, found sufficient support in the scientific evidence and were, accordingly, objective and coherent.

231. For the reasons explained above, we dismiss Australia's claim that the Panel erred in reviewing whether the IRA's conclusions in respect of fire blight on importation steps 1, 2, 3, 5, and 7, exposure, establishment, spread, and potential biological and economic consequences were objective and coherent, and whether the IRA's methodology was objective and coherent, rather than asking whether these "intermediate" conclusions were "within a range that could be considered legitimate" according to the standards of the scientific community.[358] For the same reasons, we also dismiss Australia's claim that the Panel erred in reviewing whether the IRA's conclusions in respect of ALCM on importation, establishment, spread, and potential biological and economic consequences were objective and coherent rather than "within a range that could be considered legitimate" according to the standards of the scientific community.[359]

3. The Panel's Assessment of the Use of IRA Expert Judgement

232. Australia also appeals the Panel's evaluation of the use of IRA expert judgement to reach conclusions regarding several intermediate steps and factors in the risk assessment. In this respect, we recall that the IRA team exercised this judgement in situations where it determined that there was scientific uncertainty.[360] Australia explained to the Panel that this IRA expert judgement was "used when there [was] limited evidence or where the underlying biological process is naturally highly variable".[361]

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[358]Australia's appellant's submission, paras. 103, 105, 107, and 113. See also paras. 13, 77, 78, 93, and 95.

[359]Australia's appellant's submission, paras. 118 and 122. See also paras. 13, 77, 78, 93, and 95.

[360]Australia confirmed at the oral hearing that expert judgement in the IRA was exercised collectively by the six members of the IRA team. For instance, on proximity for ALCM, the IRA explicitly states that "[t]he estimated likelihoods were determined by expert judgement taking into consideration relevant stakeholder comments". (See IRA, Part B, p. 167) In several other instances regarding fire blight and ALCM, the IRA reached conclusions based on IRA expert judgement, although it did not explicitly refer to "expert judgement".

[361]Panel Report, para. 7.438 (quoting Australia's response to Panel Question 30 after the first Panel meeting). See also paras. 7.433 and 7.746; and IRA, Part B, p. 167.

233. The Panel expressed a number of concerns with respect to the use of IRA expert judgement throughout the IRA to estimate the probability of entry, establishment and spread of fire blight. The Panel found that little information was provided in the IRA on how the extensive discussion and review of different factors associated with the entry, establishment and spread was then translated into quantitative estimates.[362] The Panel reasoned that, while "expert judgement may be an important tool for the risk assessor, it is not a substitute for scientific data, especially for the purpose of estimating the likelihood of entry, establishment and spread of a pest".[363] According to the Panel, Australia was required, but failed, to demonstrate that the exercise of IRA expert judgement was documented, transparent, and based on the relevant reliable scientific information, even when such information was limited.[364]

234. Australia claims that the phrase "as appropriate to the circumstances" in Article 5.1 of the *SPS Agreement* provides a measure of flexibility in terms of how a risk assessment is conducted when there is little available scientific evidence.[365] Australia also argues that the Panel erred in requiring that the IRA explain precisely how the IRA expert judgement was reached at intermediate steps in the IRA. In Australia's view, no such obligation exists in Article 5.1 of the *SPS Agreement*.[366]

235. New Zealand responds that the phrase "as appropriate to the circumstances" in Article 5.1 provides for some flexibility regarding the nature of a risk assessment, but does not allow deviation from the substantive obligations under Article 5.1. New Zealand contends the Panel did not require Australia to explain how each expert judgement was reached. Rather, according to New Zealand, the Panel correctly rejected the concept that the mere recourse to expert judgement requires a panel to disregard the criteria elaborated in *US/Canada – Continued Suspension* and uphold the conclusions reached through that expert judgement.[367]

236. We have already expressed the view that if a risk assessor reaches certain conclusions based on its expert judgement, having determined that there is a certain degree of scientific uncertainty, this does not preclude a panel from assessing whether those conclusions are objective and coherent and have a sufficient basis in the available scientific evidence. We have also stressed the difference between the underlying scientific evidence, on the one hand, and the reasoning and conclusions of the risk assessor based on this scientific evidence and, where necessary, on expert judgement, on the other hand. In this case, as we have already observed, what Australia refers to as expert judgement forms

[362]Panel Report, para. 7.432.
[363]Panel Report, para. 7.440.
[364]Panel Report, paras. 7.440 and 7.811.
[365]Australia's appellant's submission, para. 73.
[366]Australia's appellant's submission, para. 97.
[367]New Zealand's appellee's submission, para. 2.73.

an integral part of the reasoning of the risk assessor and should, therefore, have been subject to the same scrutiny by the Panel as other parts of the IRA.

237. Regarding Australia's allegation that, in its treatment of the IRA expert judgement, the Panel failed to give meaning to the phrase "as appropriate to the circumstances" in Article 5.1 of the *SPS Agreement*, we observe that, in *US/Canada – Continued Suspension*, the Appellate Body found that this phrase, while suggesting that account must be taken of methodological difficulties, does not excuse a risk assessor from properly performing the risk assessment.[368] We recall, too, that in *Australia – Salmon*, the Appellate Body stated that the existence of "unknown and uncertain elements" does not relieve a risk assessor from complying with the requirements of Articles 5.1 and 5.2 of the *SPS Agreement*.[369]

238. We observe that, if a Member chooses to base SPS measures on a risk assessment, it must have made the preliminary determination that the relevant scientific evidence is sufficient to perform a risk assessment. If, however, the Member considers that scientific evidence is insufficient to perform a risk assessment, it may instead choose to take provisional SPS measures based on Article 5.7 of the *SPS Agreement*.

239. In this respect, we recall that, in *Japan – Apples*, the Appellate Body stated that the relevant scientific evidence will be considered "insufficient" for purposes of Article 5.7 "if the body of available scientific evidence does not allow, in quantitative or qualitative terms, the performance of an adequate assessment of risks as required under Article 5.1 and as defined in Annex A to the *SPS Agreement*."[370] In *US/Canada – Continued Suspension*, the Appellate Body added that "where the relevant scientific evidence is sufficient to perform a risk assessment, as defined in Annex A to the *SPS Agreement*, a WTO Member may take an SPS measure only if it is 'based on' a risk assessment in accordance with Article 5.1 and that SPS measure is also subject to the obligations in Article 2.2."[371]

240. Therefore, when the relevant scientific evidence is sufficient to perform a risk assessment under Article 5.1 of the *SPS Agreement*, a risk assessor should rely on the available scientific evidence, even if the risk assessor is faced with a certain degree of scientific uncertainty, and decides,

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[368]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 562. The Panel in *EC – Approval and Marketing of Biotech Products* also found that the phrase "as appropriate to the circumstances" in Article 5.1 of the *SPS Agreement*, while providing some flexibility in terms of how a risk assessment is performed, does not relieve a Member from the requirements of Article 5.1 of the *SPS Agreement*. (Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.3053)

[369]Appellate Body Report, *Australia – Salmon*, para. 130.

[370]Appellate Body Report, *Japan – Apples*, para. 179.

[371]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 674.

as Australia did in the IRA, that it must use expert judgement as part of its assessment of the relevant risk. In this case, we understand the Panel to have accepted that Australia could resort to expert judgement in the presence of scientific uncertainty. The Panel, however, questioned the IRA's repeated use of expert judgement in situations where scientific evidence was available, as well as the IRA's non-reliance on that available scientific evidence, and the absence of reasoning as to why such an approach was used.

241. The fact that Australia performed a risk assessment and based its SPS measures on this risk assessment suggests that Australia considered the relevant scientific evidence to be sufficient to perform a risk assessment. This is also highlighted by the fact that Australia chose a semi-quantitative methodology for its risk assessment, suggesting a degree of confidence in the available scientific evidence. On several occasions, however, as identified and discussed in the Panel Report[372], the IRA resorted to the IRA expert judgement to estimate the quantitative probability of certain events, even where scientific evidence was available.[373] Such recourse to the IRA expert judgement is not in itself objectionable, but it must be reasoned and explained consistently with Articles 5.1 and 5.2 of the *SPS Agreement* so that the risk assessment can still be considered a scientific process that is based on the "available scientific evidence".

242. We do not consider, therefore, that the phrase "as appropriate to the circumstances" prevents a panel from assessing the coherence and objectivity of a risk assessment under Article 5.1 of the *SPS Agreement* in situations that present some degree of scientific uncertainty and where a risk assessor has reached conclusions on the basis of expert judgement.

243. According to Australia, the flexibility to adapt risk assessment methodologies as a function of the available scientific evidence is further reinforced by the reference in Article 5.1 of the *SPS Agreement* to the risk assessment techniques developed by international standards organizations. In this respect, Australia notes that the relevant risk assessment techniques identified in ISPM No. 2 and ISPM No. 11 recognize the need for expert judgement at every stage of a risk assessment, in case of scientific uncertainty.[374] Moreover, in Australia's view, the standards of "documentation" and "transparency" set forth in ISPM No. 2 and ISPM No. 11 only require identification of where expert judgement has been used and an explanation of what scientific uncertainty has given rise to the need

[372]Panel Report, paras. 7.432-7.440.

[373]In its opening statement at the Panel's second substantive meeting with the parties, Australia stated that, while the IRA "did not rely on 100% expert judgment", "it is true that certain steps in the pathways assessed were better supported by evidence than others" and that, "[i]n those latter cases, expert judgment was employed". (Australia's opening statement at the second Panel meeting, para. 12; see also Panel Report, para. 7.803)

[374]Australia's appellant's submission, para. 74.

for that expert judgement to be made, but do not suggest any need for an explanation of how a particular expert judgement was reached.[375]

244. As observed above, the phrase "as appropriate to the circumstances" in Article 5.1 of the *SPS Agreement* should not be interpreted as authorizing a risk assessor to deviate from the requirements of Articles 5.1 and 5.2 or to ignore the available scientific evidence, even where expert judgement is used. A degree of scientific uncertainty does not justify a departure from the requirements of Articles 5.1 and 5.2 and, in particular, the requirement that the available scientific evidence be taken into account in the risk assessment. Generally, documentation and transparency in the use of expert judgement are instrumental in the determination of whether the overall risk assessment, even when it is conducted in the face of some scientific uncertainty, relies on the available scientific evidence and is consistent with the *SPS Agreement*.

245. Article 5.1 also requires Members performing risk assessments to take "into account risk assessment techniques developed by the relevant international organizations". According to Annex A(3)(c) to the *SPS Agreement*, the international standards, guidelines, and recommendations relevant for plant health are those developed under the auspices of the IPPC in cooperation with regional organizations operating within the framework of the IPPC. Among the roles of the IPPC is the development of ISPMs. The two ISPMs Australia relies on are ISPM No. 2 and ISPM No. 11. ISPM No. 2 provides a framework describing the pest risk analysis process. ISPM No. 11 provides details for the conduct of pest risk analysis to determine if pests are quarantine pests and describes the integrated processes to be used for risk assessment, as well as the selection of risk management options.[376]

246. We note that, while Article 5.1 directs a Member conducting a pest risk assessment to take into account internationally developed risk assessment techniques, this does not mean that a risk assessment must be based on or conform to such techniques. Nor does it imply that compliance with such techniques alone suffices to demonstrate compliance with a Member's obligations under the *SPS Agreement*. However, reference by the risk assessor to such techniques is useful both to the risk

[375]Australia's appellant's submission, para. 97.

[376]Together, ISPM No. 2 and ISPM No. 11 present the general framework for conducting a pest risk assessment. (See *supra*, footnote 195 of this Report; and Panel Report, paras. 2.69 and 2.71)

assessor, should a dispute arise in relation to the risk assessment, and to the panel that is called upon to review the consistency of that risk assessment with the provisions of the *SPS Agreement*.[377]

247. We are not persuaded by Australia's argument that ISPM No. 2 and ISPM No. 11 only require identification of where expert judgement has been used and not of how it has been used. We observe that both ISPM No. 2 and ISPM No. 11 elaborate the transparency and documentation requirements for the entire risk assessment process from initiation to pest risk management, not excluding the use of expert judgement in situations of scientific uncertainty. It is clear from a complete reading of ISPM No. 2 and ISPM No. 11 that, in addition to the sections on "uncertainty" that call for the transparency and documentation of the nature and degree of uncertainty[378], the general sections on "documentation" specify that the entire pest risk analysis process should be sufficiently documented.[379]

248. In the light of the above, we consider that the Panel did not err in expressing the view that the IRA did not sufficiently document its use of expert judgement and that the IRA should have explained how it arrived at the expert judgements it made at intermediate steps. We also consider that the Panel did not err in requiring that the IRA base its conclusions, including those that were reached through the exercise of expert judgement, on the available scientific evidence and that, therefore, the Panel correctly assessed whether the reasoning in the IRA revealed the existence of an objective and rational link between the conclusions reached and the scientific evidence.

4. The Materiality of the Faults the Panel Found with the Reasoning of the IRA

249. Australia claims that the Panel erred in failing to assess the materiality of the faults it found in the intermediate conclusions reached in the IRA. Australia, relying on the panel report in *Australia – Salmon (Article 21.5 – Canada)*, maintains that the Panel should have asked, but erroneously failed to ask, whether any of the alleged flaws in the IRA's reasoning was "so serious" as to undermine

[377]We observe that the panel in *Japan – Apples* found that, while the language in Article 5.1 does not require that a risk assessment be "based on" or "in conformity with" risk assessment techniques of international organizations, it suggests that "reference to these risk assessment techniques can provide very useful guidance as to whether the risk assessment at issue constitutes a proper risk assessment within the meaning of Article 5.1." (Panel Report, *Japan – Apples*, para. 8.241)

[378]See ISPM No. 2, *supra*, footnote 195 of this Report, Section 3.1; and ISPM No. 11, *supra*, footnote 195 of this Report, Section 2.4.

[379]See ISPM No. 2, *supra*, footnote 195 of this Report, Section 3.3.2, which states that "the entire process from initiation to pest risk management should be sufficiently documented so that the sources of information and rationale for management decisions can be clearly demonstrated", and includes among the main elements to be documented, the "nature and degree of uncertainty and measures envisaged to compensate for uncertainty". Similarly, Section 4.1 of ISPM No. 11, *supra*, footnote 195 of this Report, requires that "[t]he whole process from initiation to pest risk management should be sufficiently documented so that when a review or a dispute arises, the sources of information and rationale used in reaching the management decision can be clearly demonstrated."

"reasonable confidence"[380] in the risk assessment as a whole. New Zealand rejects Australia's contention and argues that the Panel did focus on the materiality of the flaws it found in the intermediate steps of the IRA and that it properly assessed the cumulative effect of these flaws.

250. We start by observing that the panel in *Australia – Salmon (Article 21.5 – Canada)* did not purport to establish any general standard as to when individual flaws in a risk assessment will taint the risk assessment as a whole. In that specific case, the panel simply found that certain methodological flaws identified by the complainant were not serious enough for the panel to no longer have reasonable confidence in the risk assessment.[381] The panel reached the overall conclusion that it had reasonable confidence in the risk assessment at issue in that dispute based on all the other evidence it reviewed and on the advice of the experts that it had consulted.

251. We also note that, as already discussed, the Panel appears to have followed the suggestions made by the Appellate Body in *US/Canada – Continued Suspension* to review whether the *reasoning* articulated on the basis of the scientific evidence is objective and coherent and whether the *particular conclusions* drawn by the Member find sufficient support in the scientific evidence relied upon.[382] Whether a panel adopts this approach to review discrete steps in a risk assessment or whether it also reviews the overall justification may depend on the structure of the risk assessment at issue. This is consistent with the standard of review applicable to a panel reviewing claims under Article 5.1 of the *SPS Agreement*, according to which a panel's task is to review the risk assessment, not to itself perform the risk assessment.[383]

252. With respect to fire blight, the Panel followed the structure of the IRA and reviewed the eight individual importation steps, as well as the factors relating to entry, establishment and spread of the pest. The Panel made specific findings on the intermediate steps and factors because, as it noted in its conclusions on entry, establishment and spread of fire blight, there was no "separate justification and evidence in the IRA regarding the estimated overall likelihood of importation".[384]

253. The Panel found that for four importation steps (1, 2, 3, and 5) out of eight, the IRA's estimation of the probability of importation of fire blight did not find sufficient support in the scientific evidence relied upon and, accordingly, was not coherent and objective.[385] In respect of two importation steps (4 and 6), the Panel found that New Zealand had failed to make a *prima facie* case

[380]Australia's appellant's submission, para. 90 (quoting Panel Report, *Australia – Salmon (Article 21.5 – Canada)*, para. 7.57).
[381]Panel Report, *Australia – Salmon (Article 21.5 – Canada)*, para. 7.57.
[382]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 591.
[383]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 590.
[384]Panel Report, para. 7.447.
[385]Panel Report, paras. 7.259, 7.275, 7.290, and 7.320.

that the IRA's estimation of the likelihood of importation was not coherent and objective.[386] Only in respect of one importation step (7) did the Panel find that the IRA's estimation of the likelihood of importation appeared to be coherent and objective. The Panel subsequently found, however, that the IRA's choice of the probability interval 0 to 10^{-6} for events with a "negligible" likelihood of occurring, which was the interval assigned to this importation step, was not coherent and objective.[387] The Panel also found that the IRA's analysis of exposure, of establishment, and of spread of fire blight rested on a number of assumptions and qualifications that led to reasonable doubts about the evaluation made, and that the IRA had "not properly considered a number of factors that could have [had] a major impact on the assessment of this particular risk".[388]

254. Regarding the potential biological and economic consequences of fire blight, the Panel found that the IRA had a tendency to overestimate the severity of the consequences of fire blight, particularly in respect of the criteria concerning plant life or health, and domestic trade or industry, which had been assigned the most severe scores of "F" and "E", respectively. The Panel therefore concluded that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of fire blight in Australia did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[389]

255. Moreover, the Panel found that the IRA contained certain methodological flaws that magnified the risk assessed and that, because of these flaws, the IRA was not a proper risk assessment within the meaning of Article 5.1 of the *SPS Agreement*.

256. With respect to ALCM, the Panel found that the IRA's analysis of the likelihood of entry, establishment and spread contained flaws that were enough to create reasonable doubts about the evaluation made, and that the IRA had "not properly considered a number of factors that could have [had] a major impact on the assessment of this particular risk".[390] According to the Panel, the IRA's failures to take properly into account ALCM viability, the impact of parasitism, ALCM's period of emergence, climatic conditions, and mode of trade, were "enough to cumulatively create reasonable doubts about the risk assessment with respect to its evaluation of the likelihood of entry, establishment and spread of ALCM".[391]

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[386]Panel Report, paras. 7.306 and 7.331.
[387]Panel Report, para. 7.342. In respect of importation step 8, New Zealand did not question the IRA's estimation that the likelihood that *Erwinia amylovora* survives and remains with the fruit after on-arrival border procedures is 1 (100 per cent). (Panel Report, paras. 7.347-7.349)
[388]Panel Report, para. 7.448.
[389]Panel Report, paras. 7.469 and 7.470.
[390]Panel Report, para. 7.868.
[391]Panel Report, para. 7.871.

257. Regarding the potential biological and economic consequences of ALCM, the Panel found that the IRA had a tendency to overestimate the severity of the consequences of ALCM, particularly in respect of the criteria concerning plant life or health, control or eradication, domestic trade or industry, and international trade, which had all been assigned the most severe score of "D". The Panel also found that the IRA's analysis of potential consequences did not adequately consider the issues of geographic range and climatic conditions necessary for ALCM establishment. The Panel therefore concluded that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of ALCM into Australia did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[392]

258. In our view, the Panel's analysis reveals that it considered that the faults it found with the IRA's reasoning on the importation steps and the factors relating to entry, establishment and spread were numerous and serious enough to render the IRA inconsistent with Article 5.1 of the *SPS Agreement*. As we have explained above, we do not consider that a panel is required to establish whether each fault it finds with a risk assessment is, in itself, serious enough to undermine the entire risk assessment. A comprehensive analysis of all the steps and factors reviewed may be sufficient to determine whether various flaws are, when taken together, serious enough to render a risk assessment one that does not constitute a proper risk assessment within the meaning of Article 5.1 of the *SPS Agreement*. Moreover, whether a panel reviews the risk assessment as a whole, or whether it bases its overall conclusions on the analyses of the individual steps and factors reviewed, will depend on the type and structure of risk assessment reviewed, and possibly on how a complainant presents and develops its claims. In this case, and in particular in the light of the way in which the IRA conducted its analysis, the approach adopted by the Panel was appropriate.

259. The Panel reached its conclusions based on a comprehensive analysis of all the steps and factors it reviewed and also indicated that the IRA failed to consider properly a number of factors that could have a *major* impact on the assessment of risk for fire blight and ALCM.[393] Although the Panel did not in its reasoning explicitly analyze the relative gravity, or magnitude, of the flaws that it found at each relevant importation step or each factor relating to the entry, establishment and spread of fire blight and ALCM, the Panel clearly indicated that taken together these faults were enough to mean that the IRA did not constitute a proper risk assessment within the meaning of Article 5.1 of the *SPS Agreement*. Therefore, in the light of the above, we consider that the Panel properly assessed whether the IRA is a risk assessment within the meaning of Article 5.1 of the *SPS Agreement*, based on a comprehensive analysis of the individual steps and factors analyzed in the IRA.

[392]Panel Report, paras. 7.883-7.885.
[393]Panel Report, paras. 7.448 and 7.868.

260. For these reasons, we dismiss Australia's claim that the Panel erred in not assessing the materiality of the faults it found in the intermediate conclusions reached in the IRA in respect of fire blight and ALCM.

D. *Conclusion*

261. In the light of the above, we consider that the Panel did not err in finding that the IRA is not a proper risk assessment within the meaning of Article 5.1 and Annex A(4) to the *SPS Agreement* and that the flaws that the Panel found in the IRA also constituted a failure, under Article 5.2 of the *SPS Agreement*, to take sufficiently into account factors such as the available scientific evidence, the relevant processes and production methods in New Zealand and Australia, and the actual prevalence of fire blight and viable ALCM.[394]

262. For these reasons, we *uphold* the Panel's finding, in paragraphs 7.906 and 8.1(c) of the Panel Report, that Australia's SPS measures regarding fire blight and ALCM, as well as the "general" measures linked to these pests, are inconsistent with Articles 5.1 and 5.2 of the *SPS Agreement*, and that, by implication, these measures are also inconsistent with Article 2.2 of the *SPS Agreement*.[395]

VII. Article 11 of the DSU

263. We now turn to Australia's claim that the Panel failed to fulfil its duty under Article 11 of the DSU to make an objective assessment of the matter before it, and Australia's consequent request that we reverse the Panel's findings that its measures for fire blight and ALCM, as well as the "general" measures that are linked to these pests, are inconsistent with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*.

264. Australia asserts that the Panel failed to make an objective assessment of the matter, as required by Article 11 of the DSU, because it disregarded critical aspects of the appointed experts' testimony that were favourable to Australia. Australia also argues that the Panel acted inconsistently with Article 11 of the DSU because its conclusions were based upon a fundamental misunderstanding of a significant aspect of Australia's risk assessment methodology.

265. We have already concluded that the Panel did not misinterpret or misapply Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*, and that it employed the correct standard of review in its assessment of the conformity of the IRA with these provisions. In this section, we consider, first, whether the Panel

[394]Panel Report, paras. 7.471, 7.510, 7.886, and 7.904.
[395]See also Panel Report, paras. 7.472, 7.510, 7.887, and 7.905.

committed an error under Article 11 of the DSU, because it disregarded expert testimony that was relevant to Australia's case, and second, whether the Panel misunderstood the methodology employed in the IRA to perform the risk assessment.

A. *The Panel's Treatment of Testimony by Its Appointed Experts*

266. Australia highlights that a panel's duty to make an objective assessment of the matter includes a requirement that the panel engage with all of the important evidence before it that is relevant to the matter.[396] In Australia's view, a panel errs when it fails to give significant evidence proper, genuine, and realistic consideration and assess its significance.[397] Australia contends that the Panel disregarded critical aspects of its appointed experts' testimony that were favourable to Australia. Australia relies on the Appellate Body reports in *US/Canada – Continued Suspension* to argue that if, in that dispute, the panel erred by merely reproducing testimony and not assessing its significance, the Panel in the present dispute committed an even more serious error because, in several instances, it entirely overlooked testimony that was favourable to Australia's case.[398] Australia claims that merely reproducing testimony without discussing it, or disregarding it entirely, constitutes a failure to make an objective assessment of the facts, and stresses the importance of the overlooked testimony to its case.[399]

267. New Zealand responds that a panel enjoys discretion in assessing whether a given piece of evidence is relevant for its reasoning, and is not required to discuss, in its report, each and every piece of evidence.[400] New Zealand highlights the differences between the circumstances of this case and those of *US/Canada – Continued Suspension*. New Zealand points out that, in the latter case, there were justifiable doubts as to the independence or impartiality of the two experts on whom the panel relied extensively, whereas the experts relied upon by the Panel in this case are clearly independent and impartial.[401]

268. We begin by recalling that the text of Article 11 of the DSU states in relevant part that:

> ... a panel should make an objective assessment of the matter before it, including an objective assessment of the facts of the case and the applicability of and conformity with the relevant covered agreements, and make such other findings as will assist the DSB in making the recommendations or in giving the rulings provided for in the covered agreements.

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[396]Australia's appellant's submission, para. 128.
[397]Australia's appellant's submission, para. 130.
[398]Australia's appellant's submission, para. 133.
[399]Australia's appellant's submission, para. 130.
[400]New Zealand's appellee's submission, para. 2.207.
[401]New Zealand's appellee's submission, para. 2.209.

269. In *EC – Hormones*, the Appellate Body stated that "[t]he duty to make an objective assessment of the facts is, among other things, an obligation to consider the evidence presented to a panel and to make factual findings on the basis of that evidence".[402] Accordingly, the "deliberate disregard of" or "refusal to consider" evidence is incompatible with a panel's duty to make an objective assessment of the facts. In *US – Continued Zeroing*, the Appellate Body found that the duty to make an objective assessment of the facts of the case "requires a panel to consider evidence before it in its totality, which includes consideration of submitted evidence in relation to other evidence".[403]

270. In *US/Canada – Continued Suspension*, the Appellate Body further clarified that a panel should not disregard and has a duty to engage with evidence that is relevant to the case of one of the parties.[404] The Appellate Body also found that a panel may rely on the advice of experts to review a Member's SPS measures, and that in doing so the panel must respect the due process rights of the parties and its limited role of review.[405] How a panel treats the evidence that is presented to it, including expert testimony, may affect the parties' substantive rights in a dispute as well as their rights to due process. A panel's choice not to discuss a piece of evidence that on its face appears to be favourable to the arguments of one of the parties might suggest bias or lack of even-handedness in the treatment of the evidence by the panel[406], even if in fact the panel is making an objective assessment of the facts.

271. The Appellate Body has, however, also clarified that, as the "trier of facts", a panel enjoys a margin of discretion in the assessment of the facts, including the treatment of evidence. In *EC – Hormones*, the Appellate Body found that "it is generally within the discretion of the [p]anel to decide which evidence it chooses to utilize in making findings", and that a "[p]anel cannot realistically refer to all statements made by the experts advising it and should be allowed a substantial margin of discretion as to which statements are useful to refer to explicitly".[407] In *EC – Asbestos*, the Appellate Body recognized that a panel enjoys a margin of discretion in assessing the value of and the weight to be ascribed to the evidence and that a panel is "entitled, in the exercise of its discretion, to determine that certain elements of evidence should be accorded more weight than other elements".[408] In *US – Wheat Gluten*, the Appellate Body also stated that "in view of the distinction between the respective roles of the Appellate Body and panels ... we will not interfere lightly with the panel's exercise of its discretion".[409] More recently, in *Brazil – Retreaded Tyres*, the Appellate Body further clarified that

[402]Appellate Body Report, *EC – Hormones*, para. 133.
[403]Appellate Body Report, *US – Continued Zeroing*, para. 331.
[404]Appellate Body Reports, *US/Canada – Continued Suspension*, paras. 553 and 615.
[405]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 592.
[406]Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, paras. 292-295.
[407]Appellate Body Report, *EC – Hormones*, paras. 135 and 138.
[408]Appellate Body Report, *EC – Asbestos*, para. 161.
[409]Appellate Body Report, *US – Wheat Gluten*, para. 151.

"[a] panel enjoys discretion in assessing whether a given piece of evidence is relevant for its reasoning, and is not required to discuss, in its report, each and every piece of evidence."[410]

272. The panel's discretion as the trier of facts, however, finds its limitations in the applicable standard of review of Article 11 of the DSU. In making "an objective assessment of the facts of the case" under Article 5.1 of the *SPS Agreement*, a panel cannot use the evidence, including the testimony of its appointed experts, to conduct its own risk assessment. Rather, the panel must use such evidence to review the risk assessment of the WTO Member.

273. In arguing that the Panel violated Article 11 of the DSU, Australia relies on the Appellate Body reports in *US/Canada – Continued Suspension*. In that dispute, the Appellate Body found that by reproducing but not assessing the significance of the testimony of some experts, the panel effectively disregarded evidence that was potentially relevant to the case of one of the parties, and this was one of the bases for the Appellate Body's finding that the panel in those disputes had acted inconsistently with Article 11 of the DSU.[411]

274. We observe that the passage in *US/Canada – Continued Suspension* relied upon by Australia is part of the Appellate Body's broader findings regarding the panel's application of the standard of review under Article 11 of the DSU.[412] In those disputes, the Appellate Body found that the panel, instead of reviewing the European Communities' risk assessment in accordance with the applicable standard of review, "conducted a survey of the advice presented by the scientific experts and based its decisions on whether the majority of the experts ... agreed with the conclusion drawn in the European Communities' risk assessment".[413] The panel's disregard of certain testimony relevant to the European Communities was thus only one element that the Appellate Body considered in the panel's overall "assessment of the facts", the others being the panel's use of the experts' testimony to effectively conduct its own risk assessment and the panel's undue reliance on the view of the majority within the scientific community, while ignoring views that were favourable to the European Communities.[414]

275. Regarding the Panel's treatment of the evidence, we consider that its role as the trier of facts requires it to review and consider all the evidence that it receives from the parties or that it seeks pursuant to Article 13 of the DSU. Nonetheless, as the Appellate Body explained in *EC – Hormones*, a panel cannot be expected to refer to all the statements made by the experts it consulted.[415] To reproduce every statement made by the experts in the report is neither a necessary nor a sufficient

[410]Appellate Body Report, *Brazil – Retreaded Tyres*, para. 202. (footnote omitted)
[411]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 615.
[412]Appellate Body Reports, *US/Canada – Continued Suspension*, paras. 585-616.
[413]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 598.
[414]Appellate Body Reports, *US/Canada – Continued Suspension*, paras. 597 and 598.
[415]Appellate Body Report, *EC – Hormones*, para. 138.

condition for a panel to perform its function in accordance with Article 11 of the DSU. Article 11 requires a panel, in its reasoning on a given issue, to weigh and balance all the relevant evidence, including testimony by the experts. A panel may reproduce the relevant statements by the experts, but still fail to make an objective assessment of the facts under Article 11 if it then fails to properly assess the significance of these statements in its reasoning, as the Appellate Body found in *US/Canada – Continued Suspension*. Conversely, a panel that does not expressly reproduce certain statements of its appointed experts may still act consistently with Article 11, especially when the panel's reasoning reveals that it has nevertheless assessed the significance of these statements or that these statements are manifestly not relevant to the panel's objective assessment of the facts and issues before it.

276. Whether a panel reproduces and discusses certain testimony in the report depends on factors such as the relevance of the testimony to the panel's reasoning and objective assessment on a given issue, the context in which the statement was made, as well as the importance attached by the parties to the testimony. Moreover, a panel's failure to reproduce and discuss one statement by one expert will in itself rarely, if ever, be enough to invalidate that panel's overall assessment of the facts of a case. As was the case in *US/Canada – Continued Suspension*, a panel's disregard of certain experts' testimony may be evidence of a more systematic fault in the standard of review applied by that panel in its overall assessment of the facts of the case.

277. In this dispute, we have already found that the Panel did not err in its application of the standard of review in its assessment of the IRA under Article 5.1 of the *SPS Agreement*. We now consider whether the Panel's treatment of the experts' testimony amounts to a failure to make an objective assessment of the facts under Article 11 of the DSU.

278. In addressing Australia's appeal concerning the Panel's treatment of expert testimony, we review the individual statements Australia alleges that the Panel disregarded. We then consider the context in which each such statement was made, as well as the importance that Australia attached to these statements in the proceedings before the Panel. We next consider whether the Panel in fact failed to reproduce and discuss a certain statement in the Report, whether that statement was clearly pertinent and significant to the Panel's reasoning, and, if so, whether the reasoning reveals that the Panel nonetheless took that statement into consideration. Finally, after reviewing the Panel's treatment of the individual statements, we consider whether in its overall treatment of expert testimony the Panel failed to make an objective assessment of the facts under Article 11 of the DSU.

279. We start by recalling that, in addressing the matter in this dispute, the Panel sought the advice of seven experts in four different fields (fire blight, European canker, ALCM, and pest risk assessment). The Panel selected and appointed: Dr. Tom Deckers and Dr. Jean-Pierre Paulin in the

field of fire blight; Dr. Bernardo Latorre and Dr. Terence Swinburne in the field of European canker; Dr. Jerry Cross in the field of ALCM; and Dr. Gritta Schrader and Dr. Ricardo Sgrillo in the field of pest risk assessment.[416]

280. In its appeal against the Panel's treatment of expert testimony, Australia challenges the Panel's treatment of certain statements by the appointed experts, which were allegedly favourable to its case, in six different areas. Specifically, Australia challenges the Panel's treatment of: (i) a statement by Dr. Deckers on the *overall probability of importation*; (ii) a statement by Dr. Deckers on *exposure*; (iii) a statement by Dr. Deckers and a statement by Dr. Paulin on the *potential consequences of fire blight*; (iv) a statement by Dr. Deckers on the *limitation of exports to mature, symptomless apples*; (v) a statement by Dr. Schrader on the *use of uniform distribution*; and (vi) a statement by Dr. Cross on the *potential consequences of ALCM*.

281. Regarding (i) the *overall probability of importation* of apples infested or infected with fire blight, Australia argues that the Panel failed to consider Dr. Deckers' statement that he "[did not] feel that there was an exaggeration of the estimation there in the importation steps".[417] Australia contends that this statement qualifies significantly Dr. Deckers' earlier statement, upon which the Panel did rely, that the probability of importation "could be" overestimated.[418]

282. New Zealand responds that Dr. Deckers' oral statement concerning the overall probability of importation does not support Australia's position because Dr. Deckers considered that the likelihoods assessed under importation steps 2, 3, and 5, which were aggregated as parts of the overall probability of importation, were overestimated.[419]

283. We observe that the Panel did not reproduce Dr. Deckers' oral statement, or expressly refer to it as part of its discussion of the other statements by Dr. Deckers and by the other experts on the probability of importation through the eight importation steps and on the overall probability of importation of fire blight. The Panel does, however, include a cross-reference to this oral statement by Dr. Deckers in a footnote to its discussion of Dr. Deckers' written statement that the IRA's overall probability of importation value could be overestimated, which states: "But see, Dr. Deckers's reply in Transcript of the Panel's meeting with experts, para. 259".[420]

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[416]Panel Report, para. 1.33.

[417]Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Dr. Deckers, para. 259.

[418]Australia's appellant's submission, para. 137 (quoting Dr. Deckers' response to Panel Question 34, Panel Report, Annex B-1, para. 237).

[419]New Zealand's appellee's submission, para. 2.221.

[420]Panel Report, footnote 1595 to para. 7.356.

284. Dr. Deckers' statement that the probability of importation could be overestimated is part of Dr. Deckers' written reply to Panel Question 34.[421] In contrast, Dr. Deckers' statement that he did not think that there was an exaggeration of the estimation in the importation steps was part of an oral reply provided by Dr. Deckers to a question posed by the Panel at the meeting with the experts.[422] This testimony must be understood in the context of the discussion that preceded and followed it. Moreover, the purpose of the meeting between the Panel and the experts was to "allow the experts to elaborate and clarify the written responses submitted to the questions that were posed by the Panel, and to respond to the comments made to those responses by the Parties".[423] Therefore, the statements made by the experts at the meeting with the Panel should not be assessed in isolation, but in the light of the written responses that the meeting was intended to clarify and elaborate.

285. We observe that, in making his oral statement that he did not think that there was an exaggeration, Dr. Deckers was answering a question posed by one of the panelists about the relationship between the estimation of the individual importation steps and the overall probability of importation of fire blight. Specifically, the panelist had asked the experts to comment on Australia's view that there was sufficient support from the experts for the IRA's reasoning on certain individual importation steps to suggest that "any purported exaggeration of the probability range is not a serious flaw".[424] It would appear, therefore, that in Dr. Deckers' reply that there was no "exaggeration of the estimation *there* in the importation steps", the word "there" refers to those importation steps that the experts, including himself, had found to be based on scientific evidence, not to those steps he had found to be overestimated or to the overall probability of importation. In this respect, we recall that Dr. Deckers had testified that the values assigned by the IRA to importation steps 2, 3, and 5 were

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[421]Dr. Deckers' response to Panel Question 34, Panel Report, Annex B-1, para. 237.

[422]Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Dr. Deckers, para. 259.

[423]Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Chairman of the Panel, para. 14.

[424]Paragraphs 257 and 259 of the Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, read:

> Kirsten Hillman
>
> 257. ... Australia argues that while the experts expressed some doubts about the overall probability of importation of *E amylovora*, this conclusion should be weighed against the specific support for individual importation steps, that is support from the experts. In Australia's view, there is sufficient support for the detail of the IRA team's reasoning to suggest that "any purported exaggeration of the probability range is not a serious flaw". So we would like the experts to comment on this statement by Australia and if it adequately reflects your view on the matter.
>
> Dr Deckers
>
> 259. As far as I have understood in this area, 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.

overestimated, and that the overall probability of importation of 3.9 per cent could be overestimated.[425]

286. We also note New Zealand's argument that Dr. Deckers' oral statement that he did not think that there was an exaggeration should be understood as referring to the IRA's methodology based on ten importation scenarios, rather than to the individual steps or to the overall probability of importation, which he had characterized as "overestimated" in other testimony. In other words, New Zealand understands that, in making this oral statement, Dr. Deckers was expressing the view that the aggregation and combination of the different importation steps and importation scenarios by the IRA did not result in an exaggerated estimate *beyond* the overestimation that he had already indicated that he considered existed with certain individual importation steps.

287. We consider, therefore, that, under either of the interpretations reviewed above, the oral statement by Dr. Deckers can be read to be consistent with his views, expressed in his written replies, that importation steps 2, 3, and 5 were overestimated and the overall probability of importation could be overestimated.[426] In any event, Dr. Deckers' statement is not without ambiguity and does not clearly support Australia's argument.

288. For the reasons explained above, we consider that Australia has not established that the Panel disregarded any apparent contradictions in the testimony of Dr. Deckers on the IRA's estimations of the probability of importation of fire blight. It appears from a careful reading of the Panel Report that the Panel did not "effectively disregard" relevant testimony in its assessment of the IRA's estimation of the overall probability of importation. While the Panel could have provided some explicit reasoning as to why it chose to rely on the other written statements that Dr. Deckers made on the same issue, we do not consider that its failure to do so, in the circumstances of this dispute, amounts to disregarding or failing to engage with significant evidence that was relevant to Australia's case.

289. Regarding (ii) *exposure*, Australia argues that in its analysis of this factor the Panel relied on Dr. Deckers' initial written testimony that the chance of epiphytic fire blight bacteria being transmitted from an imported apple to the susceptible organs of a host plant at the appropriate moment

[425]In response to specific questions on the IRA's estimation of the likelihoods of importation for importation steps 2, 3, and 5, Dr. Deckers replied that the value assigned to importation step 2 was "a quite high rate"; that for importation step 3 the "overall chance of 1% seems to be rather high"; and that the estimation for importation step 5 was not "sufficiently in accordance with the standards of the scientific community". (See Dr. Deckers' responses to Panel Questions 24, 26, and 30, Panel Report, Annex B-1, paras. 173, 186, and 215, respectively)

[426]We note that, at the Panel's meeting with the scientific experts, Australia did not ask Dr. Deckers to elaborate or clarify his statement that he did not think that there was an exaggeration of the estimation in the importation steps. Nor did Australia raise this issue at the second substantive meeting of the parties with the Panel.

to realize an infection was "rather small", without reproducing or assessing the significance of Dr. Deckers' clarifying oral testimony that he thought the IRA's estimation of the probability of exposure as 0 to 10^{-6} was "very low" and thus "true".[427]

290. The Panel does not reproduce Dr. Deckers' oral statement, or expressly refer to it as part of its discussion of the other statements by Dr. Deckers and by the other experts on the probability of exposure. However, we consider that the Panel's reasoning on exposure reflects Dr. Deckers' statement that the probability value of 0 to 10^{-6} assigned by the IRA for exposure is "very low" and, therefore, "true".

291. We first observe that in his written statement on exposure Dr. Deckers reached the conclusion that the chance of transfer by insects was "rather small" having observed that "[f]eeding of insects on discarded apple fruits is not described in the biological cyclus of [*Erwinia amylovora*] as a factor for the spread of the disease" and that "[a]n insect feeding on a discarded fruit is not considered to be a normal way of spreading the disease between an infected fruit and an other host plant".[428]

292. We recall that the Panel concluded that the IRA's overall analysis of exposure was not coherent and objective. At the same time, the Panel appeared to accept the IRA's reasoning regarding the possibility of transfer through browsing insects. The Panel found that, "[t]he browsing insects scenario ... is based on events that cannot be completely dismissed" and that "[i]n any event, the probability value assigned to such event should be commensurate to the extremely low likelihood of transmission through the browsing insects scenario."[429] According to the Panel, "[t]he IRA's conclusions on the transfer mechanisms are not supported by scientific evidence, most especially for the proposed mechanical transmission mechanism".[430] However, the Panel also stated that transfer by browsing insects, "while not totally unreasonable, seems to correspond to a highly unlikely scenario".[431] In this respect, we observe that Dr. Deckers' reply that the value assigned by the IRA to exposure was "very low" and thus "true" was an elaboration on his written reply that the chance of transmission by browsing insects was "rather small".[432]

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[427]Australia's appellant's submission, para. 139 (quoting Dr. Deckers' response to Panel Question 35, Panel Report, Annex B-1, para. 240; and Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Dr. Deckers, para. 297).

[428]Dr. Deckers' response to Panel Question 35, Panel Report, Annex B-1, para. 240.

[429]Panel Report, para. 7.403.

[430]Panel Report, para. 7.417.

[431]Panel Report, para. 7.417.

[432]We note that, at the Panel's meeting with the scientific experts, Australia did not ask Dr. Deckers to clarify or further elaborate on his statement on exposure in relation to his written response that the chance of transmission by browsing insects was very small. Nor did Australia raise this issue at the second substantive meeting of the parties with the Panel.

293. In the light of the above, we do not consider that Australia has established that the Panel's failure to reproduce or discuss Dr. Deckers' statement that a "very low" value is correct for the IRA's assigned probability of exposure amounted to disregarding or failing to engage with significant evidence that was relevant to Australia's case.

294. Regarding (iii) the *potential biological and economic consequences of fire blight*, Australia argues that the Panel relied exclusively on certain testimony by Dr. Paulin to the effect that certain individual impact scores in the assessment of consequences "could be exaggerated", but failed to reproduce or assess the significance of favourable testimony given by Dr. Deckers and Dr. Paulin, both of whom rated the overall potential biological and economic consequences of fire blight as "high".[433]

295. New Zealand responds that the Panel chose to rely primarily on Dr. Paulin's views because they were more comprehensive and detailed on this issue than those of Dr. Deckers, and because Dr. Deckers' response to Panel Question 11 and his testimony were of limited assistance in considering whether the IRA's evaluation of the potential consequences associated with the entry, establishment and spread of fire blight was coherent and objective.[434]

296. The Panel found that, according to the experts it had consulted, the IRA had a tendency to overestimate the severity of the consequences of fire blight, particularly on plant life or health and on domestic trade.[435] The Panel relied on the testimony of Dr. Paulin that the most severe individual impact scores assigned by the IRA to certain criteria were too high, exaggerated, or unrealistic. The Panel concluded that the IRA's evaluation of the potential consequences associated with the entry, establishment or spread of fire blight into Australia did not rely on adequate scientific evidence and, accordingly, was not coherent and objective.[436]

297. The Panel, however, did not reproduce or discuss Dr. Deckers' testimony on the potential consequences of fire blight[437], although this testimony is cross-referenced in a footnote to the paragraph where the Panel discusses Dr. Paulin's testimony.[438] Nor did the Panel reproduce or discuss Dr. Paulin's general statement that he considered the qualification of "high" for the impact of fire blight to be appropriate, based on the possible international consequences of fire blight.[439]

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[433]Australia's appellant's submission, paras. 142 and 145.
[434]New Zealand's appellee's submission, para. 2.228.
[435]Panel Report, para. 7.469.
[436]Panel Report, para. 7.470.
[437]Dr. Deckers' response to Panel Question 11, Panel Report, Annex B-1, para. 85.
[438]Panel Report, footnote 1796 to para. 7.465.
[439]Dr. Paulin's response to Panel Question 11, Panel Report, Annex B-1, para. 94.

298. We start by observing that Dr. Deckers' and Dr. Paulin's general statements that the consequences of fire blight can be classified as "high" may appear on their face to be inconsistent with the Panel's finding that the IRA's evaluation of the potential consequences of fire blight does not rely on adequate scientific evidence and it is not objective and coherent, given that the IRA also estimated the potential biological and economic consequences of fire blight as "high". We observe that under Article 5.1 of the *SPS Agreement* a panel is called to review the objectivity and coherence of the risk assessment, not whether the results of the risk assessment are correct and correspond to the results the panel itself would reach based on the advice of the appointed experts. To the contrary, a panel must not use the experts to second-guess the risk assessor by conducting its own risk assessment; rather, it has to review the risk assessment and verify that it is objective and coherent, that is, sufficiently based on the relevant scientific evidence.

299. The general statements by Dr. Deckers and Dr. Paulin that the consequences of fire blight can be classified as "high" were not determinative of the Panel's assessment of whether the reasoning in the IRA on the potential consequences of fire blight was objective and coherent. The Panel expressly recognized, in this regard, that "[i]t is not the Panel's role to reassess the impact scores assigned by the IRA to specific criteria and propose different scores".[440] The Panel chose to rely on the testimony by Dr. Paulin that explained why certain impact scores assigned by the IRA to individual direct and indirect criteria were not based on the scientific evidence, and considered that this cast doubt on the objectivity and coherence of the IRA's conclusions on the potential consequences of fire blight.[441] The Panel, therefore, correctly used the appointed experts to review the IRA's risk assessment, not to conduct a *de novo* review.

300. We further note that Australia quotes only the first part of Dr. Deckers' testimony on the potential consequences of fire blight. However, in the same written response to the question by the Panel, Dr. Deckers qualifies his appreciation of the potential consequences of fire blight as "high", by stating that the consequences depend also on the successful establishment and spread of fire blight within Australia, that the different regions in Australia will not have all the appropriate climatological conditions for an optimal infection and development of fire blight, and that there will be differences in disease development from one year to another.[442] Moreover, Australia relies on Dr. Paulin's statement that he considers the qualification of "high" for the impact of fire blight to be appropriate, without accounting for the fact that Dr. Paulin states that his view is based on the possible "international consequences" of fire blight introduction, not on the possible consequences in Australia.

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[440]Panel Report, para. 7.468.
[441]Panel Report, para. 7.470.
[442]Dr. Deckers' response to Panel Question 11, Panel Report, Annex B-1, para. 86.

301. It appears, therefore, that Australia focuses on the parts of Dr. Deckers' and Dr. Paulin's testimony that it considers favourable to its case, while leaving aside aspects of the same testimony that appear to confirm the Panel's finding that the IRA's conclusions on the potential biological and economic consequences of fire blight were not objective and coherent.

302. On balance, we do not consider that Australia has established that the Panel disregarded the general statements by Dr. Deckers and Dr. Paulin that the consequences of fire blight can be classified as "high", because the Panel did not set out to, and did not, decide whether the IRA's qualification of the potential consequences of fire blight as "high" was right or wrong, but instead assessed whether the IRA's conclusions were objective and coherent, that is, based on the scientific evidence. Again, however, the fact that on their face these statements appear to contradict the Panel's findings that the IRA's analysis of the potential consequences of fire blight was not objective and coherent means that the Panel's reasoning would have been clearer if it had explained its treatment of these two statements and their relationship to its conclusions.

303. Australia further argues that the Panel, in its assessment of the potential biological and economic consequences, failed to engage with or refer to the evidence of actual production losses caused by outbreaks of fire blight at Hawkes Bay, New Zealand, in 1998, and in Michigan, United States, in 2000.

304. The fact that the Panel did not explicitly review specific instances of fire blight outbreaks and relevant economic losses is consistent with the Panel's conclusion, based on Dr. Paulin's testimony, that "it is just not possible ... that fire blight would be devastating to the same degree in every place and on every plant as soon as introduced in a new area".[443] As we have considered above, while a panel should review all the evidence that is presented to it, it is not required to discuss in its report each piece of evidence that is submitted to it and enjoys discretion in assessing whether a given piece of evidence is more relevant for its reasoning than another. In this context, we consider that Australia has not established that the Panel disregarded or failed to engage with significant evidence merely because the Panel did not, in its Report, refer to the evidence of actual production losses caused by outbreaks of fire blight at Hawkes Bay and in Michigan.

305. Regarding (iv) the *limitation of exports to mature, symptomless apples*, Australia contends that the Panel reproduced, but dismissed without explanation, the testimony given by Dr. Deckers that

[443]Panel Report, para. 7.465.

"[t]he limitation of apple exports to mature symptomless apples is not enough to achieve Australia's ALOP".[444]

306. The Panel reproduced and discussed this testimony by Dr. Deckers in the Article 5.6 section of its Report, considering that the statement concerned New Zealand's proposed alternative measure. The Panel noted that "Dr Deckers is sceptical whether New Zealand's alternative measure would achieve Australia's ALOP on its own", but relied on Dr. Deckers' explanation that "apple fruit are not considered an important way of spreading the fire blight disease and thus the trade in apple fruit in Europe is not subject to fire blight control measures".[445]

307. The Panel explained that, in spite of Dr. Deckers' statement expressing scepticism about New Zealand's alternative measure, it reached a different conclusion based on other testimony of Dr. Deckers and Dr. Paulin showing "that they consider the overall risk of fire blight entry, establishment and spread through mature, symptomless apples imported from New Zealand to be very low – both overall and in regard to specific key points in the import scenario assessed by the IRA."[446] In the light of this, we do not think that Australia has established that the Panel disregarded or failed to engage with Dr. Deckers' testimony about the suitability of New Zealand's alternative measure to meet Australia's appropriate level of protection.

308. Regarding (v) the *use of uniform distribution*, Australia claims that the Panel's finding that the use of this model was unjustified emphasized Dr. Sgrillo's testimony that the IRA should have used a triangular distribution and the part of Dr. Schrader's testimony that stated that uniform distribution is the least realistic of the three distributions. Australia, however, alleges that the Panel failed to reproduce or assess the significance of Dr. Schrader's statement that uniform distribution is useful in situations presenting "a high degree of uncertainty" and where there is insufficient information to determine the most likely value.[447]

309. As a preliminary matter, we note that we do not read the Panel Report as denying the usefulness of uniform distribution *per se*. Rather, the Panel found that the use of uniform distribution in combination with the IRA's "negligible" interval (0 to 10^{-6}) results in an overestimation of the likelihood of occurrence of events described as ones that "would almost certainly not occur".[448] Moreover, the Panel discussed the different types of distribution and concluded that "uniform

[444]Dr. Deckers' response to Panel Question 15, Panel Report, Annex B-1, para. 117.
[445]Panel Report, para. 7.1191.
[446]Panel Report, paras. 7.1191 and 7.1192. See also *infra*, footnote 575 of this Report.
[447]Australia's appellant's submission, paras. 147 and 148 (quoting Dr. Schrader's response to Panel Question 135, Panel Report, Annex B-1, para. 781).
[448]See the IRA's "nomenclature" table, *supra*, para. 147 of this Report.

distribution is the simplest, but *in the circumstances of this case* ... it tends to generate less realistic samples".[449]

310. We consider that the Panel was not required to discuss Dr. Schrader's testimony about the usefulness of uniform distribution in a situation where it had concluded that the conditions for the use of this type of distribution were not present. In this respect, the Panel's reliance on the testimony of Dr. Sgrillo—suggesting the use of a triangular distribution for the modelling of events with a negligible likelihood of occurring—is not inconsistent with Dr. Schrader's testimony on uniform distribution and falls within the Panel's discretion in the weighing and balancing of the evidence. In the circumstances, Australia has not established that, by not reproducing or assessing part of Dr. Schrader's testimony about the usefulness of uniform distribution, the Panel disregarded or failed to engage with evidence that Australia claims was relevant to its case.

311. Regarding (vi) the *potential biological and economic consequences of ALCM*, Australia argues that the Panel reproduced Dr. Cross' testimony opining that certain individual impact scores assigned by the IRA were too severe and that a more credible score could have been assigned, but failed to reproduce or assess the significance of Dr. Cross' testimony that, even assuming that the most severe scores were reassigned, this would not result in a change of the rating of the overall consequences as "low" and that, in this respect, "the conclusion of Australia's analysis was objective and credible".[450]

312. In the case of ALCM, we observe that the Panel based its conclusions with respect to the potential consequences also on the fact that the IRA failed to analyze the issue of the existence of climatic conditions necessary for establishment and spread of ALCM within Australia or the geographic range of these conditions. Dr. Cross had stated, in respect of the entry, establishment and spread of ALCM, that the IRA had failed to establish the geographic and climatic limits for establishment and spread of ALCM and that a "climatic analysis would also have given a better assessment of the likely impact of ALCM in different areas of Australia".[451] Therefore, Dr. Cross' overall appraisal of consequences should be qualified by the views on geographic and climatic factors that he had expressed in respect of the entry, establishment and spread of ALCM.

313. We have stated above that we do not consider the Panel to have disregarded evidence because it did not discuss the general statements by Dr. Deckers and Dr. Paulin that the consequences of fire blight can be classified as "high". According to the applicable standard of review, the Panel was

[449]Panel Report, para. 7.492. (emphasis added)
[450]Australia's appellant's submission, paras. 149 (quoting Dr. Cross' response to Panel Question 96, Panel Report, Annex B-1, para. 561) and 150.
[451]Dr. Cross' response to Panel Question 117, Panel Report, Annex B-1, para. 677.

required to verify that the IRA's conclusions on the potential consequences of the pests were objective and coherent, not that they were correct. It follows that the general statements by the appointed experts on the overall qualification of the consequences of pests were not determinative of the Panel's reasoning and objective assessment of the facts on this issue. Moreover, we have observed that Dr. Deckers' statement on the consequences of fire blight was qualified by his view on the presence of the conditions for establishment and spread of fire blight in Australia and that Dr. Cross' statement on ALCM consequences was qualified by his other testimony. It follows that we do not consider that Australia has established that the Panel disregarded or failed to engage with evidence by not discussing Dr. Cross' statement that he would not change the overall qualification of "low" assigned by the IRA to the potential consequences of ALCM. As in the case of the Panel's analysis of the potential consequences of fire blight, however, the Panel's reasoning could have been clearer on this issue had the Panel discussed this testimony and explained why it was not relevant to the conclusions it was reaching.

314. We have considered that, in its treatment of the individual statements by experts in the above mentioned six different areas, the Panel did not disregard or fail to engage with significant evidence that was favourable to Australia's case. While the Panel did not reproduce or discuss some of the experts' statements that Australia has identified on appeal, we are satisfied that the Panel addressed the significance of these statements in its analysis of the six issues identified above. We have also noted that Australia extracts some of the statements it argues are favourable to its case out of the broader context in which the Panel properly assessed them.

315. Therefore, in the light of the above, we do not consider that the Panel failed to make an objective assessment of the facts under Article 11 of the DSU in its treatment of the experts' testimony.

B. *The Panel's Characterization of the Methodology Employed in the IRA*

316. Australia argues that the Panel acted inconsistently with Article 11 of the DSU because it failed to understand the risk assessment methodology employed in the IRA and, in particular, 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 5×10^{-7} (0.5 in one million) for events with a "negligible" likelihood of occurring. Australia claims that the IRA team was not constrained by the intervals suggested by the nomenclature and that the defined correspondence between a so-called "negligible" event and a probability interval of 0 to 10^{-6} was, in and of itself, inevitably arbitrary. According to Australia, the Panel should have determined whether the estimate for a given step or factor 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".[452] Australia also argues that the Panel erred in finding that the methodological flaws constituted an independent basis for the invalidity of the IRA, considering that the interval 0 to 10^{-6} was used at just two points (importation step 7 and exposure) and in combination with uniform distribution only for exposure.[453]

317. New Zealand responds that the Panel was correct to focus on the definitional correspondence, because Table 12 of the IRA sets out a series of likelihood labels, corresponding to quantitative probability intervals, and defines "negligible" as an event that "almost certainly would not occur".[454] New Zealand argues that the Panel was correct in finding that the interval and distribution used in the IRA for "negligible" events were not appropriate for modelling events that almost certainly would not occur and that the methodological flaws were serious enough to constitute an independent basis for the IRA's invalidity. New Zealand asserts that, if, for example, the IRA had used an interval of 0 to 10^{-8} instead of 0 to 10^{-6}, then, if all else remained the same, including the estimated annual import volume of 150 million apples, the IRA would have predicted the likelihood of a fire blight outbreak occurring approximately once every 2,220 years instead of once every 22 years.[455]

318. The IRA assigned quantitative point estimates or probability intervals to each importation step and factor relating to entry, establishment and spread. Each probability interval was associated with one of three mathematical distribution models. Uniform distribution, unlike triangular and pert distribution, does not have a most likely value, but only two parameters, a maximum and a minimum value, and each value in the continuous range between these two limits occurs with the same probability.[456] The probability interval of 0 to 10^{-6}, with a midpoint (if uniform distribution is used) of 5×10^{-7}, corresponds in the IRA nomenclature to the qualitative likelihood "negligible" and to the qualitative descriptor "[t]he event would almost certainly not occur".[457]

319. The Panel found that because of methodological flaws that magnify the risk assessed, the IRA is not a proper risk assessment within the meaning of Article 5.1 of the *SPS Agreement*.[458] One of the two methodological flaws the Panel found concerns the IRA's choice of probability interval for events with a "negligible" likelihood of occurring.[459] The Panel found that the choice of a probability

[452]Australia's appellant's submission, para. 155.
[453]Australia's appellant's submission, para. 158.
[454]New Zealand's appellee's submission, para. 2.268. This table is reproduced *supra*, para. 147 of this Report.
[455]New Zealand's appellee's submission, footnote 466 to para. 2.274.
[456]*Supra*, para. 146 of this Report.
[457]IRA, Part B, Table 12, p. 43, reproduced *supra*, para. 147 of this Report.
[458]Panel Report, para. 7.510.
[459]The Panel also found that the IRA's use of uniform distribution to model the likelihood of negligible events "would tend to result in an additional overestimation of the likelihood of such 'negligible events'". (Panel Report, para. 7.508)

interval of 0 to 10^{-6} for events with a "negligible" likelihood of occurring was not properly justified in the IRA and led to an overestimation of the probability of entry, establishment and spread of the pests at issue.[460]

320. We are not persuaded that, as Australia argues, the Panel misunderstood the methodology used in the IRA. The Panel disagreed with the IRA's assignment of a probability interval covering events that would occur with relative frequency to events that, based on the scientific evidence, would almost certainly not occur. The IRA adopted a semi-quantitative methodology and used a correspondence ("nomenclature") to convert quantitative probability intervals into qualitative ratings and descriptors.[461] Like the Panel, we believe that, in a semi-quantitative risk assessment such as the IRA, the objectivity of the correspondence is fundamental to the objectivity and coherence of the results of the risk assessment. If, as the Panel found[462], the quantitative value that is assigned to the qualitative likelihood "negligible" is too high, this will have repercussions on the overall probability of entry, establishment and spread and ultimately on the assessment of unrestricted risk.

321. We observe that the IRA assigned quantitative values (point estimates or probability intervals) to individual steps and factors, often selecting one of six pre-defined quantitative ranges[463], the lowest of which was the probability interval 0 to 10^{-6}.[464] These quantitative values were then combined, in accordance with the IRA's methodology, and using the @Risk program, to determine an overall value for the annual probability of entry, establishment and spread.[465] This value was converted into a qualitative rating that was combined with the qualitative rating assigned to the potential biological and economic consequences in the "risk estimation matrix" to determine the "unrestricted risk".[466] Under such a methodology, a flawed correspondence in the nomenclature may result in a distortion in the estimation of unrestricted risk.

322. For instance, in the case of "exposure" to fire blight, the IRA assigned the quantitative value of 0 to 10^{-6} (with uniform distribution) for an individual apple to all 20 combinations of the five utility points and four exposure groups. This probability interval corresponds to a qualitative likelihood of "negligible" in the IRA's "nomenclature" table, and to the qualitative descriptor "[t]he event would almost certainly not occur".[467] The decision to assign this interval was based on the IRA team's views

[460]Panel Report, para. 7.508.
[461]See *supra*, para. 147 of this Report.
[462]Panel Report, para. 7.484.
[463]*Supra*, footnote 207 of this Report.
[464]See the third column of the "nomenclature" table, *supra*, para. 147 of this Report.
[465]See *supra*, para. 142 of this Report.
[466]See *supra*, para. 147 of this Report.
[467]See the table reproduced, *supra*, para. 147 of this Report.

on both mechanical[468] and insect mediated transmission[469], "explicitly acknowledg[ing] that in some circumstances the chances of exposure would be zero".[470]

323. The quantitative values assigned to exposure were then combined with the values assigned to the probabilities of importation, proximity, establishment and spread using the @Risk program, to generate an estimate of the annual probability of entry, establishment and spread for fire blight. The quantitative value estimated for this latter probability was converted, based on the nomenclature, into the qualitative rating "very low".[471] This qualitative rating "very low" was paired with the "high" rating assigned to the potential consequences of fire blight in the "risk estimation matrix"[472] to determine an estimate of unrestricted annual risk of "low" for fire blight, which is above Australia's appropriate level of protection of "very low".

324. Based on this example, it is evident that, if the correspondence in the IRA nomenclature is not objectively justifiable, this could have had an impact on the overall result of the risk assessment. Specifically, assigning a probability value that does not objectively correspond to the IRA's own definition of "negligible", that is, an event that "would almost certainly not occur", has the effect of inflating the overall probability of importation and may result in the overestimation of the unrestricted annual risk. This, in our view, also demonstrates that, insofar as the methodological flaws in the IRA, and notably the choice of the probability interval of 0 to 10^{-6} for events with a negligible likelihood of occurring, magnify the risk assessed, the Panel correctly found that they constituted an independent basis for the inconsistency of Australia's SPS measures with Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*.

325. Finally, we note New Zealand's argument that the IRA does not explain why intervals that were developed in a different context were appropriate in the context of apples, which are traded in hundreds of million units per year.[473] In this respect, we observe that, when combined with uniform distribution, a quantitative interval that is used to estimate risk based on an annual volume of imported units will produce very different results depending on whether the product at issue is imported in very large or more modest numbers of units per year.

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[468]Mechanical transmission refers to a transmission through, for example, exposure of workers and equipment to the pest. (*Supra*, footnote 226 of this Report)

[469]Insect mediated transmission refers to a transfer of bacteria to a susceptible host plant by insects that have browsed on discarded apples. (*Supra*, footnote 227 of this Report)

[470]*Supra*, para. 151 of this Report.

[471]In fact, using the two alternative measures regarding proximity, the IRA generated two probability values, both of which fell within the category of "very low" in the IRA's nomenclature. (*Supra*, para. 152 and footnote 232 of this Report)

[472]Reproduced *supra*, para. 147 of this Report.

[473]New Zealand's appellee's submission, para. 2.273.

326. In the light of the above, we do not consider that the Panel misunderstood the methodology used in the IRA. Accordingly, Australia has not established that the Panel acted inconsistently with Article 11 of the DSU in its assessment of Australia's risk assessment methodology.

C. *Conclusion*

327. For the reasons stated above, we find that Australia has not established that the Panel failed to make an objective assessment of the facts under Article 11 of the DSU in its treatment of the experts' testimony or of the IRA's risk assessment methodology.

VIII. Article 5.6 of the *SPS Agreement*

328. We turn next to Australia's appeal of the Panel's finding that Australia's measures regarding fire blight and ALCM are more trade restrictive than required and, therefore, inconsistent with Article 5.6 of the *SPS Agreement*.[474] At the outset of its analysis of New Zealand's claim under this provision, the Panel stated that, to prove a violation of Article 5.6, a complainant must demonstrate that an alternative measure: (i) is reasonably available taking into account technical and economic feasibility; (ii) achieves the importing Member's appropriate level of sanitary or phytosanitary protection; and (iii) is significantly less restrictive to trade than the SPS measure(s) at issue in the dispute.[475] The Panel viewed these three elements as cumulative in nature and noted the parties' agreement to that effect.[476]

329. With respect to the burden of proof, the Panel stated that, in order to establish an inconsistency with Article 5.6, a complainant must establish a *prima facie* case that there is an alternative measure that meets all three elements under Article 5.6. Thus, the Panel stated that it was for New Zealand to demonstrate that all three conditions of the Article 5.6 test are fulfilled.[477]

330. As an alternative measure to limit the risk of fire blight, the Panel considered the restriction of imports from New Zealand to mature, symptomless apples.[478] As an alternative measure to limit the risk of ALCM, the Panel considered requiring inspection of a 600-fruit sample of each import lot with

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[474]Panel Report, paras. 7.1403 and 8.1(e); see also paras. 7.1197 and 7.1266 (with respect to fire blight); and paras. 7.1328 and 7.1365 (with respect to ALCM).

[475]Panel Report, para. 7.1098 (quoting Appellate Body Report, *Australia – Salmon*, para. 194; and Appellate Body Report, *Japan – Agricultural Products II*, para. 95).

[476]Panel Report, para. 7.1098.

[477]Panel Report, paras. 7.1104 and 7.1105.

[478]The Panel noted that New Zealand had pointed to possible additional alternative measures, but had immediately discounted these alternatives because they were based on the incorrect assumption that mature, symptomless apples are vectors for fire blight and that New Zealand had not developed arguments for the additional alternatives with respect to all three conditions of Article 5.6 of the *SPS Agreement*. The Panel therefore restricted its Article 5.6 analysis with respect to fire blight to the sole alternative of restricting imports of apples to mature and symptomless fruit. (Panel Report, paras. 7.1109-7.1118)

appropriate treatment or rejection of the lot in the event that ALCM is found in the sample.[479] We note that New Zealand's proposed alternative measure for fire blight—to limit imports of apples to mature, symptomless apples—is the same as the "unrestricted risk" scenario assessed by the IRA.[480] Although the wording used by the IRA in describing the "starting point" of its analysis was slightly different from the wording used by New Zealand to describe its alternative measure, the participants confirmed at the oral hearing in this appeal that the two are in essence the same.[481] Furthermore, New Zealand's alternative measure relating to ALCM is the same as the first option of Measure 14, except that the sample size in New Zealand's alternative measure (600 fruit) is smaller than the sample size in the first option of Measure 14 (3000 fruit).[482]

331. Applying the three-pronged test under Article 5.6 to the alternative measure proposed by New Zealand to limit the risk of fire blight, the Panel found that the restriction of imports from New Zealand to mature, symptomless apples fulfilled this test. First, the Panel found that Australia did not directly contest that the alternative measure would be reasonably available, taking into account technical and economic feasibility.[483] Second, the Panel found that New Zealand had raised a "sufficiently convincing presumption" that restricting imports from New Zealand to mature, symptomless apples would meet Australia's appropriate level of protection[484], namely, "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero".[485] Third, the Panel found that restricting imports to mature, symptomless apples is significantly less trade restrictive than Australia's fire blight measures at issue.[486] In the light of these findings, the

[479]The Panel noted that New Zealand had argued that one of the additional alternative measures it had suggested for fire blight would also be an alternative measure with respect to ALCM. The Panel restricted its assessment to only one alternative measure, namely, the inspection of a 600-fruit sample from each import lot. (Panel Report, paras. 7.1267-7.1284)

[480]The scope of the IRA is the importation of mature New Zealand apples free of trash. In addition, standard commercial agronomic practice forms the basis for consideration of risk management measures. One of the features of standard commercial agronomic practice is that fruit be free of fire blight symptoms. Because production procedures and pest management practices in apple orchards, as well as packing house processes used in New Zealand, are intended to ensure that apples for export are free from visible symptoms of fire blight and trash and meet commercial export standards, this forms the starting point for the consideration of risk management measures in the IRA. (See IRA, Part B, p. 105; see also p. 9)

[481]Australia said "[d]efinitely, yes. In substance, they are the same things". New Zealand stated that "there is not a significant difference between the two" and that both refer to "the apples that New Zealand would actually export to Australia". (Reponses by Australia and New Zealand to questioning at the oral hearing)

[482]The participants confirmed, at the oral hearing in this appeal, that under New Zealand's proposed alternative measure, with a 600-unit sample size, detection of any live quarantineable arthropod would also result in appropriate treatment or rejection for export.

[483]Panel Report, paras. 7.1257 and 7.1258.

[484]Panel Report, para. 7.1197.

[485]Panel Report, paras. 7.1121 and 7.1136.

[486]Panel Report, para. 7.1265. We recall that Australia's measures concerning fire blight are Measures 1-8, as set out *supra*, para. 125 of this Report.

Panel concluded that New Zealand had demonstrated that its alternative measure regarding fire blight fulfils the three cumulative conditions of Article 5.6.[487]

332. The Panel then applied the same test to the alternative measure proposed by New Zealand to limit the risk of ALCM, and found that requiring inspection of a 600-fruit sample of each import lot with appropriate treatment or rejection of the lot in the event that ALCM is found in the sample also fulfilled the three conditions of the Article 5.6 test. The Panel found that Australia did not contest that the alternative measure would be reasonably available, taking into account technical and economic feasibility.[488] The Panel further found that New Zealand had successfully raised a *prima facie* case that requiring inspection of a 600-fruit sample of each import lot would meet Australia's appropriate level of protection.[489] In addition, the Panel found that requiring inspection of a 600-fruit sample from each import lot is significantly less trade restrictive than Australia's ALCM measure at issue.[490] In the light of these findings, the Panel concluded that New Zealand had demonstrated that its alternative measure regarding ALCM fulfils the three cumulative conditions of Article 5.6.[491]

333. On the basis of this analysis, the Panel concluded that Australia's measures regarding fire blight and ALCM are more trade restrictive than required and therefore inconsistent with Article 5.6 of the *SPS Agreement*.[492]

334. Australia appeals the Panel's overall finding of inconsistency with Article 5.6. Australia's appeal is confined to the Panel's findings that the alternative measures put forward by New Zealand meet Australia's appropriate level of protection.[493] Australia argues that the Panel erred in law, particularly in finding that New Zealand had raised a sufficiently convincing presumption that restricting imports of New Zealand apples to mature, symptomless apples was an alternative measure with respect to fire blight that would meet Australia's appropriate level of protection[494]; and in finding that New Zealand had made a *prima facie* case that the inspection of a 600-fruit sample of each

[487]Panel Report, para. 7.1266.
[488]Panel Report, paras. 7.1335 and 7.1336.
[489]Panel Report, para. 7.1328.
[490]Panel Report, para. 7.1364. We recall that Australia's measure concerning ALCM is Measure 14, as set out *supra*, para. 125 of this Report.
[491]Panel Report, para. 7.1365.
[492]Panel Report, paras. 7.1403 and 8.1(e); see also 7.1197 and 7.1266 (with respect to fire blight); and paras. 7.1328 and 7.1365 (with respect to ALCM). The Panel also found, in paragraphs 7.1252 and 7.1266 of its Report, that Australia's measures regarding European canker were inconsistent with Article 5.6. In addition, the Panel found, in paragraph 7.1402 of its Report, that New Zealand had not demonstrated that Australia's "general" measures are inconsistent with Article 5.6.
[493]Australia has not appealed the Panel's findings regarding the first and third conditions in Article 5.6, that is, regarding the availability of New Zealand's proposed alternative measures or their relative trade-restrictiveness. Australia has also not appealed the Panel's findings under Article 5.6 of the *SPS Agreement* with respect to the measures concerning European canker.
[494]Panel Report, para. 7.1197.

import lot would be an alternative measure with respect to ALCM that would meet Australia's appropriate level of protection.[495]

335. Australia raises several claims with respect to these findings of the Panel. Australia argues that the Panel's overall finding under Article 5.6 should be reversed consequentially upon a reversal of the Panel's findings under Articles 5.1, 5.2, and 2.2. Australia further alleges that the Panel misinterpreted the requirements of Article 5.6 and misapplied the rules governing the burden of proof by requiring New Zealand to demonstrate only that its proposed alternative measures "might" or "may" achieve Australia's appropriate level of protection, instead of requiring a demonstration that they "would" do so. Australia also alleges that the Panel failed to assess whether a "proper" risk assessment would necessarily have concluded that the alternative measures "would" achieve Australia's appropriate level of protection. Australia also contends that the Panel misinterpreted the words "appropriate level of sanitary or phytosanitary protection" in Article 5.6, because it focused its analysis of the alternative measures only on the likelihood of entry, establishment and spread of a pest and failed to consider the "associated potential biological and economic consequences".

A. *Article 5.6 and Footnote 3*

336. Article 5.6 of the *SPS Agreement* and footnote 3 thereto provide:

> Without prejudice to paragraph 2 of Article 3, when establishing or maintaining sanitary or phytosanitary measures to achieve the appropriate level of sanitary or phytosanitary protection, Members shall ensure that such measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility.[3]
>
> [3]For purposes of paragraph 6 of Article 5, a measure is not more trade-restrictive than required unless there is another measure, reasonably available taking into account technical and economic feasibility, that achieves the appropriate level of sanitary or phytosanitary protection and is significantly less restrictive to trade.

337. In *Australia – Salmon*, the Appellate Body found that Article 5.6 and, in particular, the footnote to this provision, set out a three-pronged test for inconsistency with Article 5.6. Such a violation will be established when there is a measure, other than the contested measure, that:

(i) is reasonably available taking into account technical and economic feasibility;

(ii) achieves the Member's appropriate level of sanitary or phytosanitary protection; and

[495]Panel Report, para. 7.1328.

(iii) is significantly less restrictive to trade than the SPS measure contested.[496]

These three conditions are cumulative, meaning that all of them must be met in order to establish an inconsistency with Article 5.6. If any one of them is not fulfilled, the measure in dispute will be consistent with Article 5.6.[497] In determining whether the first two of these conditions have been satisfied, a panel must focus its assessment on the proposed alternative measure. Only in examining whether the third condition is fulfilled will a panel need to compare the proposed alternative measure with the contested SPS measure.

338. Article 2 of the *SPS Agreement*, entitled "Basic Rights and Obligations", provides context relevant to the meaning of Article 5.6. In particular, Article 2.2 provides that:

> Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence, except as provided for in paragraph 7 of Article 5.

339. The Appellate Body has observed that Article 2.2 "informs"[498], "impart[s] meaning to"[499], and "is made operative in"[500], other provisions of the *SPS Agreement*, including certain of the more specific obligations set out in Article 5, which is entitled "Assessment of Risk and Determination of the Appropriate Level of Sanitary or Phytosanitary Protection". Thus, in *EC – Hormones*, the Appellate Body stated that "Articles 2.2 and 5.1 should constantly be read together. Article 2.2 informs Article 5.1: the elements that define the basic obligation set out in Article 2.2 impart meaning to Article 5.1."[501] The same type of relationship exists between Articles 2.2 and 5.2 and between Articles 2.2 and 5.6. In this connection, we take particular note of the similarities between the requirement in Article 2.2 that Members apply their SPS measures "only to the extent necessary to protect", and the requirement in Article 5.6 that SPS measures be "no more trade-restrictive than required to achieve" the relevant objectives.

340. The Appellate Body has also held that there is a one-way, dependent relationship in law between the more specific provisions of Article 5.1 or Article 5.2, on the one hand, and the more general provisions of Article 2.2, on the other hand. Thus, the Appellate Body has ruled that a

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[496]Appellate Body Report, *Australia – Salmon*, para. 194.
[497]Appellate Body Report, *Australia – Salmon*, para. 194.
[498]Appellate Body Report, *EC – Hormones*, para. 180.
[499]Appellate Body Report, *EC – Hormones*, para. 180.
[500]Appellate Body Reports, *US/Canada – Continued Suspension*, para. 674.
[501]Appellate Body Report, *EC – Hormones*, para. 180. Similarly, with respect to the relationship between Article 2.3 and Article 5.5 of the *SPS Agreement*, the Appellate Body found that Article 5.5 must be read in the context of Article 2.3, and that Article 5.5 may be seen as marking out and elaborating a particular route leading to the same destination set out in Article 2.3. (Appellate Body Report, *EC – Hormones*, para. 212)

violation of Article 5.1 or Article 5.2 can be presumed to imply a violation of Article 2.2, but that the reverse does not hold true—that is, a violation of Article 2.2 does not imply a violation of Article 5.1 or Article 5.2.[502] Whether a similar relationship exists between Article 2.2 and Article 5.6 has not yet been squarely decided, and is not an issue that is raised in this appeal[503], although it has been suggested that just such a relationship does exist.[504]

341. While several aspects of these relationships—between the basic rights and obligations set out in Article 2, in particular its second paragraph, on the one hand, and the more specific elaborations of these basic obligations in Article 5, on the other hand—have thus been clarified, the relationships between the various paragraphs within Article 5 remain relatively unexplored. As a general matter, we see the various paragraphs of Article 5 as setting out distinct legal obligations with which Members must comply. For example, Article 5.1 seeks to ensure that a Member's SPS measure has an appropriate scientific basis, whereas Article 5.6 seeks to ensure that appropriate limits are placed on the trade-restrictiveness of a Member's SPS measure. A complainant may challenge the consistency of a specific SPS measure with either or both of these obligations. When a complainant seeks to establish violations of both obligations, some of the factual circumstances that it chooses to rely upon to establish a violation of one obligation may also be relevant to, and appropriately form part of, the evidence upon which it relies to establish a violation of the other, separate, obligation. However, the obligations in Article 5.1 and Article 5.6 are not dependent upon each other. Thus, the legal analysis of an SPS measure's consistency with Article 5.1 is separate and distinct from the legal analysis of that measure's consistency with Article 5.6. Violation of one obligation does not, without more, imply the violation of the other. As the Appellate Body opined in *Australia – Salmon*, an SPS measure that is consistent with Article 5.1 may nonetheless be inconsistent with either Article 5.5 or Article 5.6, or with both.[505]

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[502]Appellate Body Report, *Australia – Salmon*, para. 138.

[503]The Panel found a violation of Article 5.1 and, therefore, of Article 2.2. Having also found a violation of Article 5.6, the Panel exercised judicial economy with respect to New Zealand's additional claim that, "*because* they are more trade restrictive than required, the measures also breach the requirement in Article 2.2 that measures be 'applied only to the extent necessary to protect human, animal or plant life or health.'" (Panel Report, paras. 7.1404 (quoting New Zealand's first written submission to the Panel, para. 4.540 (emphasis added)), 7.1409, and 7.1410) Neither participant has appealed the Panel's decision to exercise judicial economy on this claim.

[504]After pointing to the phrase "only to the extent necessary" in Article 2.2 of the *SPS Agreement*, the Appellate Body observed, in a footnote in its report in *Australia – Salmon*, that:

> [t]he establishment or maintenance of an SPS measure which implies or reflects a higher level of protection than the appropriate level of protection determined by an importing Member, could constitute a violation of the necessity requirement of Article 2.2.

(Appellate Body Report, *Australia – Salmon*, footnote 166 to para. 213)

[505]Appellate Body Report, *Australia – Salmon*, para. 224.

342. This appeal concerns the second condition in Article 5.6, namely, that an alternative measure must meet the importing Member's appropriate level of protection. The phrase "appropriate level of sanitary or phytosanitary protection" is defined in Annex A(5) to the *SPS Agreement* as "[t]he level of protection deemed appropriate by the Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory." The note to Annex A(5) explains that the concept of the appropriate level of protection is also referred to as the "acceptable level of risk". The Appellate Body has held that it is the "prerogative"[506] of a WTO Member to set the level of protection it deems appropriate[507], and has explained that the establishment of "the level of protection is an element in the decision-making process which logically precedes and is separate from the establishment or maintenance of the SPS measure".[508]

343. The Appellate Body has also found that the *SPS Agreement* contains an implicit obligation for a WTO Member maintaining an SPS measure to establish and articulate its appropriate level of protection.[509] Otherwise, and especially in assessing whether an SPS measure is consistent with Article 5.6, it would be impossible to examine whether alternative measures achieve the appropriate level of protection.[510] While there is no obligation to set the appropriate level of protection in quantitative terms, a Member is not free to establish its level with such vagueness or equivocation as to render impossible the application of the relevant disciplines of the *SPS Agreement*, including the obligation set out in Article 5.6.[511]

344. Under Article 5.6, in order to assess whether a significantly less trade-restrictive alternative measure that would meet the appropriate level of protection is available, we consider that a panel must identify both the level of protection that the importing Member has set as its appropriate level, and the level of protection that would be achieved by the alternative measure put forth by the complainant.[512] Thereupon the panel will be able to make the requisite comparison between the level of protection that would be achieved by the alternative measure and the importing Member's appropriate level of protection. If the level of protection achieved by the proposed alternative meets or exceeds the appropriate level of protection, then (assuming that the other two conditions in Article 5.6 are met) the

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[506]Appellate Body Report, *Australia – Salmon*, para. 199. (emphasis omitted)

[507]While it is a WTO Member's prerogative to choose its level of protection, the *SPS Agreement* provides for certain disciplines that a Member must respect when it has done so. (See Appellate Body Reports, *US/Canada – Continued Suspension*, footnote 1088 to para. 523)

[508]Appellate Body Report, *Australia – Salmon*, para. 203. (emphasis omitted)

[509]Appellate Body Report, *Australia – Salmon*, para. 206. The Appellate Body based its reasoning, in part, on the text of Articles 5.3 and 5.4 of the *SPS Agreement*. Article 5.3 refers to "determining the measure to be applied for achieving the appropriate level of sanitary or phytosanitary protection", and Article 5.4 requires that "Members should, when determining the appropriate level of sanitary or phytosanitary protection, take into account the objective of minimizing negative trade effects."

[510]Appellate Body Report, *Australia – Salmon*, para. 205.

[511]Appellate Body Report, *Australia – Salmon*, para. 206.

[512]Appellate Body Report, *Australia – Salmon*, para. 208.

importing Member's SPS measure is more trade restrictive than necessary to achieve its desired level of protection.

B. *Australia's Appeal*

1. Whether the Panel's Finding under Article 5.6 was Consequential upon Its Findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*

345. Australia requests the Appellate Body to reverse the Panel's finding that Australia's measures regarding fire blight and ALCM are inconsistent with Article 5.6, consequentially upon reversal of the Panel's findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*. Australia asserts that the Panel made its finding under Article 5.6 largely consequentially upon its finding that the IRA was not a valid risk assessment within the meaning of Article 5.1.[513] Thus, Australia contends that, if the Appellate Body reverses the Panel's findings under Articles 5.1, 5.2, and 2.2, then the basis for the Panel's finding relating to Article 5.6 would fall because that finding could not be sustained on its own terms.

346. We have upheld the Panel's findings under Articles 5.1, 5.2, and 2.2 of the *SPS Agreement*.[514] Thus, there is no basis for a consequential reversal of the Panel's finding under Article 5.6. In any event, we are not convinced that as a matter of principle a reversal of the Panel's findings under Articles 5.1, 5.2, and 2.2 would necessarily require reversal of the Panel's finding under Article 5.6. As set out above, the obligations in Article 5.1 and Article 5.6 are not dependent upon each other. The violation of one obligation does not, without more, imply the violation of the other. Thus, even if we were to reverse the Panel's findings under Articles 5.1 and 5.2, which we do not, this would not necessarily require reversal of the Panel's finding under Article 5.6.

347. At the same time, when a complainant makes claims that the same SPS measure is inconsistent with both Article 5.1 and Article 5.6, factual elements relevant to the analysis under one provision may also be relevant to the analysis under the other provision. As explained below, we understand many of the arguments put forth by Australia in support of its appeal of the Panel's finding under Article 5.6 of the *SPS Agreement* to relate to such factual elements, and to how the Panel dealt with them.

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[513]Australia's appellant's submission, para. 165.
[514]See *supra*, para. 262 of this Report.

2. The Alleged Errors in the Panel's Analysis of New Zealand's Article 5.6 Claim

348. In addition to its request for consequential reversal of the Panel's finding under Article 5.6, Australia also contends that the Panel's Article 5.6 finding should be reversed due to a number of alleged errors of misinterpretation and misapplication of Article 5.6. According to Australia, in tackling New Zealand's Article 5.6 claim, the Panel asked the wrong legal question and, due to its "anxiety" to avoid conducting an impermissible *de novo* review, failed to satisfy itself "affirmatively on the basis of the evidence and arguments advanced by New Zealand that the alternative measures 'would achieve'" Australia's appropriate level of protection.[515] Australia submits that the Panel should have assessed whether a proper risk assessment would necessarily have concluded that the alternative measures would achieve Australia's appropriate level of protection. Australia alleges that, instead, the Panel relied upon its finding under Article 5.1 as to the inadequacy of the IRA in order to find that New Zealand's Article 5.6 claim was established.[516] According to Australia, any invalidity affecting the IRA entitled the Panel to conclude, at most, that New Zealand's Article 5.6 claim was not foreclosed, not that it had been established. The Panel, therefore, wrongly asked whether the alternative measures "could" or "might" achieve the appropriate level of protection, and wrongly relied upon evidence that "suggests" or "leaves open" the inconsistency of, or "casts doubt upon" the consistency of, Australia's measures with the *SPS Agreement*.[517] Furthermore, according to Australia, the Panel failed to make the affirmative factual finding that would have been necessary to find a violation of Article 5.6, namely, that the alternative measures proposed by New Zealand would meet Australia's appropriate level of protection.

349. As such, Australia's allegations relate to the overall analytical approach taken by the Panel in assessing New Zealand's claim under Article 5.6. Therefore, we address first the Panel's analytical approach to Article 5.6.

(a) The Panel's Analytical Approach to Article 5.6 of the *SPS Agreement*

350. The Panel's analysis of whether New Zealand had established a *prima facie* case that its proposed alternative measures would meet Australia's appropriate level of protection proceeded in two steps. The Panel explained its two-step approach as follows:

> [T]he Panel will assess *first* whether New Zealand has demonstrated that Australia's calculation of the risk resulting of the importation of New Zealand apples is exaggerated. If New Zealand is successful in making this case, it would cast doubt on whether the risk would

[515]Australia's appellant's submission, para. 180. (emphasis omitted)
[516]Australia's appellant's submission, para. 181.
[517]Australia's appellant's submission, para. 169.

> exceed Australia's ALOP to the extent calculated by the IRA, and warrant as strict risk management measures as those developed by the IRA. Further, it would cast doubt on whether the risk of the three pests at issue necessarily exceeds Australia's ALOP and warrants risk management measures at all. Since risk management measures are necessary only if the risk exceeds the ALOP, *in case there is doubt* that the risk exceeds the ALOP to the extent calculated, *or doubt* that it exceeds the ALOP at all, *then* 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.
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> *Second*, the Panel will assess *more directly* whether, assuming that risk management measures are necessary, the alternative measures properly identified by New Zealand might sufficiently reduce the risk to, or below, Australia's ALOP. Obviously, the Panel cannot conduct a *de novo* risk assessment. The Panel's task is to assess whether New Zealand has raised a presumption, not successfully rebutted by Australia, that the alternative measures have a sufficient risk reduction effect. The Panel will analyse whether New Zealand has advanced sufficient indices for such a risk reduction effect, and consider what the experts say about such an effect. The Panel will also assess whether the IRA evaluated the alternatives identified by New Zealand, and—if they were evaluated—whether their eventual rejection by the IRA was justified.[518] (emphasis and underlining added)

351. Furthermore, as regards the Panel's approach to analyzing the second condition of Article 5.6, the Panel stated that it must not conduct a *de novo* review[519] and that it had to be careful not to "slip into conducting a *de novo* review".[520]

352. In response to questioning at the oral hearing, New Zealand stated that it considered the two-step approach to be "sensible" in the circumstances of the present dispute. Australia allowed that the two-step approach was "correct", insofar as it recognized that if Australia had, in a valid risk assessment, found that the alternative measures did not meet Australia's appropriate level of protection, then this would have foreclosed a finding of violation of Article 5.6. The European Union, Japan, and the United States responded that it was not necessary for the Panel to undertake the first step.

353. The participants were also asked whether they understood the last sentence of paragraph 7.1143 of the Panel Report (underlined in the above quotation) to mean that the Panel considered that it could only proceed to the second step of its analysis once it had found a violation of Article 5.1. Australia understood the Panel to be of the view that it could only proceed to the second

[518]Panel Report, paras. 7.1143 and 7.1144.
[519]Panel Report, para. 7.1134.
[520]Panel Report, para. 7.1193.

step of its analysis once it had found a violation of Article 5.1, and stated that this was correct. New Zealand understood the Panel simply to have raised the question of whether Australia's assessment of risk was exaggerated and to have answered that question by referring to factual findings that it had already made in its analysis of New Zealand's Article 5.1 claim. The European Union read the sentence as implying that the only way to reach the second step was to first complete the first step, and found this questionable. Japan contended that the Panel's statement could be considered as setting forth a general rule for an Article 5.6 analysis, which Japan considered to be problematic. The United States did not understand the Panel to have stated that it could proceed to the second step of its analysis only because of its finding of inconsistency under Article 5.1.

354. We see a number of problems with the Panel's approach under Article 5.6. Beginning with the "two-step" approach, we find no basis in Article 5.6 for requiring a complainant pursuing a claim under that provision to establish that the importing Member has, in its risk assessment, overestimated the risk associated with the imported product or has erred in concluding that SPS measures are necessary at all. We disagree with the Panel's suggestion that a "direct" analysis of whether a complainant has succeeded in proving that its proposed alternative measure meets the second requirement of Article 5.6 may be undertaken only once the complainant has "cast doubt" upon the importing Member's risk assessment.[521] As we have already stated, the obligations set out in Article 5.1 and Article 5.6 are distinct and legally independent of each other. Accordingly, the Panel was required to undertake its own analysis of the question of whether the alternative measures proposed by New Zealand would achieve Australia's appropriate level of protection.[522] In fact, a complainant is free to challenge the consistency of a measure with Article 5.6 without, at the same time, alleging a violation of Article 5.1. In that event, as well as in the present dispute, a panel's Article 5.6 analysis must stand on its own feet.

[521]We recognize that two specific circumstances of this dispute may have drawn the Panel to adopt such an approach, especially in its assessment of New Zealand's proposed alternative measure for fire blight. First, New Zealand's proposed alternative measure for fire blight—to limit the import of apples to mature, symptomless apples—is the same as the "unrestricted risk" scenario assessed by the IRA. Although the wording used by the IRA in describing the "starting point" of its analysis was slightly different from the wording used by New Zealand to describe its alternative measure, the participants confirmed at the oral hearing in this appeal that the two are in essence the same. As such, the IRA was assessing the risk resulting from the importation of mature, symptomless apples. Second, Australia's only defence to New Zealand's Article 5.6 claim was that the IRA had already considered the alternative measures put forward by New Zealand, and found that they did not meet Australia's appropriate level of protection. In other words, Australia's defence was that the IRA had already assessed New Zealand's proposed alternatives and rejected them as failing to meet Australia's appropriate level of protection. Confronted with these particular factual circumstances, the Panel may have felt that, as a "first" or preliminary step, it should check whether the answer given by the IRA to the question of whether the alternative measures meet Australia's appropriate level of protection could affect whether the Panel could go on to answer the same question itself.

[522]We note that New Zealand relied on largely the same facts and evidence in the context of its claims under both Article 5.1 and Article 5.6. However, the Panel should not have taken that to mean that the legal analyses under the two provisions should overlap.

355. The Panel was required to assess, itself, whether the alternative measures (not the SPS measures at issue) meet the appropriate level of protection. The Panel's task was not to review a determination made by a national authority on that question or any other, but to rule on whether the alternative measures proposed by New Zealand would achieve Australia's appropriate level of protection. It could only conclude that this was so on the basis of affirmative findings that New Zealand had made out its case, rather than on negative findings, such as that New Zealand had "cast doubt" upon Australia's risk assessment. Moreover, in making its own assessment of the case presented by New Zealand, the Panel was free, within the limits of its duty to make an objective assessment, to structure its analysis as it deemed appropriate. Thus, it was not obliged, in considering the risk associated with the alternative measure, to adopt the same methodology or structure as that employed by the IRA in its pest risk analysis.

356. In considering further the Panel's approach to analyzing whether New Zealand's proposed alternative measures meet Australia's appropriate level of protection, we note that the Panel repeatedly stated that it had to be careful not to "slip into conducting a *de novo* review".[523] The Panel's caution was, however, misplaced. Caution not to conduct a *de novo* review is appropriate where a panel reviews a risk assessment conducted by the importing Member's authorities in the context of Article 5.1. However, the situation is different in the context of an Article 5.6 claim. The legal question under Article 5.6 is not whether the authorities of the importing Member have, in conducting the risk assessment, acted in accordance with the obligations of the *SPS Agreement*. Rather, the legal question is whether the importing Member could have adopted a less trade-restrictive measure. This requires the panel itself to objectively assess, *inter alia*, whether the alternative measure proposed by the complainant would achieve the importing Member's appropriate level of protection. The fact that, in the present case, the alternative measures proposed by New Zealand in the context of its claim under Article 5.6 had also been assessed in the IRA did not alter the nature of the Panel's task under Article 5.6.

357. The Panel's flawed two-step approach is manifest throughout the Panel's analysis of New Zealand's Article 5.6 claim. For instance, with respect to fire blight, at the outset of its analysis of the alternative measure proposed by New Zealand, the Panel devoted multiple pages to the "first step" of its analysis, engaging in a lengthy re-capitulation of the various findings that it had made in its Article 5.1 analysis[524] before concluding that "for the purposes of its Article 5.6 claim New Zealand has made the case that *Australia's IRA overestimates the fire blight risk* resulting from

[523]Panel Report, para. 7.1193; see also paras. 7.1134 and 7.1135. Similarly, in the context of its Article 5.6 analysis with regard to ALCM, the Panel stated that it "need[ed] to review Australia's IRA". (*Ibid.*, para. 7.1330)

[524]See Panel Report, paras. 7.1145-7.1153.

imports of New Zealand apples".[525] Yet whether *the IRA* had overestimated the fire blight risk was not a constituent element of New Zealand's Article 5.6 claim, and was not responsive to the question of whether New Zealand had affirmatively established that *its alternative measure* would achieve Australia's appropriate level of protection. Furthermore, throughout the "second step" of its analysis, the Panel repeatedly referred to, and couched its analysis in terms similar to those that it had used in, its analysis under Article 5.1. For example, the Panel recalled that it had, in its Article 5.1 analysis, examined the IRA's assessment of whether mature, symptomless apples from New Zealand can carry fire blight and found that the IRA "does not find sufficient support in the scientific evidence relied upon and, accordingly, is not coherent and objective".[526] Similarly, the Panel surveyed a variety of statements by its appointed experts, most of which called into question the IRA's assessment of various risks, before finding that "the experts did not consider that the IRA contains any adequate scientific evidence to support the proposition that the introduction of fire blight via mature apple fruit has occurred or could occur."[527] The structure of the Panel's analysis of the proposed alternative measure for ALCM is similar. At the conclusion of that analysis, the Panel states that, "[i]n assessing the second condition of the Article 5.6 test, the Panel had to review whether New Zealand has made a prima facie case that its alternative measure would achieve" Australia's appropriate level of protection.[528] The Panel then states, in the next sentence, that "[i]n this dispute the Panel needs to review Australia's IRA, not conduct its own risk assessment".[529] To us, this statement reveals the fundamental flaw in the Panel's approach, namely, that the Panel seems to have assumed that, because it could not conduct its own risk assessment, the only way that it could evaluate New Zealand's Article 5.6 claim was *by relying upon* its review of the IRA. This was an incorrect understanding of its task.

358. For all these reasons, we consider that the Panel's approach to its analysis of New Zealand's Article 5.6 claim was in error. Because the Panel unduly relied on findings that it had made in reviewing the IRA under Article 5.1 and failed to find affirmatively that New Zealand's alternative measures would meet Australia's appropriate level of protection, the Panel's Article 5.6 finding lacks a proper legal basis. We therefore *find* that the Panel erred in concluding that New Zealand had raised a

[525]Panel Report, para. 7.1153. (emphasis added) The Panel seems to have considered that this first step was necessary because, "if the [IRA's] assessment of risk is exaggerated, there may be reason to believe that the measures that are designed to protect against that risk [(that is, the contested measures)] may also be exaggerated—or too strict". (*Ibid*., para. 7.1142) Thus, the Panel appears to have viewed the first step as a different way of testing the trade-restrictiveness of Australia's fire blight measures. However, Article 5.6 of the *SPS Agreement* prescribes a specific means for testing the trade-restrictiveness of a contested SPS measure, namely, through an analysis of possible alternative measures that are apt to achieve the same objectives, that is, by testing whether there is a reasonably available, significantly less trade-restrictive *alternative.*

[526]Panel Report, para. 7.1157.

[527]Panel Report, para. 7.1186.

[528]Panel Report, para. 7.1329.

[529]Panel Report, para. 7.1330.

presumption that restricting imports of New Zealand apples to mature, symptomless apples was an alternative measure with respect to fire blight that would meet Australia's appropriate level of protection[530]; and erred in concluding that New Zealand had made a *prima facie* case that the inspection of a 600-fruit sample of each import lot would be an alternative measure with respect to ALCM that would meet Australia's appropriate level of protection.[531]

359. Accordingly, we *reverse* the Panel's finding, in paragraphs 7.1403 and 8.1(e) of its Report, that Australia's measures at issue regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*. Having reversed this finding, we must consider whether, in order to promote the prompt settlement of this dispute, we are able to complete the analysis and rule on New Zealand's claim under Article 5.6.

(b) Completion of the Analysis

360. At the outset, we recall that under Article 5.6 of the *SPS Agreement* it is for the complainant to establish a *prima facie* case that there is an alternative measure that satisfies all three applicable conditions.[532] Accordingly, a complainant must demonstrate that a proposed alternative measure to the measure at issue: (i) is reasonably available taking into account technical and economic feasibility; (ii) achieves the Member's appropriate level of sanitary or phytosanitary protection; and (iii) is significantly less restrictive to trade than the contested SPS measure.[533]

361. The Panel found that the first condition and the third condition were met for both fire blight and ALCM. These findings are not appealed. Therefore, the only question before us is whether New Zealand's alternative measures would achieve Australia's appropriate level of protection.

362. Australia asserts that a complainant can only be found to have satisfied the second condition under Article 5.6 when the evidence that it has adduced establishes that a "proper" risk assessment, conducted by the importing Member, "would necessarily have concluded that the alternative measure would achieve" that Member's appropriate level of protection.[534]

[530]Panel Report, para. 7.1197. See also para. 7.1266.
[531]Panel Report, para. 7.1328. See also para. 7.1365.
[532]Appellate Body Report, *Japan – Agricultural Products II*, para. 126.
[533]Panel Report, para. 7.1098 (referring to Appellate Body Report, *Australia – Salmon*, para. 194; and Appellate Body Report, *Japan – Agricultural Products II*, para. 95).
[534]Australia's appellant's submission, para. 179.

363. We have difficulties accepting this formulation of the burden of proof that applies under Article 5.6. In contrast to Article 5.1, which expressly provides that an SPS measure must be based on a risk assessment, Article 5.6 contains no explicit reference to or requirement for a risk assessment. Moreover, while Article 5.1 directly concerns the actual SPS measure, Article 5.6 addresses that SPS measure via a comparison with a hypothetical alternative measure. The function of Article 5.6 is to ensure that SPS measures are not more trade restrictive than necessary to achieve a Member's appropriate level of protection. Compliance with this requirement is tested through a comparison of the measure at issue to possible alternative measures. Such alternatives, however, are mere conceptual tools for the purpose of the Article 5.6 analysis. A demonstration that an alternative measure meets the relevant Member's appropriate level of protection, is reasonably available, and is significantly less trade restrictive than the existing measure suffices to prove that the measure at issue is more trade restrictive than necessary. Yet this does not imply that the importing Member must adopt that alternative measure or that the alternative measure is the only option that would achieve the desired level of protection.

364. This, too, is consistent with the view that a complainant pursuing a claim under Article 5.6 is not *required* to undertake or furnish a risk assessment relating to the alternative measure proposed. At the same time, we cannot conceive of how a complainant could satisfy its burden of demonstrating that its proposed alternative measure would meet the appropriate level of protection under Article 5.6 *without* relying on evidence that is scientific in nature. The objective of ensuring protection against risks to human, animal or plant life or health is key to SPS measures, to a Member's appropriate level of protection, and to the *SPS Agreement* as a whole. Furthermore, the basic obligations set out in Article 2—which inform the more specific obligations in Article 5—include the stipulation in Article 2.2 that SPS measures must be based on scientific principles and not maintained without sufficient scientific evidence. This implies that evidence demonstrating that a proposed alternative measure takes adequate account of these key characteristics of SPS measures will necessarily form part of a complainant's attempt to prove that a contested SPS measure fails to meet the requirements of Article 5.6. In our view, this is also reinforced by the important role that science plays throughout the *SPS Agreement* in maintaining "the delicate and carefully negotiated balance in the *SPS Agreement* between the shared, but sometimes competing, interests of promoting international trade and of protecting the life and health of human beings."[535]

365. Thus, although a complainant is not *required* to do so, it is free to rely upon a risk assessment as a source of evidence relevant to its proposed alternative measure, if such a risk assessment exists. Moreover, elements of the importing Members' risk assessment as well as other factual elements

[535]Appellate Body Report, *EC – Hormones*, para. 177.

outside that risk assessment may be relevant in seeking to establish that an alternative measure meets the appropriate level of protection.[536]

366. Overall, the totality of the evidence identified and/or adduced by the complainant will have to be sufficient to establish a presumption that the alternative measure would meet the appropriate level of protection. Whether such evidence suffices to meet the burden of establishing a *prima facie* case will necessarily vary from measure to measure and from case to case.[537] A panel's assessment of whether this burden has been met is a matter of legal characterization and not a scientific assessment of risk that must conform to the first three paragraphs of Article 5.

(i) *Whether the Appellate Body can complete the analysis with respect to New Zealand's alternative measure for fire blight*

367. We now turn to the question of whether, using the correct approach to the analysis under Article 5.6, we can complete the analysis of New Zealand's claim that Australia's measures concerning the risk of fire blight are inconsistent with Article 5.6. When the factual findings of the panel and the undisputed facts in the panel record provide the Appellate Body with a sufficient basis for its own analysis, the Appellate Body may complete the analysis with a view to facilitating the prompt settlement of the dispute.[538]

368. In keeping with this approach, we must ascertain whether the factual findings made by the Panel and undisputed facts in the record demonstrate that New Zealand has established that its proposed alternative measure would meet Australia's appropriate level of protection. In particular, we must ascertain whether the Panel made relevant factual findings or whether there are sufficient undisputed facts on the Panel record that would allow us to: (i) identify the level of protection that Australia has set as its appropriate level; (ii) determine what level of protection would be achieved by New Zealand's alternative measure; and (iii) determine whether the level of protection that would be achieved by the alternative measure would satisfy Australia's appropriate level of protection.

369. With these considerations in mind, we turn to examine relevant factual findings made by the Panel with respect to the risk associated with the alternative measure of restricting imports of apples to mature, symptomless fruit. We note first that the Panel has made factual findings identifying the level of protection set by Australia, namely, that Australia's appropriate level of protection is

[536]Appellate Body Report, *Australia – Salmon*, paras. 209-213.
[537]Appellate Body Report, *US – Wool Shirts and Blouses*, p. 14, DSR 1997:I, 323, at 335.
[538]See Appellate Body Report, *Australia – Salmon*, paras. 209, 212, 241, and 255; Appellate Body Report, *Korea – Dairy*, para. 102; Appellate Body Report, *Canada – Autos*, paras. 133 and 144; Appellate Body Report, *Korea – Various Measures on Beef*, para. 128; and Appellate Body Report, *US – Continued Zeroing*, para. 189.

expressed in qualitative terms, and that it is identified in the IRA as "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero".[539] We recall, in this regard, that Annex A(5) to the *SPS Agreement* equates the appropriate level of protection with the "acceptable level of risk". Australia's appropriate level of protection refers to both concepts, describing the level of protection sought as "high", and the acceptable level of risk as "very low". Australia's risk estimation matrix, which the IRA suggests is representative of Australia's policy on its acceptable level of protection[540], makes clear that Australia's tolerance for "very low" risk is a standard that is stricter than standards that would tolerate "moderate", "high", or "extreme" risk, but not as strict as standards that would tolerate only "negligible" risk.

370. Second, we consider whether the Panel made relevant factual findings or if there are sufficient undisputed facts on the Panel record that would allow us to determine whether New Zealand has made a *prima facie* case with respect to the level of protection that would be achieved by its proposed alternative measure and, if so, whether Australia has successfully rebutted that presumption. In this context, we recall that the alternative measure proposed by New Zealand with respect to fire blight is the same as what the IRA considered "unrestricted risk", namely, imports of mature, symptomless apples.[541]

371. New Zealand submitted before the Panel that mature, symptomless apples do not provide a pathway for transmitting fire blight, and that, therefore, the risk that mature, symptomless apples would transmit fire blight is negligible.[542] In particular, New Zealand adduced evidence in support of the following propositions:

[539]Panel Report, paras. 7.963, 7.1121, and 7.1136. The Panel referred to the description of this appropriate level of protection in the *Import Risk Analysis Handbook* (2003) (Panel Exhibit AUS-10), p. 5, and the *Import Risk Analysis Handbook* (2007), p. 8 and Annex 3, and also observed that, in connection with its former, "similar qualitative ALOP", the AQIS had explained that Australia's quarantine policy is based on the concept of the management of risk to an acceptably low level. (Panel Report, footnote 2552 to para. 7.963 (quoting 1998 AQIS *Import Risk Analysis Process Handbook*, p. 11))

[540]The IRA rejected the submission by a stakeholder that the IRA's risk estimation matrix and associated methodology does not represent Australia's policy on its acceptable level of risk, and observed, in this respect, that governmental discussion of this issue had produced agreement that the "policy framework surrounding ALOP, including practical guidelines for risk analysis which illustrate the concept of a risk estimation matrix, adequately meets Australia's present needs". (IRA, Part B, pp. 4 and 5) Australia's risk estimation matrix is reproduced at paragraph 147 of this Report.

[541]See *supra*, footnote 481 to para. 330 of this Report.

[542]New Zealand's first written submission to the Panel, para. 4.8. New Zealand made this submission in the context of its claim under Article 2.2 and referred back to it in the context of its claim under Article 5.6 at para. 4.499.

- Fire blight bacteria are not found internally in mature, symptomless apples; they are only rarely found externally and then only in limited quantities.[543]

- Any fire blight bacteria found externally on mature, symptomless apples are unlikely to survive post-harvest handling, storage, and transportation in quantities sufficient to initiate infections.[544]

- Fruit would not be contaminated with fire blight during harvest, handling, storage, and transportation.[545]

- Even if external fire blight bacteria survived handling, processing, and transport of New Zealand apples to Australia, they would not be transmitted to a susceptible host in Australia.[546]

372. Before the Panel, New Zealand also emphasized that the panel in *Japan – Apples* reviewed the relevant scientific literature and found that the risk of mature, symptomless apples transmitting fire blight was negligible.[547]

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[543]New Zealand's first written submission to the Panel, paras. 4.11-4.16 (referring to R.G. Roberts, "Evaluation of buffer zone size and inspection number reduction on phytosanitary risk associated with fire blight and export of mature apple fruit" (2002) 590 *Acta Horticulturae* 47-53 (Panel Exhibit NZ-20); C.N. Hale, E.M. McRae, and S.V. Thomson, "Occurrence of *Erwinia amylovora* on apple fruit in New Zealand" (1987) 217 *Acta Horticulturae* 33-40 (Panel Exhibit NZ-21); R.G. Roberts, C.N. Hale, T. van der Zwet, C.E. Miller, and S.C. Redlin, "The potential for spread of *Erwinia amylovora* and fire blight via commercial apple fruit; a critical review and risk assessment" (1998) 17(1) *Crop Protection* 19-28 (Panel Exhibit NZ-22); R.K. Taylor, C.N. Hale, W.R. Henshall, J.L. Armstrong, and J.W. Marshall, "Effect of inoculum dose on infection of apple (*Malus domestica*) flowers by *Erwinia amylovora*" (2003) 31 *New Zealand Journal of Crop and Horticultural Science* 325-333 (Panel Exhibit NZ-23); J. Dueck, "Survival of *E. amylovora* in association with mature apple fruit" (1974) 54 *Canadian Journal of Plant Science* 349-351 (Panel Exhibit NZ-96); and R.G. Roberts, S.T. Reymond, and R.J. McLaughlin, "Evaluation of mature apple fruit from Washington State for the presence of *E. amylovora*" (1989) 73 *Plant Disease* 917-921 (Panel Exhibit NZ-97)).

[544]New Zealand's first written submission to the Panel, paras. 4.17-4.19 (referring to C.N. Hale and R.K. Taylor, "Effect of cool storage on survival of *Erwinia amylovora* in apple calyxes" (1999) 489 *Acta Horticulturae* 139-143 (Panel Exhibit NZ-24); and R.K. Taylor and C.N. Hale, "Cold storage affects survival and growth of *Erwinia amylovora* on the calyx of apple" (2003) 37(4) *Letters in Applied Microbiology* 340-343 (Panel Exhibit NZ-25)).

[545]New Zealand's first written submission to the Panel, paras. 4.20 and 4.21 (referring to S.C. Ockey and S.V. Thomson, "Influence of rain on transient populations of *Erwinia amylovora* on leaf surfaces" (2006) 704 *Acta Horticulturae* 113-119 (Panel Exhibit NZ-26)).

[546]New Zealand's first written submission to the Panel, paras. 4.22-4.26 (referring to C.N. Hale, R.K. Taylor, and R.G. Clark, "Ecology and epidemiology of fire blight in New Zealand" (1996) 411 *Acta Horticulturae* 79-85 (Panel Exhibit NZ-27); R.K. Taylor, C.N. Hale, F.A. Gunson, and J.W. Marshall, "Survival of the fire blight pathogen, *Erwinia amylovora*, in calyxes of apple fruit discarded in an orchard" (2003) 22 *Crop Protection* 603-608 (Panel Exhibit NZ-28); and R.G. Roberts and A.J. Sawyer, "An updated pest risk assessment for spread of *Erwinia amylovora* and fire blight via commercial apple fruit" (2008) 27 *Crop Protection* 362-368 (Panel Exhibit NZ-29)).

[547]New Zealand's first written submission to the Panel, para. 4.9 (referring to Panel Report, *Japan – Apples*, para. 8.153).

373. Australia, on the other hand, contended before the Panel that New Zealand's proposed alternative measure, the restriction of imports to mature, symptomless apples, had already been factored into the IRA's assessment, and that the IRA had nevertheless concluded that the risk associated with this scenario was "low", which is in excess of Australia's appropriate level of protection of "very low".[548] Australia asserted that the IRA was a valid risk assessment within the meaning of Article 5.1, and that, therefore, the Panel must find that a requirement to limit imports to mature, symptomless apple fruit would not achieve Australia's appropriate level of protection without further risk management measures. Australia also emphasized that the Panel's two appointed experts on fire blight, Dr. Paulin and Dr. Deckers, had both expressed the view that restricting imports to mature, symptomless apples would not be sufficient to reduce the risk to a level that would achieve Australia's appropriate level of protection.[549] Australia therefore contended that New Zealand had failed to show that the restriction of imports to mature, symptomless apples would achieve Australia's appropriate level of protection in respect of fire blight. Australia also asserted that the Panel's appointed experts had confirmed that Australia's principal measures for fire blight—symptomless orchards and disinfection—are warranted.[550] In response to New Zealand's reference to the findings of the panel in *Japan – Apples*, Australia contended that there are significant differences in the present dispute relating to the appropriate level of protection, climatic conditions, native flora, potential host plants, the pest and disease status of the importing and exporting Members, and the volume and mode of trade.[551]

374. New Zealand responded that Australia had misrepresented the experts' responses, and that the experts had in fact confirmed the lack of scientific evidence for the pathways at issue and for the conclusions in the IRA. In particular, New Zealand contended that the experts had confirmed that several of the main importation steps in the IRA lacked scientific evidence and that Australia's conclusion as to the percentage of New Zealand apples that will be contaminated with fire blight was unjustified. New Zealand further submitted that the experts confirmed that there is no scientific evidence of the transfer of the fire blight pathogen from apples to susceptible hosts.[552] In addition, New Zealand pointed out that many of the experts' comments were directed at reducing the likelihood of apples being imported into Australia with fire blight bacteria on them, but that this component of risk was not the most relevant one. Instead, New Zealand argued that the expert testimony did not provide "general support" for Australia's fire blight measures in relation to the *overall* risk, namely,

[548]Australia's first written submission to the Panel, para. 1084 (referring to IRA, Part B, pp. 104, 105, and 150).
[549]Australia's second written submission to the Panel, paras. 451 and 452.
[550]Australia's closing statement at the second Panel meeting, paras. 30 and 31.
[551]Australia's first written submission to the Panel, para. 26.
[552]New Zealand's response to Panel Question 126 after the second Panel meeting, para. 203.

the risk of entry, establishment and spread of fire blight combined with an assessment of consequences.[553]

375. In seeking to complete the analysis of whether New Zealand successfully established a *prima facie* case that the level of protection achieved by the alternative measure would meet the appropriate level of protection, we must assess whether the Panel made findings with respect to the substance of the four propositions raised by New Zealand. To the extent that the Panel made findings regarding the testimony of the Panel's experts, the analysis in the IRA, or scientific studies considered in the IRA, it may be appropriate to take such findings into account for the purpose of assessing whether New Zealand has made out a *prima facie* case and whether Australia has rebutted that *prima facie* case.

376. We note that the Panel record contains numerous pieces of evidence relating to the risk of fire blight, including scientific studies, the IRA's analysis and the evidence it refers to, as well as the testimony of the Panel's appointed experts. Although New Zealand presented to the Panel various pieces of evidence in support of its contention that the risk associated with the alternative measure of restricting imports of apples to mature, symptomless fruit is negligible, the Panel referred, in passing, to only a few of these pieces of evidence, and did not make express findings regarding this evidence in its analysis of whether New Zealand had successfully raised a presumption that the alternative measure concerning the risk of fire blight would meet Australia's appropriate level of protection.

377. The first proposition put forward by New Zealand was that fire blight bacteria are not found internally in mature, symptomless apples, and that they are rarely found externally and then only in limited quantities. Australia accepted that, when dealing with mature, symptomless apples, the primary risk is with external (epiphytic) infestation rather than with internal (endophytic) fire blight infection.[554] Thus, the Panel focused on the question of external (epiphytic) fire blight infestation in mature, symptomless apples. The Panel quoted from the expert testimony of Dr. Deckers and Dr. Paulin on this question, which it understood to indicate that "fire blight is not a truly epiphytic bacteria, and would be present on apple surfaces only in residual populations, diminishing over time".[555] It seems that, in pointing to this testimony, the Panel was inclined to accept New Zealand's first proposition that fire blight bacteria are not found internally in mature, symptomless apples, and that they are rarely found externally and then only in limited quantities. However, the Panel made no explicit finding to that effect.

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[553]New Zealand's response to Panel Question 126 after the second Panel meeting, para. 205.

[554]The Panel also reproduced testimony from Dr. Deckers and Dr. Paulin explaining that endophytically infected fruit could not develop into mature, symptomless apples. (Panel Report, paras. 7.1160 and 7.1161)

[555]Panel Report, para. 7.1164.

378. Second, New Zealand contended that any residual fire blight bacteria found externally on mature, symptomless apples are unlikely to survive post-harvest handling, storage, and transportation in quantities sufficient to initiate infections. We note that the Panel found in the context of its analysis under Article 5.1 that evidence cited by the IRA confirms that disinfection—a routine procedure in the packing house—can have a significant impact on reducing bacterial population[556], and that its appointed experts agreed that disinfection would result in "strongly"[557] reducing the risk of survival of the epiphytic population and a "sharp"[558] decrease in the level of bacterial population. However, it is not clear to us whether, or to what extent, this disinfection is part of standard post-harvest, storage, and transportation procedures. While the Panel's appointed experts agreed that disinfection would result in strongly decreasing bacterial population, the Panel did not make a finding on whether all apples for export from New Zealand are disinfected.

379. Third, New Zealand maintained that fruit would not be contaminated with fire blight during harvest, handling, storage, and transportation. In that respect, we note that the Panel quoted from Dr. Paulin's testimony to the effect that, due to the poor epiphytic properties of *Erwinia amylovora*, the likelihood that apples entering packing houses free of the bacterium would become contaminated during processing was "very unlikely in practical conditions" or "negligible"[559], and that the likelihood of clean fruit being contaminated during palletization, quality inspection, containerization, and transportation was "nil ... for symptomless mature apples".[560] It seems that, in pointing to this testimony, the Panel was inclined to accept New Zealand's third proposition that fruit would not be contaminated with fire blight during harvest, handling, storage, and transportation. However, the Panel made no explicit finding to that effect.

380. Fourth, New Zealand submitted that, even if external fire blight bacteria survived the handling, processing, and transport of New Zealand apples to Australia, they would not be transmitted to a susceptible host in Australia. In this regard, we note that the Panel reviewed various statements by Dr. Deckers and Dr. Paulin regarding the potential for transfer and spread of *Erwinia amylovora*. The experts characterized this in various ways, including "extremely low"[561], "hard to imagine", "a difficulty impossible for the bacteria to tackle in natural conditions"[562], "very low"[563], "difficult to

[556]Panel Report, para. 7.303.
[557]Panel Report, para. 7.302 (quoting Dr. Deckers' response to Panel Question 28, Panel Report, Annex B-1, para. 204).
[558]Panel Report, para. 7.302 (quoting Dr. Paulin's response to Panel Question 28, Panel Report, Annex B-1, para. 206).
[559]Panel Report, para. 7.1167.
[560]Panel Report, para. 7.1168.
[561]Panel Report, paras. 7.1171 and 7.1176.
[562]Panel Report, para. 7.1172.
[563]Panel Report, paras. 7.1171 and 7.1173.

prove"[564], "rather low"[565], "questionable"[566], and "rather exceptional".[567] The Panel understood these responses to "indicate that the likelihood of fire blight spreading through mature, symptomless apples is *very low*".[568]

381. The Panel went on to quote a number of other statements by these two experts downplaying the risk associated with mature, symptomless apples relative to other ways of transmitting fire blight. The Panel then found that, overall, Dr. Deckers' and Dr. Paulin's testimony demonstrates that they consider the overall risk of entry, establishment and spread of fire blight through mature, symptomless apples imported from New Zealand to be "very low".[569] It seems that the Panel may have agreed with this assessment, although it did not affirmatively say so.

382. Finally, with respect to associated potential biological and economic consequences, New Zealand argued before the Panel that, in ranking the consequences of establishment and spread of fire blight as "high", the IRA overestimated these consequences. According to New Zealand, a more realistic assessment, relying on the actual experience of countries where fire blight is present, would have resulted in the overall consequences being "very low".[570] Subsequently, New Zealand recognized that fire blight can have serious consequences. In New Zealand's view, however, "the important thing to bear in mind is that the disease is not spread by exports of mature fruit".[571]

383. In this respect, the Panel reviewed Dr. Paulin's and Dr. Deckers' expert testimony and observed that, according to these experts, the IRA "has a tendency to overestimate the severity of the consequences of fire blight", in particular with respect to the criteria of plant life or health and of domestic trade or industry, to which the IRA assigned the most severe scores of "F" and "E".[572] The Panel concluded in the light of that assessment by the experts, that the IRA's evaluation of the potential consequences associated with the unrestricted risk scenario (that is, the import of mature, symptomless apples) did not rely on adequate scientific evidence.[573] The Panel did not, however, make any finding or express any view of its own on the consequences associated with the entry, establishment and spread of fire blight in Australia.

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[564]Panel Report, para. 7.1174.
[565]Panel Report, para. 7.1176.
[566]Panel Report, para. 7.1177.
[567]Panel Report, para. 7.1178.
[568]Panel Report, para. 7.1181. (emphasis added)
[569]Panel Report, para. 7.1192.
[570]New Zealand's first written submission to the Panel, para. 4.264.
[571]Panel Report, para. 7.452 (quoting New Zealand's response to Panel Question 67 after the first Panel meeting, para. 141). See also New Zealand's second written submission to the Panel, paras. 2.455 and 2.456.
[572]Panel Report, para. 7.469.
[573]Panel Report, para. 7.470.

384. We note that the Panel also specifically asked the experts the question whether restricting imports to mature, symptomless apples would achieve Australia's appropriate level of protection.[574] We have certain reservations about the Panel having done so, given that this was the ultimate question that the Panel was charged with answering pursuant to Article 5.6. Experts may assist a panel in assessing the level of risk associated with SPS measures and potential alternative measures, but whether or not an alternative measure's level of risk achieves a Member's appropriate level of protection is a question of legal characterization, the answer to which will determine the consistency or inconsistency of a Member's measure with its obligation under Article 5.6. Answering this question is not a task that can be delegated to scientific experts. We also have more practical concerns, namely, that the Panel did not identify Australia's appropriate level of protection in its question to the experts, or clarify or explain what it understood the content of that level to be. Nor did the experts, in their replies, elaborate their understanding of Australia's appropriate level of protection. In such circumstances, and irrespective of the propriety of the question, the answers provided by the experts can be of only limited utility.[575]

385. In the light of the above, we find that there is a sufficient basis in the Panel record to find that Australia's appropriate level of protection is "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero".[576] Turning to the issue of the risk associated with New Zealand's proposed alternative measure, we have observed that the Panel reviewed a fair amount of evidence relevant to this issue. Ultimately, however, the Panel discussed but did not make findings on much of this evidence, nor on the specific propositions put forward by New Zealand, nor on New Zealand's contention that the relevant risk was "negligible". There are some suggestions that the Panel may have considered certain elements of the risk associated with the

[574]Panel Question 15, Panel Report, Annex B-1.

[575]In reviewing the responses of the experts to its question, the Panel understood the various statements made by Dr. Paulin to mean that he considered that the proposed alternative measure "renders the risk extremely low and akin to the risk of the bacteria making its way from New Zealand to Australia on air jet or some other mode of transport not connected to trade in apples". (Panel Report, para. 7.1190) In addition, although Dr. Deckers responded that the proposed alternative measure was not enough to meet Australia's appropriate level of protection, the Panel found that, overall, Dr. Deckers' and Dr. Paulin's testimony demonstrates that they consider the overall risk of entry, establishment and spread of fire blight through mature, symptomless apples imported from New Zealand to be very low—both overall and in regard to specific key points in the import scenario assessed by the IRA. (*Ibid*., para. 7.1192) The Panel explained why it considered that Dr. Deckers' statement supported the conclusion that the proposed alternative measure was sufficient to meet Australia's appropriate level of protection, even though Dr. Deckers said it would not. The Panel, however, did not explain why it read Dr. Paulin's statement to suggest that the risk of fire blight entry, establishment and spread associated with the alternative measure was "very low", when Dr. Paulin had stated he considered the risk to be "extremely low".

[576]Panel Report, paras. 7.963, 7.1121, and 7.1136.

importation of mature, symptomless apples to be "very low". The Panel also reproduced extensive testimony from its appointed experts suggesting that the certain risks were of a much smaller magnitude than "very low". However, we cannot read any of these suggestions as affirmative findings. What is more, there is no indication as to what the Panel considered to be the *overall* risk associated with the alternative measure for fire blight proposed by New Zealand, that is, the risk of entry, establishment and spread, as well as potential biological and economic consequences. We are, therefore, unable to identify sufficient uncontested facts or factual findings by the Panel to enable us to make a finding on the level of risk associated with New Zealand's alternative measure for fire blight. It follows that we cannot make the necessary comparison between the level of protection offered by New Zealand's alternative measure and Australia's appropriate level of protection, and thus cannot complete the legal analysis with respect to the second condition of Article 5.6 of the *SPS Agreement.*

(ii) *Whether the Appellate Body can complete the analysis with respect to New Zealand's alternative measure for ALCM*

386. We now turn to the question of whether we can complete the analysis of New Zealand's claim that Australia's ALCM measure is inconsistent with Article 5.6. In keeping with the approach set out above, we must ascertain whether the factual findings made by the Panel and undisputed facts on the record demonstrate that New Zealand's proposed alternative measure for ALCM satisfies the second condition of Article 5.6. In particular, we must ascertain if there are relevant Panel findings and sufficient undisputed facts on the Panel record to enable us to determine what level of protection would be achieved by the alternative measure, and whether New Zealand has made out a *prima facie* case that the level of protection that would be achieved by the alternative measure would meet Australia's appropriate level of protection and, if so, whether Australia has successfully rebutted that presumption.

387. We recall that Australia's appropriate level of protection is "providing a high level of sanitary or phytosanitary protection aimed at reducing risk to a very low level, but not to zero".[577] We next consider what level of protection would be achieved by the alternative measure proposed by New Zealand. We recall, in this connection, that the Australian measure alleged to be inconsistent with Article 5.6 is Measure 14, which consists of two options. These options are *either* the inspection of each lot of apples on the basis of a 3000-fruit sample for ALCM, with detection of any live

[577]Panel Report, paras. 7.963, 7.1121, and 7.1136.

quarantineable arthropod resulting in appropriate treatment or rejection for export; *or* the option of mandatory appropriate treatment (fumigation) of all lots plus inspection of each lot on the basis of a 600-fruit sample.[578]

388. The alternative measure proposed by New Zealand consists of inspection of a 600-fruit sample from each import lot and treatment (fumigation) in the event that ALCM is found. Thus, New Zealand's alternative was the same as the first option of Australia's Measure 14, except that the sample size in New Zealand's alternative measure (600 fruit) was smaller than the sample size in the first option of Measure 14 (3000 fruit).[579] We note that the IRA expressly considered this alternative measure as a possible risk management option, following its determination that the unrestricted risk exceeded Australia's appropriate level of protection.[580] Further, the IRA assumed that fumigation would be 100 per cent effective in killing the ALCM present on fruit.[581]

389. Regarding the question of what level of protection could be achieved by the alternative measure, we note that New Zealand submitted before the Panel that there is a negligible risk of transmission and establishment of ALCM with inspection of a 600-fruit sample (and remedial action where appropriate). In particular, New Zealand adduced evidence relating to the following propositions[582]:

- The level of infestation of viable ALCM cocoons on New Zealand apples is not biologically significant.[583]

- Fruit would not become contaminated with ALCM during harvest, handling, and transportation to the packing house.[584]

[578]This inspection is to check for pests other than ALCM. (IRA, Part B, p. 321)

[579]The participants confirmed, at the oral hearing in this appeal, that under New Zealand's proposed alternative measure with a 600-unit sample size, detection of any live quarantineable arthropod would also result in appropriate treatment or rejection for export.

[580]See *supra*, para. 164 of this Report.

[581]IRA, Part B, p. 188.

[582]New Zealand adduced this evidence in the context of its claim under Article 2.2 and referred back to it in the context of its claim under Article 5.6 at paragraph 4.517 of its first written submission to the Panel.

[583]New Zealand's first written submission to the Panel, paras. 4.107-4.111 (referring to A.R. Tomkins, D.J. Wilson, S.O. Hutchings, and S. June, "A survey of Apple Leafcurling Midge (*Dasyneura mali*) management in Waikato Orchards", *Proceedings of the 47th New Zealand Plant Protection Conference* (1994) (Panel Exhibit NZ-43), pp. 346-349; and D.H. Todd, "The Apple Leafcurling Midge, Dasyneura mali Kieffer, Seasonal History, Varietal Susceptibility and Parasitism" (1959) 2 *New Zealand Journal of Agricultural Research*, 859-869 (Panel Exhibit NZ-44).

[584]New Zealand's first written submission to the Panel, paras. 4.112-4.115 (referring to IRA, Part B, p. 163).

– Any infestation of New Zealand apples will be at so low a level that the establishment of ALCM in Australia is extremely unlikely.[585]

390. In response, Australia contended that the IRA had assessed the alternative measure proposed by New Zealand, but found that a 600-fruit inspection system alone would not reduce the risks associated with ALCM sufficiently to achieve Australia's appropriate level of protection.[586] Australia also relied upon aspects of testimony of the Panel's appointed ALCM expert, Dr. Cross, as supporting the IRA's views: (i) with respect to the infestation rates and the limited data available regarding the occupancy and viability of cocoons on New Zealand apples; (ii) that whether a particular infestation level would be enough to initiate a colony depended on a sufficient number of imported apples being simultaneously located within sufficient proximity to apple trees; (iii) that the period of emergence is variable and not necessarily as long as claimed by New Zealand; and (iv) that the flight ranges of ALCM identified in the IRA were reasonable.[587] Australia also considered that the Panel's experts largely endorsed the IRA's recommended risk management measures and, with respect to ALCM, recognized that the best existing data indicated that the 600-unit inspection sample proposed by New Zealand, because it was insufficiently sensitive, would not reduce the risk to a level that would meet Australia's appropriate level of protection.[588]

391. In response, New Zealand took issue with the IRA's analysis of the level of unrestricted risk of ALCM and the effect of a 600-fruit sample inspection, highlighting flaws in the methodology of the IRA, as well as the IRA's failure to consider the factors of cocoon viability, ALCM flight range, and normal trade practices.[589] New Zealand further responded that Australia had misrepresented the experts' responses, and that the Panel's experts had in fact confirmed the lack of scientific evidence for the pathways at issue and for the conclusions in the IRA. In particular, New Zealand contended that Dr. Cross did not express the view that the intensity of any inspection would need to be determined by reference to more reliable data with respect to factors such as viability. He explained that the sample size for inspection should be selected on the basis of the appropriate level of protection, rather than

[585]New Zealand's first written submission to the Panel, paras. 4.116-4.132 (referring to IRA, Part B, p. 171); D.M. Suckling, J.T.S. Walker, P.W. Shaw, L. Manning, P. Lo, R. Wallis, V. Bell, W.R.M. Sandanayaka, D.R. Hall, J.V. Cross, and A.M. El-Sayed, "Trapping *Dasineura mali* (Diptera: Cecidomyiidae) in Apples" (2007) 100(3) *Journal of Economic Entomology* 745-751 (Panel Exhibit NZ-15); and R.T. Baker, J.M. Cowley, D.S. Harte, and E.R. Frampton, "Development of a Maximum Pest Limit for Fruit Flies (Diptera: Tephritidae) in Produce Imported into New Zealand" (1990) 83(1) *Journal of Economic Entomology* 13-17 (Panel Exhibit NZ-46)).

[586]Australia's first written submission to the Panel, paras. 1089-1098 (referring to IRA, Part B, pp. 188-190; and *Methodologies for sampling of consignments* (2008) (ISPM No. 31, FAO, Rome) (Panel Exhibit AUS-30)).

[587]Australia's second written submission to the Panel, paras. 624, 625, 633, 635, 636, 644, 657, 658, and 673.

[588]Australia's closing statement at the second Panel meeting, paras. 30 and 32.

[589]New Zealand's second written submission to the Panel, para. 2.899.

being adjusted to fit the infestation rate. New Zealand further submitted that Dr. Cross also confirmed that this was not the approach used in the IRA. The IRA used the infestation level, rather than an identified tolerance level, as the key determinant that led to selection of a risk management measure that would result in fumigation of virtually every apple, effectively taking a zero-risk approach.[590]

392. We note that New Zealand presented to the Panel various pieces of evidence in support of its proposition that the risk associated with the alternative measure of requiring inspection of a 600-fruit sample from each import lot is negligible. Thus, the relevant evidence before the Panel consisted of evidence presented by New Zealand, testimony of the appointed experts, the IRA, and evidence discussed in the IRA.

393. In seeking to complete the analysis of whether New Zealand successfully established a *prima facie* case that the level of protection achieved by the alternative measure would meet the appropriate level of protection, we must assess whether the Panel made findings with respect to the substance of the three propositions raised by New Zealand.

394. First, New Zealand argued that the level of infestation of viable ALCM cocoons on New Zealand apples is not biologically significant. More specifically, New Zealand argued that seasonal population development results in a low number of occupied cocoons and that the parasitic wasp *Platygaster demades* negatively affects ALCM in New Zealand resulting in a high number of cocoons that are empty or contain dead pupae. The Panel criticized the IRA for assessing the likelihood that picked apple fruit is infested with ALCM based on the estimated number of apples with cocoons.[591] In doing so, the Panel referred to Dr. Cross' statement that "[i]f only 25% of cocoons contain viable ALCM then the values should be 4 times smaller".[592] The Panel also referred to Dr. Cross' statement that, in order to arrive at the actual infestation rate when calculating the appropriate sample size for inspection for ALCM, the "infestation rate would [have to] be reduced by a factor 0.5 × 0.7 for reduced viability and parasitism and probably by a further factor of 0.1 – 0.5 for the protracted emergence relative to the short life span".[593] The Panel further relied on Dr. Cross' statement that, based on the above values, "actual effective infestation rates of 0.1% or even 0.05% would be more realistic".[594] In addition, the Panel found that "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

[590]New Zealand's response to Panel Question 126 after the second Panel meeting, paras. 209 and 210.
[591]Panel Report, para. 7.801.
[592]Panel Report, para. 7.801 (quoting Dr. Cross' response to Panel Question 109, Panel Report, Annex B-1, para. 650).
[593]Panel Report, para. 7.1325 (quoting Dr. Cross' response to Panel Question 104, Panel Report, Annex B-1, paras. 624-627).
[594]Panel Report, para. 7.1325 (quoting Dr. Cross' response to Panel Question 104, Panel Report, Annex B-1, paras. 624-627).

realistic"[595] than the infestation rate originally estimated by the IRA, in the light of the various factors that the IRA did not properly take into account.[596]

395. Having reviewed the above statements of the Panel and references to its appointed experts' testimony, it is not clear to us what significance the Panel attached to this evidence. It seems that, in pointing to Dr. Cross' testimony, and his statement that the infestation rate should be reduced by a factor of "0.5 × 0.7 ... and probably by a further factor of 0.1 – 0.5", the Panel may have been inclined to accept New Zealand's first proposition that the level of infestation of viable ALCM cocoons on New Zealand apples is not biologically significant. Yet it made no express finding on this issue.

396. Second, New Zealand submitted that fruit would not become contaminated with ALCM during harvest, handling, and transportation to the packing house, because at the time of harvest, there are few young and actively growing leaves (normally associated with ALCM), ALCM eggs will already have hatched, and most larvae will be in cocoons.[597] The Panel made no findings with respect to this proposition.[598]

397. Third, New Zealand contended that any infestation of New Zealand apples will be at so low a level that the establishment of ALCM in Australia is extremely unlikely. More specifically, New Zealand argued that most New Zealand apples will be consumed or decay before the emergence of ALCM pupae, because cold storage of apples after packaging mimics environmental conditions in autumn and winter, and any pupae attached to apples would enter into a delayed developmental stage of diapause and would emerge only when the climatic conditions necessary for emergence have been met. Even if ALCM did emerge in the harvest period, there would be no young, actively growing apple leaves available on which to lay eggs.[599]

398. The Panel appeared to accept New Zealand's contention that Australia's packing house practices make it "highly unlikely" that a large number of deposited apples would be left uncovered, as well as Dr. Cross' statement that ALCM are "weak fliers [and] it seems unlikely that [they] would have a very long range of dispersal".[600] Thus, the Panel found that New Zealand had demonstrated that with the "worst case" infestation level, several thousand apples (15,000-19,000 apples) imported from New Zealand would need to be deposited uncovered for a sufficiently long period of time for

[595]The two data sets used by the IRA in assessing the risk associated with ALCM are explained *supra*, para. 156 of this Report.
[596]Panel Report, para. 7.1360.
[597]New Zealand's first written submission to the Panel, para. 4.114.
[598]This proposition is not listed among the ones assessed by the Panel in paragraph 7.788 of its Report. The Panel's review of the expert testimony in the context of Article 5.6 also makes no reference to it.
[599]New Zealand's first written submission to the Panel, paras. 4.117-4.120.
[600]Panel Report, para. 7.1313.

any ALCM transmission to occur. The Panel found that New Zealand had made a "convincing case" that this situation would "probably almost never occur".[601] It is not clear to us what level of probability the Panel is referring to in using the terms "will probably almost never occur". The Panel's finding could perhaps be read as accepting New Zealand's third proposition, that the establishment of ALCM in Australia is "extremely unlikely". However, as the Panel qualifies its finding in two different ways, using the terms "probably" and "almost", and does not mention the term "extremely unlikely", we are not confident that this is, in fact, what the Panel found.

399. We note that the Panel also specifically asked the experts a question concerning the IRA's conclusion that the alternative measure of requiring inspection of a 600-fruit sample from each import lot would not achieve Australia's appropriate level of protection.[602] We have already expressed certain reservations about such questions by the Panel.[603] In any event, the specific question asked by the Panel was a composite one containing various elements. Neither the Panel, in its question, nor the experts, in their responses, identified Australia's appropriate level of protection or clarified what they understood to be the content of that standard. The experts' responses also contained a number of different elements, and it is not readily apparent which parts of them go to the issue of the relationship between the alternative measure and Australia's appropriate level of protection.

400. In any event, the Panel reviewed the responses of the experts to this question. The Panel made reference to Dr. Cross' statement that the IRA's flawed risk analysis should be recalculated taking into account the factors that it had not properly considered, that some of these factors were crucial for establishing the appropriate sample size for the inspection requirement and that, once this was done, it might be found that the unrestricted risk estimates "fall [ ] below" Australia's appropriate level of protection.[604] Furthermore, the Panel noted that Dr. Deckers was sceptical about the need for fumigating all New Zealand apples for ALCM.[605] However, for the reasons set out above, we do not think that it was appropriate for the Panel to attach significance to these particular statements by the experts.

401. With respect to the potential biological and economic consequences associated with ALCM, New Zealand argued that the IRA's analysis overstates the likely consequences of ALCM.[606] In

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[601]Panel Report, para. 7.1312.
[602]Panel Question 120, Panel Report, Annex B-1.
[603]*Supra*, para. 384 of this Report.
[604]Panel Report, paras. 7.1323 and 7.1324 (quoting Dr. Cross' response to Panel Question 120, Panel Report, Annex B-1, paras. 684-687; and Transcript of the Panel's meeting with the scientific experts, Panel Report, Annex B-2, Dr. Cross, para. 663).
[605]Panel Report, para. 7.1326.
[606]Panel Report, para. 7.872 (referring to New Zealand's second written submission to the Panel, paras. 2.768 and 2.784).

New Zealand's view, "Australia's purported analysis of the 'associated potential biological and economic consequences' of ALCM constitutes nothing more than a listing of unsubstantiated assumptions."[607] The Panel reviewed the testimony of its appointed experts and, in particular, quoted Dr. Cross' statement that "some of the terms used [in Australia's methodology for assessing impacts] are relativistic and are not clearly defined".[608] The Panel also noted that Dr. Cross considered that effects of ALCM infestation on skin finish and fruit quality set out in the IRA had not been reported elsewhere and were "extraordinary".[609] The Panel found that the IRA, which classified the overall biological and economic consequences of ALCM as "low", had a tendency to overestimate the severity of ALCM consequences.[610]

402. In the light of the above, we observe that the Panel reviewed a fair amount of evidence relating to the issue of the risk associated with New Zealand's proposed alternative measure. Ultimately, however, the Panel discussed, but did not clearly make findings on much of this evidence nor on the specific propositions put forward by New Zealand in support of its claim under Article 5.6. The Panel seems to have considered that, under the alternative measure of requiring inspection of a 600-fruit sample from each import lot, transmission of ALCM to a susceptible host plant would "probably almost never occur". The Panel also reproduced testimony from its appointed experts suggesting that certain other risks were difficult to calculate, or had not been calculated. However, we cannot read any of these suggestions as affirmative findings. In addition, there is no indication as to what the Panel considered to be the *overall* risk associated with the alternative measure relating to ALCM proposed by New Zealand, that is, the risk of entry, establishment and spread of ALCM, as well as the associated potential biological and economic consequences. We are, therefore, unable to identify sufficient uncontested facts or factual findings by the Panel to enable us to make a finding on the level of risk associated with New Zealand's alternative measure for ALCM. It follows that we cannot make the necessary comparison between the level of protection offered by New Zealand's alternative measure and Australia's appropriate level of protection. We therefore cannot complete the legal analysis with respect to the second condition of Article 5.6 of the *SPS Agreement.*

3. Australia's Remaining Allegations of Error

403. As we have reversed the Panel's finding that Australia's measures regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*, there is no need for us to consider the

[607]Panel Report, para. 7.872 (quoting New Zealand's first written submission to the Panel, para. 4.377).
[608]Panel Report, para. 7.879 (quoting Dr. Cross' response to Panel Question 96, Panel Report, Annex B-1, para. 556).
[609]Panel Report, para. 7.881 (quoting Dr. Cross' response to Panel Question 96, Panel Report, Annex B-1, para. 560).
[610]Panel Report, para. 7.883.

other arguments put forth by Australia in support of its appeal of these Panel findings, namely: (i) that the Panel misapplied the rules governing the burden of proof by requiring New Zealand to demonstrate only that its proposed alternative measures "might" or "may" achieve Australia's appropriate level of protection, instead of requiring New Zealand to demonstrate that they "would" do so; (ii) that the Panel misinterpreted the words "appropriate level of sanitary or phytosanitary protection" in Article 5.6, because it assessed only the likelihood of entry, establishment and spread of a pest and failed to assess the "associated potential biological and economic consequences"; and (iii) that the Panel failed to make an objective assessment of the matter before it in the context of its analysis of Article 5.6 of the *SPS Agreement*.[611]

404. We nevertheless make the following observations. First, with respect to the issue of burden of proof, we consider—as, indeed, does Australia—that the Panel properly articulated the relevant burden of proof when it stated that it would "assess whether New Zealand has adduced sufficient evidence to raise a presumption that the proposed alternative measure would achieve Australia's ALOP".[612] Where the Panel erred, as we have explained above, was in importing reasoning and findings relating to deficiencies in the IRA's reasoning from its analysis of New Zealand's Article 5.1 claim rather than undertaking an independent analysis of New Zealand's Article 5.6 claim and assessing the arguments and evidence before it in accordance with that burden of proof.

405. Second, we tend to agree with Australia that the concept of "appropriate level of protection", also referred to as the "acceptable level of risk", is informed by the meaning of "risk" in the phrase "risk assessment" in Annex A(4), namely, an assessment of "the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences". In other words, we accept that the "risk" associated with a pest or disease may encompass "consequences". In any event, it is certainly the case that Australia has included consequences in the appropriate level of protection that it has established, as evidenced by, *inter alia*, its risk estimation matrix (reproduced *supra*, at paragraph 147 of this Report) and that, therefore, any assessment of whether an alternative measure meets that appropriate level of protection must, to the extent relevant, take account of the potential consequences associated with the entry, establishment and spread of a pest.

406. Third, Australia asserts that the Panel failed to make an objective assessment of the matter before it in the context of its analysis of Article 5.6 of the *SPS Agreement*[613] and suggests that a panel

[611]Australia's appellant's submission, paras. 178 and 188(3).
[612]Australia's appellant's submission, para. 170 (quoting Panel Report, para. 7.1137).
[613]Australia's appellant's submission, paras. 178 and 188(3).

must, consistently with its "limited mandate" under Article 11 of the DSU, refrain from conducting its own risk assessment to determine whether the alternative measure would achieve the appropriate level of protection.[614] We are unsure precisely what Australia is claiming in invoking Article 11 in this manner, and Australia does not present any arguments in support of this allegation. As the Appellate Body has held, a challenge under Article 11 of the DSU must stand by itself and be substantiated with specific arguments, rather than merely being put forth as a subsidiary argument or claim in support of a claim of a panel's failure to construe or apply correctly a particular provision of a covered agreement.[615]

C. *Conclusion*

407. In the light of the above, we *reverse* the Panel's finding, in paragraphs 7.1403 and 8.1(e)[616] of the Panel Report, that Australia's measures at issue regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*. We are, however, unable to complete the legal analysis of New Zealand's claim under Article 5.6 of the *SPS Agreement*.

IX. New Zealand's Other Appeal – Annex C(1)(a) and Article 8 of the *SPS Agreement*[617]

408. We now turn to New Zealand's other appeal. New Zealand requests us to reverse the Panel's finding that "New Zealand's claim under Annex C(1)(a) ... and its consequential claim under Article 8 of the SPS Agreement are outside of the Panel's terms of reference in this dispute".[618] New Zealand further requests us to complete the analysis with regard to its claims of undue delay.[619]

409. New Zealand contends that the Panel erred in finding that New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement* were outside of the terms of reference. In particular, New Zealand argues that the Panel erred in finding that the measure at issue in the context of a claim of violation of the "undue delay" obligation in Annex C(1)(a) must necessarily be the "procedure" referred to in the chapeau of Annex C(1)(a).[620] The reference to "approval procedures" in Annex C(1)(a) does not mean, according to New Zealand, that such "approval procedures" must be

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[614]Australia's appellant's submission, para. 178.
[615]Appellate Body Report, *US – Steel Safeguards*, para. 498.
[616]See also Panel Report, paras. 7.1197 and 7.1266 (with respect to fire blight), and paras. 7.1328 and 7.1365 (with respect to ALCM).
[617]We refer to "17" measures only in our analysis of the measures that New Zealand identified in its panel request. (See *infra*, paras. 411 through 426 of this Report) However, when completing the legal analysis and, ultimately, making our findings on this section of our Report, we refer to the "16" measures that are in dispute since, as explained *supra* at paragraph 126 of this Report, the parties reached an agreement regarding Measure 12 and New Zealand notified the Panel that it would no longer pursue its claims in relation to this measure.
[618]Panel Report, para. 8.1(f).
[619]New Zealand's other appellant's submission, para. 29.
[620]New Zealand's other appellant's submission, para. 23.

identified as the measures at issue in the request for the establishment of a panel[621] nor, in New Zealand's view, is there a requirement in the covered agreements that the measure at issue must directly cause the violation of the relevant obligations.[622] In finding that only those "procedures" referred to in the chapeau of Annex C(1)(a) can be the measure at issue, the Panel improperly limited the measures at issue by reference to the specific obligation being challenged, thus blurring the distinction between measures and claims in Article 6.2 of the DSU. In New Zealand's view, however, the 17 measures were an appropriate target for its Annex C(1)(a) and Article 8 claims because those measures were not developed without undue delay.[623]

410. Australia, for its part, agrees with the Panel's ultimate finding that New Zealand's Annex C(1)(a) and Article 8 claims fall outside the Panel's terms of reference. In particular, Australia considers that the Panel correctly found that the object of New Zealand's claims, namely, the "IRA process", was not identified in the panel request and that the "IRA process" is a measure distinct from the 17 measures challenged by New Zealand.[624]

A. *Whether the Panel Erred in Finding that New Zealand's Claims under Annex C(1)(a) and Article 8 of the SPS Agreement were Outside Its Terms of Reference*

411. The Panel began its analysis by examining whether the measures relating to New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement* fell within its terms of reference.[625] In answering this jurisdictional question, the Panel first noted that the text of Annex C(1)(a) refers to "procedures to *check and ensure* the fulfilment of SPS measures"[626], and that the "IRA process" is the type of procedure that, if unduly delayed, "might infringe Annex C(1)(a) of the SPS Agreement".[627]

412. The Panel then turned to the issue of whether New Zealand had identified a relevant procedure in its panel request. The Panel noted that the identified measures were limited to the 17 measures listed in the bullet points in New Zealand's panel request. Yet, the Panel was of the view that New Zealand did not intend to challenge the content of the 17 measures "as such" but, rather, that the target of New Zealand's claims was the alleged delay in the "procedure leading to the adoption of these 17 requirements".[628] Since New Zealand's panel request did not specifically refer to this procedure, the Panel concluded that New Zealand had "not properly identified the measure at

[621]New Zealand's other appellant's submission, para. 17.
[622]New Zealand's other appellant's submission, paras. 9-12.
[623]New Zealand's other appellant's submission, para. 21.
[624]Australia's appellee's submission, paras. 10 and 11.
[625]Panel Report, para. 7.1443.
[626]Panel Report, para. 7.1463. (original emphasis)
[627]Panel Report, para. 7.1465.
[628]Panel Report, para. 7.1468.

issue in its panel request in the context of its Annex C(1)(a) and Article 8"[629] claims, and that, accordingly, these claims fell outside its terms of reference.[630]

413. We recall that earlier in the proceedings the Panel had, in response to a request by Australia, issued a preliminary ruling in which the Panel determined that the 17 measures identified by New Zealand in its panel request were within the Panel's terms of reference and that no other measure had been properly identified in the panel request. The Panel also found in its preliminary ruling that, although it "would ideally have preferred a more explicit explanation of *how* or *why* the measures at issue are considered by New Zealand to be violating the identified provisions of the SPS Agreement", New Zealand had—based on the language used in the panel request and on the specific content of the provisions invoked—provided "enough information to adequately inform the responding party and other WTO Members on the nature of the complaint and to allow the responding party to begin preparing its defence".[631] The Panel subsequently declined to make a second preliminary ruling requested by Australia on the specific issue of whether New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement* were outside the Panel's terms of reference.[632]

414. Therefore, it seems that the preliminary ruling of the Panel determined that: the *measures at issue* in this dispute were the 17 measures listed in the bullet points in New Zealand's panel request, and nothing else; and that the relevant *claims* were the provisions cited by New Zealand in its panel request, which include Article 8 and Annex C(1)(a) to the *SPS Agreement*. We observe that neither party has appealed the Panel's preliminary ruling or its decision not to issue a second preliminary ruling.

415. Against this backdrop, we begin our analysis with the text of Article 6.2 of the DSU, which provides, in relevant part:

> The request for the establishment of a panel shall ... identify the specific measures at issue and provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly.

416. Article 6.2 of the DSU serves a pivotal function in WTO dispute settlement and sets out two key requirements that a complainant must satisfy in its panel request, namely, the "identification of the specific measures at issue, and the provision of a brief summary of the legal basis of the complaint

[629]Panel Report, para. 7.1474.
[630]Panel Report, paras. 7.1477 and 8.1(f).
[631]Preliminary Ruling of the Panel, 6 June 2008, Panel Report, Annex A-2, para. 11. (original emphasis) We are puzzled, therefore, by the Panel's statement at paragraph 7.1474 of its Report that "New Zealand did not ... provide a brief summary of *why* and *how* these provisions could be infringed by the 17 specific requirements at issue". (original emphasis)
[632]Panel Report, paras. 1.15 and 1.16.

(or the claims)".[633] Together, these two elements constitute the "*matter* referred to the DSB"[634], so that, if either of them is not properly identified, the matter would not be within the panel's terms of reference. Fulfilment of these requirements is not a mere formality. Rather, as the Appellate Body has previously held, the elements that must be identified serve a twofold purpose, namely: (i) they form the basis for the terms of reference of panels, in accordance with Article 7.1 of the DSU; and (ii) they ensure due process by informing the respondent and third participants of the matter brought before a panel.[635]

417. Moreover, the two requirements in Article 6.2 of the DSU are distinct and "should not be confused".[636] In *Guatemala – Cement I*, the Appellate Body indicated that, because the panel read the word "measure" in Article 6.2 of the DSU "as synonymous with allegations of *violations*" of the covered agreements, the panel in that dispute had "blur[red] the distinction between a 'measure' and 'claims' of nullification or impairment of benefits".[637] Similarly, in *EC – Selected Customs Matters*, the Appellate Body determined that the panel—by reading the term "measure at issue" in Article 6.2 in the light of the obligation allegedly violated—had blurred the distinction between measures and claims.[638] Accordingly, the measure at issue and the claim are two distinct elements that a complainant must identify in order to bring a matter properly within the terms of reference of a panel. In checking that a complainant has complied "with both the letter and the spirit of Article 6.2 of the DSU"[639], a panel must satisfy itself that both of these elements have been properly identified in the panel request.

418. It is also well established that compliance with the requirements of Article 6.2 must be determined on the face of the request for the establishment of the panel and that "[d]efects [therein] cannot be 'cured' in the subsequent submissions of the parties during the panel proceedings".[640] Such submissions may be used only to confirm the meaning of the *words used* in the panel request and in assessing whether there has been prejudice to the responding Member's ability to prepare its defence.

419. We have two main concerns with the Panel's approach to its analysis of New Zealand's claims under Annex C(1)(a) and Article 8 of the *SPS Agreement*.

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[633]Appellate Body Report, *US – Carbon Steel*, para. 125. (emphasis omitted)
[634]Appellate Body Report, *US – Carbon Steel*, para. 125. (emphasis added)
[635]See Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 108; Appellate Body Report, *US – Continued Zeroing*, para. 161; Appellate Body Report, *US – Carbon Steel*, para. 126; and Appellate Body Report, *EC – Bananas III*, para. 142.
[636]Appellate Body Report, *EC – Selected Customs Matters*, para. 132.
[637]Appellate Body Report, *Guatemala – Cement I*, para. 69. (original emphasis)
[638]Appellate Body Report, *EC – Selected Customs Matters*, para. 132.
[639]Appellate Body Report, *EC – Bananas III*, para. 142.
[640]Appellate Body Report, *US – Carbon Steel*, para. 127 (referring to Appellate Body Report, *EC – Bananas III*, para. 143).

420. First, it appears to us that the Panel has conflated the requirement to identify the measure at issue with the requirement to identify the legal basis of the complaint (the claim). The Panel began its analysis by formulating the question before it as whether the *measures* relating to New Zealand's claims under Annex C(1)(a) and Article 8 were within the Panel's terms of reference.[641] The Panel further considered that the 17 requirements, on the one hand, and "their development", on the other hand, are separate measures.[642] The Panel explained that its findings regarding the measures within the Panel's terms of reference did not cover "the procedure through which the requirements were developed in the IRA process".[643] The Panel then considered ways in which New Zealand could have identified the *measure* alleged to infringe the obligation in Annex C(1)(a) and Article 8 of the *SPS Agreement*.[644] However, having focused its analysis entirely on which *measures* were or should have been identified by New Zealand, the Panel went on to find that "New Zealand's Annex C(1)(a) *claim* and its consequential *claim* under Article 8 of the SPS Agreement are outside of the Panel's terms of reference in this dispute".[645]

421. As previously noted, *measures* and *claims* are distinct, and Article 6.2 sets out separate requirements that must each be satisfied in a panel request in order for a matter to form part of a panel's terms of reference. The Panel failed to take proper account of this key distinction between *measures* and *claims* by, on the one hand, undertaking an analysis as to whether New Zealand had identified the specific *measure at issue* in its panel request and, on the other hand, finding that it was New Zealand's *claims*, not the *measure*, that were outside the Panel's terms of reference.

422. Second, we have concerns about the way in which the Panel analyzed whether New Zealand had satisfied the requirement of identifying the specific *measure at issue* in its panel request. The Panel described its approach as follows:

> whether the 17 specific requirements at issue <u>can violate</u> Annex C(1)(a) of the SPS Agreement, or alternatively, whether the measure that could allegedly infringe Annex C(1)(a) is different from these 17 specific requirements, and hence not properly identified in New Zealand's panel request.[646] (underlining added)

423. The Panel further asked "*what* does New Zealand challenge under Annex C(1)(a)? *What*, according to New Zealand, <u>causes the violation</u> of Annex C(1)(a)?"[647] The Panel, therefore, seems to have understood that the question of whether the 17 measures identified in the panel request *can*

[641]Panel Report, para. 7.1443.
[642]Panel Report, para. 7.1469.
[643]Panel Report, para. 7.1473.
[644]Panel Report, para. 7.1475.
[645]Panel Report, paras. 7.1477 and 8.1(f). (emphasis added)
[646]Panel Report, para. 7.1453.
[647]Panel Report, para. 7.1459. (original italics; underlining added)

violate, or *cause the violation of*, the obligation in Annex C(1)(a) and Article 8 of the *SPS Agreement* was a jurisdictional question. We disagree with this approach by the Panel. For a matter to be within a panel's terms of reference—in the sense of Articles 6.2 and 7.1 of the DSU—a complainant must identify "the specific measures at issue" and the "legal basis of the complaint sufficient to present the problem clearly". Moreover, "a complaining Member enjoys certain discretion in the identification of the specific measure at issue"[648] and "[a]s long as the specificity requirements of Article 6.2 are met, [there is] no reason why a Member should be precluded from setting out in a panel request 'any act or omission' attributable to another Member as the measure at issue".[649] Article 6.2 of the DSU does not impose any additional requirement, as the Panel's analysis implies, that a complainant must, in its request for establishment of a panel, demonstrate that the identified measure at issue *causes the violation of*, or *can violate*, the relevant obligation.

424. In this dispute, the Panel's analysis under Article 6.2 should have been confined to determining what New Zealand had identified as the specific measures at issue and, separately, what New Zealand had identified as the legal basis for its complaint (its claims).[650] The Panel had already found in its preliminary ruling that New Zealand's panel request identified the 17 measures, and Annex C(1)(a) and Article 8 of the *SPS Agreement* as the basis for New Zealand's claims, and that, therefore, this matter was within the Panel's terms of reference.[651]

425. By contrast, the question of whether the measures identified in the panel request *can violate*, or *cause the violation of*, the obligation in Annex C(1)(a) and Article 8 is a substantive issue to be addressed and resolved on the merits. Yet the Panel stopped its analysis at the jurisdictional stage. The Panel never proceeded to an analysis of whether New Zealand had made a *prima facie* case that the 17 measures, as identified by New Zealand in its panel request, were inconsistent with Annex C(1)(a) and Article 8 of the *SPS Agreement.*

426. In the light of the above considerations, we conclude that the Panel erred in finding, at paragraphs 7.1477 and 8.1(f) of its Report, that New Zealand's claim under Annex C(1)(a) and its consequential claim under Article 8 of the *SPS Agreement* are outside the Panel's terms of reference in this dispute. Accordingly, we *reverse* this finding.

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[648]Appellate Body Report, *EC – Selected Customs Matters*, para. 149.

[649]Appellate Body Report, *EC – Selected Customs Matters*, para. 133. See also Appellate Body Report, *US – Upland Cotton*, para. 263, where, in the context of the request for consultations, the Appellate Body held that "requesting Members should enjoy a degree of discretion to identify, in their request for consultations under Article 4.2, matters relating to the covered agreements for discussion in consultations".

[650]We have difficulty understanding why the Panel considered it useful to engage in an abstract analysis of "what kind of precise language would have been appropriate for New Zealand to use" to identify, in its panel request, a measure other than the measures that New Zealand did identify. (Panel Report, para. 7.1475)

[651]We also note the Panel's recognition at paragraph 11 of its preliminary ruling that New Zealand's panel request did not prejudice "Australia's ability to defend itself in the course of the Panel's proceedings".

B. *Completion of the Legal Analysis*

427. New Zealand requests us to "complete the analysis of New Zealand's undue delay claim".[652] Although New Zealand does not identify precisely what ruling it is seeking to obtain from us, New Zealand does indicate that it "has challenged, under Annex C(1)(a), the undue delay in the development of the [16] requirements specified in the IRA [as] set out in New Zealand's panel request".[653] New Zealand adds that it "does not consider that Annex C(1)(a), properly interpreted, precludes such a challenge, or requires that the measure at issue must necessarily be the expired IRA process."[654]

428. As a legal matter, we understand New Zealand's request for completion of the analysis to be based on the following three propositions: (i) there is no requirement in the *SPS Agreement* that "for every obligation, the measure at issue must necessarily directly cause the violation"[655]; (ii) the 16 SPS measures at issue "are inextricably linked to the process by which they were developed; they were not developed without undue delay, and they continue to impair benefits"[656]; and (iii) delay is "undue" when it "exceeds the time that is reasonably needed to check and ensure the fulfilment of its relevant SPS requirements".[657]

429. New Zealand also points to the following "key factual matters", which it asserts "are uncontested", in support of its request for completion of the analysis[658]: (i) the eight-year period it took to complete the IRA[659]; (ii) letters sent by AQIS shortly after the initiation of the IRA process indicating that "the risk analysis will take approximately twelve months to complete", and that it would conduct a routine process "based on consideration that this proposal is technically less complex and does not require assessment of significantly greater or different risks than those ... previously examined"[660] by Australia's quarantine service; (iii) the recognition, in an Australian Government-

[652]New Zealand's other appellant's submission, para. 27; see also paras. 4 and 29.
[653]New Zealand's other appellant's submission, para. 3.
[654]New Zealand's other appellant's submission, para. 3.
[655]New Zealand's other appellant's submission, para. 11.
[656]New Zealand's other appellant's submission, para. 21.
[657]New Zealand's other appellant's submission, para. 28 (quoting Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1499).
[658]New Zealand's other appellant's submission, para. 28.
[659]New Zealand's other appellant's submission, para. 28 (referring to Panel Report, paras. 2.31 and 2.32; and Annex I of Australia's first written submission to the Panel).
[660]New Zealand's other appellant's submission, para. 28. See Letter from AQIS to New Zealand's Ministry of Agriculture and Forestry, dated 25 February 1999; and additional letters to stakeholders regarding the IRA, dated 15 April 1999 and 28 June 1999 (Panel Exhibit NZ-104).

mandated review of Australia's quarantine system, that "the delay is 'difficult to justify'"[661]; and (iv) the absence of any explanation of or justification for this delay by Australia.

430. In response, Australia argues that New Zealand's "substantive undue delay claim is based on a misinterpretation of Annex C(1)", because the ordinary meaning of a procedure that checks and ensures the fulfilment of SPS measures, within the meaning of Annex C(1)(a), cannot be "the equivalent of a procedure which 'develops' SPS measures"—since the 16 measures at issue "were adopted *following* and as a result of the IRA process".[662] Australia states that the Panel correctly found that the object of New Zealand's challenge under Annex C(1)(a) and Article 8 was the "unjustifiably delayed development and adoption of the [16] SPS measures at issue"[663], and that the development of the 16 measures at issue "was conceptually distinct"[664] from the SPS measures themselves. Consequently, Australia concludes, the 16 measures at issue do not correspond either to the "procedure", or to the "SPS measures" referred to in the chapeau of Annex C(1)(a).[665]

431. Australia submits, in any event, that the Appellate Body should not complete the legal analysis given the "absence of any relevant factual findings made by the Panel" on this matter.[666] In particular, New Zealand's argument that there was no explanation or justification for this delay was refuted in Australia's first written submission. As for New Zealand's reliance upon certain statements from the domestic review of Australia's quarantine system, Australia notes that it explained to the Panel the context in which these statements were made.[667]

432. We turn, accordingly, to examine these provisions. Article 8 of the *SPS Agreement* states:

> Members shall observe the provisions of Annex C in the operation of control, inspection and approval procedures, including national systems for approving the use of additives or for establishing tolerances for contaminants in foods, beverages or feedstuffs, and otherwise ensure that their procedures are not inconsistent with the provisions of this Agreement.

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[661]New Zealand's other appellant's submission, para. 28. See New Zealand's second written submission to the Panel, para. 2.935 (quoting *One Biosecurity: A Working Partnership, the Independent Review of Australia's Quarantine and Biosecurity Arrangements, Report to the Australia Government*, 30 September 2008, p. 100).

[662]Australia's appellee's submission, paras. 16 and 18. (original emphasis)

[663]Australia's appellee's submission, para. 12 (quoting Panel Report, para. 7.1459).

[664]Australia's appellee's submission, para. 13.

[665]Australia's appellee's submission, para. 19.

[666]Australia's appellee's submission, para. 20.

[667]Australia's appellee's submission, para. 20 (referring to Australia's response to Panel Question 127 after the second Panel meeting).

433. Annex C(1)(a) to the *SPS Agreement* provides, in relevant part:

> ANNEX C
>
> CONTROL, INSPECTION AND APPROVAL PROCEDURES[7]
>
> 1. Members shall ensure, with respect to any procedure to check and ensure the fulfilment of sanitary or phytosanitary measures, that:
>
> (a) such procedures are undertaken and completed without undue delay and in no less favourable manner for imported products than for like domestic products;
>
> [7] Control, inspection and approval procedures include, *inter alia*, procedures for sampling, testing and certification.

434. Article 8 of the *SPS Agreement* establishes an obligation to comply with the provisions contained in Annex C regarding "the operation of control, inspection and approval procedures". Annex C to the *SPS Agreement*, thus, gives meaning and content to Article 8, and, by the terms of that Article, a violation of the obligations in Annex C will also entail a violation of Article 8.[668]

435. Many provisions of the *SPS Agreement*, such as Articles 2 and 5.1, focus directly on SPS measures, as such. In contrast, the obligations of Annex C(1) and Article 8 are expressed as relating to *procedures*. The text of Annex C(1) identifies the types of procedures in respect of which the obligations contained in subparagraphs (a) through (i) apply, namely, "any procedure to check and ensure the fulfilment of sanitary or phytosanitary measures".[669] Paragraph 1 of Annex C thus establishes that there must be a link between the relevant "procedures" and "sanitary or phytosanitary measures". The title to Annex C and the text of Article 8 shed further light on the types of procedures that are subject to the various obligations set out in subparagraphs (a) through (i), by referring to *control*, *inspection*, and *approval procedures*. Moreover, footnote 7 to the title of Annex C, as well as Article 8, provide specific examples of such procedures. Footnote 7 mentions "procedures for

[668] Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1569; Panel Report, *US – Poultry (China)*, paras. 7.393-7.395.

[669] These obligations contained in Annex C(1) are: (a) that procedures be undertaken and completed without undue delay and in a no less favourable manner than for like domestic products; (b) that processing of applications be prompt and that processing periods be published; (c) that requests for information be limited to what is necessary; (d) that confidentiality of information be treated in a no less favourable manner than for domestic products; (e) that requirements for control, inspection, and approval of individual specimens of a product be limited to what is reasonable and necessary; (f) that fees associated with the procedures be equitable in relation to fees charged on domestic products and be not higher than the actual cost of the service; (g) that the same criteria be used in the siting of facilities used in the procedures and the selection of samples of imported products as for domestic products; (h) that for products modified subsequent to control and inspection, the procedure be limited to what is necessary to determine whether there is adequate confidence that the product still meets the regulations concerned; and (i) that a procedure exist to review complaints concerning the operation of such procedures and to take corrective action when a complaint is justified.

sampling, testing and certification", and Article 8 refers to "national systems for approving the use of additives or for establishing tolerances for contaminants in foods, beverages or feedstuffs".

436. Furthermore, Article 8 refers to "the *operation of* control, inspection and approval procedures", and subparagraph (a) of Annex C(1) requires relevant procedures to be *undertaken* and *completed* without undue delay. Since the procedures referred to in Annex C(1) are those that check and ensure fulfilment of SPS measures, this suggests that such measures exist *prior to* the operation, undertaking, or completion of, the relevant procedures, as the latter seek to check and ensure fulfilment with the former. As explained further below, the particular circumstances of this case make it unnecessary for us to identify more comprehensively the "SPS measures" and the "procedures" in respect of which the obligations set out in Annex C(1) and Article 8 apply.[670]

437. Annex C(1)(a) contains an obligation that relevant procedures be undertaken and completed "without undue delay". In this regard, the ordinary meaning of the word "delay" relates to "(a period of) time lost by inaction or inability to proceed".[671] The term "undue" means something "that ought not to be or to be done, inappropriate, unsuitable, improper, unrightful, unjustifiable" or "going beyond what is warranted or natural; excessive, disproportionate".[672] Thus, Annex C(1)(a) requires Members to ensure that relevant procedures are undertaken and completed with appropriate dispatch, that is, that they do not involve periods of time that are unwarranted, or otherwise excessive, disproportionate or unjustifiable.[673] Whether a relevant procedure has been unduly delayed is, therefore, not an assessment that can be done in the abstract, but one which requires a case-by-case

[670]We observe, in this regard, that the Panel considered that "the 'SPS measure' referenced in the language of Annex C(1)(a) may be a requirement to conduct an import risk assessment prior to allowing for the importation of goods that might pose sanitary or phytosanitary risks" and that, in such circumstances, "the actual import risk assessment conducted for a specific good might constitute the procedure to check and ensure the fulfilment of this 'SPS measure'." (Panel Report, para. 7.1463) Thus, reasoned the Panel, "if unduly delayed, an SPS approval procedure like the IRA process might infringe Annex C(1)(a) of the SPS Agreement". (*Ibid*., para. 7.1465 (referring to Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1336)) The Panel did not, in its analysis, specifically identify the relevant "SPS measure" with which the IRA process "check[ed] and ensur[ed] approval", although it did summarize the arguments of the parties, made on the assumption that the IRA process (the relevant procedure) checked and ensured the fulfilment of Australia's quarantine regime relating to the importation of fresh fruit and vegetables (the relevant SPS measure). (*Ibid*., paras. 7.1431 and 7.1436) Due to the manner in which New Zealand presented its claims and identified the measures at issue, it is unnecessary for us to decide whether the IRA process and Australia's quarantine regime could constitute an "approval procedure" and an "SPS measure", respectively, within the meaning of Annex C(1). Accordingly, we neither endorse, nor reject, the approach that the Panel seems to have been inclined to accept.

[671]*Shorter Oxford English Dictionary*, 6th edn, A. Stevenson (ed.) (Oxford University Press, 2007), Vol. 1, p. 635.

[672]*Shorter Oxford English Dictionary*, 6th edn, A. Stevenson (ed.) (Oxford University Press, 2007), Vol. 2, p. 3431.

[673]Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1495. That panel appears to have adopted a similar interpretation of "without undue delay" by stating that the obligation in Annex C(1)(a) dictates that "approval procedures be undertaken and completed *with no unjustifiable loss of time*". (emphasis added)

analysis as to the reasons for the alleged failure to act with appropriate dispatch, and whether such reasons are justifiable.

438. New Zealand's claims, in this case, raise the issue of *what measures* may violate the obligation, set out in Annex C(1)(a) and Article 8, to undertake and complete relevant procedures without undue delay. As we have seen, the obligation in Annex C(1)(a) requires Members to commence, and to complete, specific *procedures* without undue delay. Thus, procedures are the direct target of the relevant obligation and those procedures may themselves be the measure in violation of that obligation. Yet, it does not follow that other types of measures are precluded, *a priori*, from being an appropriate target of a claim of inconsistency with Annex C(1)(a) and Article 8. In our view, the obligation to ensure that relevant procedures are undertaken and completed without undue delay may be infringed through measures other than the control, inspection, and approval procedures themselves, such as actions that prohibit, prevent, or impede undertaking and completing such procedures "without undue delay", or omissions in the form of a failure to act "without undue delay".[674] Such measures, even when they are not, themselves, procedures, could equally give rise to a violation of Annex C(1)(a) and Article 8.

439. Accordingly, the question before us is whether the 16 measures, both as a whole and individually, are inconsistent with the obligation in Annex C(1)(a) and Article 8 of the *SPS Agreement*. The 16 measures at issue constitute specific requirements that New Zealand must satisfy when exporting apples to the Australian market. All 16 measures possess a substantive content and specify actions that New Zealand apple producers, exporters, and authorities must undertake and comply with so that apples can be imported into Australia. However, it seems to us that, for purposes of its claims under Annex C(1)(a) and Article 8, New Zealand does not challenge the substantive content of the 16 measures at issue but, rather, the development of such measures. Yet the measures themselves do not identify or specify the process leading to their adoption, or any steps in that process. We do not see how, as New Zealand suggests, a simple reference to the 16 measures at issue, in and of itself, can be read as a reference to the development of such measures.

[674]We note that, in previous disputes involving claims under Annex C(1)(a) and Article 8, panels have been faced with measures other than *procedures*. In *EC – Approval and Marketing of Biotech Products*, the panel dealt with a general *de facto* moratorium consisting of the suspension of consideration of applications for approval, and a failure to consider specific applications for approval. (Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.47) In *US – Poultry (China)*, the measure at issue was a legislative provision prohibiting any use of funds to allow for the importation of poultry products from China that, thereby, impeded the undertaking and completion of a procedure that was "a prerequisite for the importation of [poultry] products". (Panel Report, *US – Poultry (China)*, paras. 7.92 and 7.152)

440. New Zealand also argues that "there is no requirement ... that for every obligation, the measure at issue must necessarily directly cause the violation".[675] We consider that the issue of whether the measure at issue can "indirectly" cause the violation of an obligation requires a case-specific examination of the relevant obligation, as well as of whether the elements of the measure at issue, or its effects, are capable of violating the obligation invoked. As we have already explained, we believe that the measures that may violate the obligation in Annex C(1)(a) and Article 8 include relevant "approval, control and inspection procedures", governmental actions that impede or prevent the undertaking or completion of such procedures, as well as failures to undertake or complete such procedures with appropriate dispatch. New Zealand has not argued that the 16 measures at issue are any such type of measure and has not provided any other arguments in support of its assertion that these 16 measures, individually or as a whole, "directly" or "indirectly" violate the "without undue delay" obligation in Annex C(1)(a) and Article 8. Consequently, we do not see how the 16 measures alone "directly" or "indirectly" are inconsistent with Annex C(1)(a) and Article 8. Nor are we convinced that the links between the 16 measures at issue and the process through which they were developed implies, as New Zealand contends, that the process forms part of the 16 relevant measures.

441. We recognize that, in ordinary circumstances, eight years is a very long period of time to complete a risk assessment. We also agree with the panel in *EC – Approval and Marketing of Biotech Products* that "a lengthy delay for which no adequate explanation is provided might in some circumstances permit the inference that the delay is 'undue'".[676] Yet, while the evidence to which New Zealand points bears on the question of whether the "IRA process" was unduly delayed, such "IRA process" is not a measure at issue in this dispute. This evidence, therefore, does not establish that the 16 measures at issue have not been undertaken or completed without undue delay, or that they prevented or impeded the undertaking or completion of other relevant procedures without undue delay.

442. In the light of the above, we *find* that New Zealand has not established that the 16 measures at issue are inconsistent with Australia's obligation under Annex C(1)(a) and Article 8 to undertake and complete procedures that check and ensure fulfilment with SPS measures "without undue delay".

C. *Conclusion*

443. For all of the above reasons, we *reverse* the Panel's finding in paragraphs 7.1477 and 8.1(f) of the Panel Report that New Zealand's claim under Annex C(1)(a) and its consequential claim under Article 8 of the *SPS Agreement* fall outside of the Panel's terms of reference; but *find* that

[675]New Zealand's other appellant's submission, para. 11.
[676]Panel Report, *EC – Approval and Marketing of Biotech Products*, para. 7.1496.

New Zealand has not established that the 16 measures at issue are inconsistent with Annex C(1)(a) and Article 8 of the *SPS Agreement*.

X. Findings and Conclusions

444. For the reasons set out in this Report, the Appellate Body:

(a) upholds the Panel's finding, in paragraphs 7.172 and 8.1(b) of the Panel Report, that the 16 measures at issue, both as a whole and individually, constitute SPS measures within the meaning of Annex A(1) to the *SPS Agreement*;

(b) upholds the Panel's finding, in paragraphs 7.906 and 8.1(c) of the Panel Report, that Australia's measures regarding fire blight and ALCM, as well as the general measures relating to these pests, are inconsistent with Articles 5.1 and 5.2 of the *SPS Agreement*, and that, by implication, these measures are also inconsistent with Article 2.2 of the *SPS Agreement*;

(c) finds that Australia has not established that the Panel acted inconsistently with its duty to conduct an objective assessment of the matter before it, within the meaning of Article 11 of the DSU;

(d) reverses the Panel's finding, in paragraphs 7.1403 and 8.1(e) of the Panel Report, that Australia's measures at issue regarding fire blight and ALCM are inconsistent with Article 5.6 of the *SPS Agreement*; but is unable to complete the legal analysis of New Zealand's claim under that provision; and

(e) reverses the Panel's finding, in paragraphs 7.1477 and 8.1(f) of the Panel Report, that New Zealand's claim under Annex C(1)(a) and its consequential claim under Article 8 of the *SPS Agreement* fall outside the Panel's terms of reference; but finds that New Zealand has not established that the 16 measures at issue are inconsistent with Annex C(1)(a) and Article 8 of the *SPS Agreement*.

445. The Appellate Body recommends that the DSB request Australia to bring its measures, found in this Report and in the Panel Report as modified by this Report, to be inconsistent with the *SPS Agreement*, into conformity with its obligations under that Agreement.

Signed in the original in Geneva this 12th day of November 2010 by:

Yuejiao Zhang
Presiding Member

Jennifer Hillman
Member

Shotaro Oshima
Member

ANNEX I(a)

WORLD TRADE ORGANIZATION

WT/DS367/13
3 September 2010

(10-4561)

Original: English

AUSTRALIA – MEASURES AFFECTING THE IMPORTATION OF APPLES FROM NEW ZEALAND

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 (DSU), and under Rule 20(1) of the *Working Procedures for Appellate Review*

The following notification, dated 31 August 2010, from the Delegation of Australia, is being circulated to Members.

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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 I(b)

WORLD TRADE ORGANIZATION

WT/DS367/13/Corr.1
27 September 2010

(10-4894)

Original: English

AUSTRALIA – MEASURES AFFECTING THE IMPORTATION OF APPLES FROM NEW ZEALAND

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 (DSU), and under Rule 20(1) of the *Working Procedures for Appellate Review*

Corrigendum

By letter of 16 September 2010, Australia requested authorization from the Appellate Body, pursuant to Rule 18(5) of the *Working Procedures for Appellate Review*, to amend its Notice of Appeal dated 31 August 2010. No objections to Australia's request were received from New Zealand, the third parties or the third participants. On 23 September 2010, the Division hearing the appeal authorized Australia to amend its Notice of Appeal.

Consequently, the reference to "[8.1](d)" in the first line of paragraph 2(d) should read "[8.1](e)".

ANNEX II

WORLD TRADE ORGANIZATION

WT/DS367/14
15 September 2010

(10-4653)

Original: English

AUSTRALIA – MEASURES AFFECTING THE IMPORTATION OF APPLES FROM NEW ZEALAND

Notification of an Other Appeal by New Zealand
under Article 16.4 and Article 17 of the Understanding on Rules
and Procedures Governing the Settlement of Disputes (DSU),
and under Rule 23(1) of the *Working Procedures for Appellate Review*

The following notification, dated 13 September 2010, from the Delegation of New Zealand, is being circulated to Members.

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1. Pursuant to paragraph 4 of Article 16 and Article 17 of the *Understanding on Rules and Procedures Governing the Settlement of Disputes* ("DSU") and Rule 23(1) of the *Working Procedures for Appellate Review*, New Zealand hereby notifies its decision to appeal to the Appellate Body certain issues of law covered in the Panel Report in *Australia – Measures Affecting the Importation of Apples from New Zealand* (WT/DS367/R) ("Panel Report") and certain legal interpretations developed by the Panel.

2. New Zealand seeks review by the Appellate Body of the Panel's legal conclusion that New Zealand's claim under Annex C(1)(a) and its consequential claim under Article 8 of the *Agreement on the Application of Sanitary and Phytosanitary Measures* ("*SPS Agreement*") are outside of the Panel's terms of reference.[1] This conclusion is in error and is based on an erroneous interpretation and application of Annex C(1)(a) of the *SPS Agreement* and Article 6.2 of the DSU.[2]

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[1]Panel Report, para. 8.1(f).
[2]Panel Report, paras. 7.1443 to 7.1490.

ANNEX III

ORGANISATION MONDIALE DU COMMERCE **ORGANIZACIÓN MUNDIAL DEL COMERCIO**

WORLD TRADE ORGANIZATION

APPELLATE BODY

Australia – Measures Affecting the Importation of Apples from New Zealand

AB-2010-2

Procedural Ruling

1. On 1 September 2010, the Appellate Body Division hearing this appeal received a joint request from Australia and New Zealand to allow observation by the public of the oral hearing in the above appellate proceedings. The participants argued that nothing in the *Understanding on Rules and Procedures Governing the Settlement of Disputes* (the "DSU") or the *Working Procedures for Appellate Review* (the "*Working Procedures*") precludes the Appellate Body from authorizing public observation of the oral hearing. The participants also relied on the rulings by the Appellate Body in five previous proceedings authorizing public observation of the oral hearing.[1]

2. Australia and New Zealand consider that public observation of the oral hearings in past appellate proceedings has strengthened the credibility and legitimacy of the WTO dispute settlement system, and that there should be continuation of this practice in circumstances where the participants in the appeal so agree. They also maintain that public observation has operated smoothly, and that the rights of third participants who did not want their oral statements to be subject to public observations have been fully protected. Australia and New Zealand also indicated that their request was being made on the understanding that any information that was designated as confidential in the documents filed in the Panel proceedings would be adequately protected in the course of the hearing. Australia and New Zealand considered that their proposed modality for the observation of the hearing by the public, which accords with past practice of the Appellate Body, would allow for the protection of information designated as confidential.

3. On 2 September 2010, we invited the third participants to comment in writing on the request of the participants. We received comments on 7 September 2010 from the European Union, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, and the United States. These third participants expressed their support for the request of the participants. Chile, Japan, and Pakistan did not submit comments on the request.

[1]These proceedings are: *United States – Continued Suspension of Obligations in the EC – Hormones Dispute* (WT/DS320/AB/R) and *Canada – Continued Suspension of Obligations in the EC – Hormones Dispute* (WT/DS321/AB/R); *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Second Recourse to Article 21.5 of the DSU by Ecuador* (WT/DS27/AB/RW2/ECU) and *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Article 21.5 of the DSU by the United States* (WT/DS27/AB/RW/USA); *United States – Continued Existence and Application of Zeroing Methodology* (WT/DS350/AB/R); *United States – Laws, Regulations and Methodology for Calculating Dumping Margins ("Zeroing") – Recourse to Article 21.5 of the DSU by the European Communities* (WT/DS294/AB/RW); and *United States – Measures Relating to Zeroing and Sunset Reviews – Recourse to Article 21.5 of the DSU by Japan* (WT/DS322/AB/RW).

4. We recall that requests to allow public observation of the oral hearing have been made, and have been authorized, in five previous appeals.[2] In its rulings, the Appellate Body has held that it has the power to authorize such requests by the participants, provided that this does not affect the confidentiality in the relationship between the third participants and the Appellate Body, or impair the integrity of the appellate process. The Appellate Body has reasoned that:

(a) The confidentiality rule in the first sentence of Article 17.10 of the DSU must be read in the light of its context, particularly Article 18.2 of the DSU, which does not preclude a participant from foregoing confidentiality and, instead, disclosing statements of its own positions to the public. The third sentence of Article 18.2 states that "Members shall treat as confidential information submitted by another Member to the panel or the Appellate Body which that Member has designated as confidential." This provision would be redundant if Article 17.10 were interpreted to require absolute confidentiality in respect of all elements of appellate proceedings, and thus suggests that the confidentiality rule in Article 17.10 has limits.

(b) The confidentiality requirement in Article 17.10 operates in a relational manner. Different sets of relationships are implicated in appellate proceedings, including: (i) a relationship between the participants and the Appellate Body; and (ii) a relationship between the third participants and the Appellate Body. The requirement that the proceedings of the Appellate Body be confidential affords protection to these separate relationships and is intended to safeguard the interests of the participants and third participants, as well as the adjudicative function of the Appellate Body, so as to foster the system of dispute settlement under conditions of fairness, impartiality, independence and integrity. When participants request to forego confidentiality protection for their communications with the Appellate Body at the oral hearing, the right to confidentiality of third participants vis-à-vis the Appellate Body is not implicated, because such request does not extend to any communications, nor touch upon the relationship, between the third participants and the Appellate Body.

(c) Pursuant to Rule 27 of the *Working Procedures*, the Appellate Body has the power to exercise control over the conduct of the oral hearing, including authorizing the lifting of confidentiality at the request of the participants provided that this does not adversely affect the rights and interests of the third participants or the integrity of the appellate process. The active participation of third participants in oral hearings has been fostered in the *Working Procedures* and in practice; yet the rights of third participants are distinct from those of the participants in an appellate proceeding.

(d) Although certain elements of confidentiality are incapable of derogation[3], the confidentiality of statements by participants at an oral hearing in an appeal is not of such a nature.

5. We note that public observation in previous cases operated smoothly, and that the rights of third participants who did not wish to have their oral statements made subject to public observation have been fully protected.

6. In this appeal, Australia and New Zealand have suggested that the Appellate Body allow observation by the public of the oral hearing by means of simultaneous closed-circuit television

[2]See *supra*, footnote 1.

[3]For example, derogation from the situation contemplated in the second sentence of Article 17.10, which provides that "[t]he reports of the Appellate Body shall be drafted without the presence of the parties to the dispute and in the light of the information provided and the statements made", would impair the exercise, integrity and independence of the Appellate Body's adjudicative function.

broadcasting. They have further suggested that provision be made for transmission to be turned off should the participants find it necessary to discuss issues that involve information that was designated as confidential by either participant in the documents filed with the Panel. We agree that such modalities would operate to protect confidential information in the context of a hearing that is open to public observation, and would not have an adverse impact on the integrity of the adjudicative function performed by the Appellate Body.

7. For these reasons, the Appellate Body Division hearing this appeal authorizes the public observation of the oral hearing in these proceedings on the terms set out below. Accordingly, pursuant to Rule 16(1) of the *Working Procedures*, we adopt the following additional procedures for the purpose of this appeal:

(a) The oral hearing will be open to public observation by means of simultaneous closed-circuit television broadcast, shown in a separate room to which duly registered delegates of WTO Members and members of the general public will have access.

(b) Oral statements and responses to questions by the third participants that have indicated their wish to maintain the confidentiality of their submissions, as well as any discussion of information that the participants designated as confidential in documents submitted to the Panel, will not be subject to public observation.

(c) Any request by a third participant wishing to maintain the confidentiality of its oral statements and responses to questions should be received by the Appellate Body Secretariat no later than 12:30 p.m. Geneva time on Thursday, 7 October 2010.

(d) An appropriate number of seats will be reserved for delegates of WTO Members in the room where the closed-circuit television broadcast will be shown. WTO delegates wishing to observe the oral hearing are requested to register in advance with the Appellate Body Secretariat.

(e) Notice of the oral hearing will be provided to the general public on the WTO website. Members of the general public wishing to observe the oral hearing will be required to register in advance with the Appellate Body Secretariat, in accordance with the instructions set out in the WTO website notice.

Geneva, 14 September 2010