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AUSTRALIA – MEASURES AFFECTING IMPORTATION OF SALMON - RECOURSE TO ARTICLE 21.5 BY CANADA -

REPORT OF THE PANEL

The report of the Panel on Australia – Measures Affecting Importation of Salmon - Recourse to Article 21.5 by Canada - is being circulated to all Members, pursuant to the DSU. The report is being circulated as an unrestricted document from 18 February 2000 pursuant to the Procedures for the Circulation and Derestriction of WTO Documents (WT/L/160/Rev.1). Members are reminded that in accordance with the DSU only parties to the dispute may appeal a panel report. An appeal shall be limited to issues of law covered in the Panel report and legal interpretations developed by the Panel. There shall be no *ex parte* communications with the Panel or Appellate Body concerning matters under consideration by the Panel or Appellate Body.

TABLE OF CONTENTS

I. INTRODUCTION

1.1 On 6 November 1998, the Dispute Settlement Body (DSB) adopted the Appellate Body report on *Australia – Measures Affecting Importation of Salmon* (WT/DS18/AB/R) and the panel report (WT/DS18/R), as modified by the Appellate Body report, requesting that Australia bring its measures into conformity with the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). On 23 February 1999, the Arbitrator, appointed in accordance with Article 21.3(c) of the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU), decided that the reasonable period of time to implement the rulings and recommendations of the DSB in this case would expire on 6 July 1999.

1.2 On 15 July 1999, Canada announced its intention to request authorization from the DSB to suspend the application to Australia of tariff concessions and related obligations under the General Agreement on Tariffs and Trade 1994, pursuant to Article 22.2 of the DSU (WT/DS18/12).

1.3 At the meeting of the DSB held on 27 and 28 July 1999, Australia informed the DSB that it had fully implemented the DSB's recommendations through an Australian Quarantine and Inspection Service (AQIS) decision of 19 July 1999. At the same meeting, Canada requested the establishment of a panel pursuant to Article 21.5 of the DSU. The DSB agreed that the Article 21.5 request be referred to the original Panel. The DSB also agreed, at the request of Australia, that the matter would be referred to arbitration to determine the level of suspension of concessions, pursuant to Article 22.6 of the DSU. Canada and Australia agreed that the arbitration proceedings would be held in abeyance until after the circulation of the panel report under Article 21.5. If the Article 21.5 Panel found that Australia had acted inconsistently with its WTO obligations, then Australia and Canada would request the immediate resumption of the Article 22.6 arbitration, regardless of whether either party appealed the Article 21.5 panel report.

1.4 The European Communities, Norway and the United States reserved their third-party rights in the 21.5 panel proceedings.

A. TERMS OF REFERENCE

1.5 The following standard terms of reference applied to the work of the Panel:

> "To examine, in the light of the relevant provisions of the covered agreements cited by Canada in document WT/DS18/14, the matter referred to the DSB by Canada in that document and to make such findings as will assist the DSB in making the recommendations or in giving the rulings provided for in those agreements".

B. PANEL COMPOSITION

1.6 The Panel was composed as follows:

Chairman: Mr. Michael Cartland

Members: Mr. Kari Bergholm
Ms. Claudia Orozco

1.7 The Panel met with the parties, the third parties and the experts advising the Panel on 8-10 December 1999. The Panel submitted its report to the parties on 31 January 2000.

II. FACTUAL ASPECTS

A. GENERAL

1. Salmon

2.1 The product subject to the dispute is, as in the original case, fresh chilled and frozen salmon product, from Canada, destined for human consumption. Fresh chilled and frozen salmon comes within Codes 0302 to 0304 of the Harmonized System of tariff classification. Hereafter this product is referred to as "fresh chilled or frozen salmon".[1]

2.2 In Canada, there are five sources of uncooked salmon for export[2]:

(i) adult, wild, ocean-caught Pacific salmon;

(ii) adult, wild, freshwater-caught Pacific salmon;

(iii) adult, Pacific salmon cultured in seawater on the Pacific coast;

(iv) adult, Atlantic salmon cultured in seawater on the Pacific coast; and

(v) adult, Atlantic salmon cultured in seawater on the Atlantic coast.

2. Diseases of salmon

2.3 Australia has imposed restrictions on the importation of fresh chilled and frozen salmon from Canada since 1975, on the basis that importation of Canadian salmon could result in the introduction of exotic disease agents into Australia, with negative consequences for the health of fish in Australia. In the original dispute, Australia identified 24 disease agents of concern associated with the importation of Canadian salmon. On the basis of the 1999 Import Risk Analysis on Non-Viable Salmonids and Non-Salmonid Marine Finfish[3] (hereafter the 1999 IRA), Australia identified six disease agents associated with Canadian salmon as requiring risk management measures in addition to evisceration (see paragraph 2.17)

2.4 With respect to international trade in fish, the OIE identifies three of the diseases of concern to Australia as "notifiable diseases" (infectious haematopoietic necrosis (IHN), viral haemorrhagic septicaemia (VHS), and *oncorhynchus masou* virus), and five others as "significant diseases" (bacterial kidney disease (BKD) or *Renibacterium salmoninarum (R. salmoninarum);* infectious pancreatic necrosis (IPN); infectious salmon anaemia (ISA); *Gyrodactylus salaris* and piscirickettsiosis (*Piscirickettsia salmonis*)). To avoid the introduction of these disease agents with the importation of fresh chilled or frozen fish, the OIE recommends that fish be eviscerated before importation.[4]

2.5 The disease agents at issue in this dispute are not of concern from a human health perspective.

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[1] The importation of live salmonids is not at issue.

[2] Only adult salmon are harvested for export.

[3] Import Risk Analysis on Non-Viable Salmonids and Non-Salmonid Marine Finfish, Australian Quarantine and Inspection Service, July 1999 ("1999 IRA"). When referring to the "1999 IRA" in this report, we mean the version that was submitted by Australia as Exhibit A to its first submission. We note that a later and final version was published in book form on 12 November 1999. At the request of the Panel, copies of the 12 November version were submitted to the Panel at our meeting with the parties on 10 December 1999.

[4] OIE International Aquatic Animal Health Code; OIE Code (1997).

B. THE 1999 IMPORT RISK ANALYSES

2.6 Following the conclusions of the original dispute, AQIS undertook further import risk analyses with respect to fresh chilled and frozen salmon for human consumption ("non-viable salmonids"), other non-viable marine finfish, and, separately, live ornamental fish. Drafts of the various chapters of the 1999 IRA were published electronically and updated regularly on the AQIS home page. The complete 1999 IRA was published in July 1999, and version published in book form (also dated July 1999) was issued on 12 November 1999.

2.7 The 1999 IRA considers the animal health risks potentially associated with the importation into Australia of non viable salmonids and other marine finfish from any country. It is a generic import risk analysis, addressing all potential relevant pests and diseases, for all members of the family *Salmonidae*, as well as Ayu or sweetfish, and all other finfish species caught in marine or brackish waters.

2.8 The 1999 IRA drew on information contained in the previous salmon import risk analyses conducted by Australia[5], as well as on the New Zealand salmon risk analyses of 1994-97.

2.9 The base products considered in the 1999 IRA are eviscerated salmonids and whole, not eviscerated (round) non-salmonid marine finfish. Whole, eviscerated salmonids are sold for human consumption; non-viable, not eviscerated non-salmonid marine finfish may be used for human consumption, as feed for fish, as fishing bait or for further processing (e.g. for pet food).

2.10 The 1999 IRA first identifies the disease agents of concern requiring further consideration. A disease agent is given specific consideration in the 1999 IRA if it is infectious, **and** either exotic to Australia or present in Australia but subject to official control, **and** if the disease agent is OIE-listed or would be expected to cause significant harm in Australia. On the basis of these criteria, the disease agents of concern are categorized into those whose consideration is of higher priority or lower priority.

2.11 For each of the 15 "higher priority" diseases (called Group 1 diseases), the 1999 IRA identifies the factors affecting the probability of a disease agent entering and becoming established in Australia – also called the release and exposure assessments. The factors enumerated in this respect are:

(a) The probability of the disease agent being present in the source country/region of the commodity, and if present, its prevalence. The 1999 IRA states that in examining the available data, account was taken of the extent of surveillance and monitoring by competent authorities in the exporting countries.

(b) The probability of the disease agent being present in an infective form in the commodity on entering Australia. This includes consideration of lifecycle stages (for example, the higher prevalence of disease agents in juvenile and/or sexually mature fish); the origin of the fish (i.e. wild vs. farmed); local dispersal of some disease agents, and time of the year, as well as of inspection and grading of fish. Washing, cold storage or other handling procedures may reduce some risks. Also relevant in this regard is the probability of a disease agent being present in the particular tissues imported, including the blood, skin, etc.

[5] Draft Import Risk Analysis – Disease risks associated with the importation of uncooked, wild, ocean-caught Pacific salmon product from the USA and Canada, Australian Quarantine and Inspection Service, May 1995, (the "1995 Draft Report") and the Australian Salmon Import Risk Analysis, Australian Quarantine and Inspection Service, Australian Department of Primary Industries and Energy, December 1996, (the "1996 Final Report").

(c) The probability of the disease agent in an infective form entering the aquatic environment of Australia. This depends on the processing, end-use and disposal of the commodity and the capacity of the disease agent to persist, in an infective form, in the commodity after processing, use or disposal. The 1999 IRA details the possible pathways which might be followed by a product imported for human consumption eventually reaching the aquatic environment. With regard to salmon for human consumption, the 1999 IRA identifies as of greatest concern the risks associated with disposal of wastes from the further commercial processing of salmon within Australia.

(d) The probability of the disease agent, having entered the aquatic environment, establishing infection in susceptible hosts. This depends on the capacity of the disease agent to survive in the aquatic environment, in an infective form, and the ease of infection of susceptible hosts and subsequent transmission of infection to others within a population.

The 1999 IRA describes the probability of an event occurring as:

high:	event would be expected to occur
moderate:	less than an even chance of the event occurring
low:	event would be unlikely to occur
very low:	event would occur rarely
extremely low:	event would occur very rarely
negligible:	chance of event occurring is so small that it can be ignored in practical terms.

The 1999 IRA notes that these categories are not equidistant from each other, and that most fall into the range of being greater than zero but less than 50 per cent.

2.12 The 1999 IRA subsequently identifies the biological and consequential effects of the establishment of a new disease agent on the affected fishery industry and on the environment. In considering the "consequence assessment", the 1999 IRA indicates that the effects of a disease can generally be ameliorated by the adoption of methods for control or eradication, but that these measures have associated costs which must also be taken into consideration. The 1999 IRA notes that the biological effect of the establishment of disease is normally evaluated in terms of morbidity and mortality rates, and the costs associated with controlling or eradicating the disease. The economic effect of the establishment of disease is normally evaluated in terms of the costs arising from the biological effects and the commercial implications for domestic and international marketing of affected animals and products. The establishment of disease may also affect the environment in ways which are not easily evaluated in economic terms.

2.13 The key factors used in the 1999 IRA to classify the significance of the establishment of a disease are:

(a) the biological effects on aquatic species;

(b) the availability, cost and effectiveness of methods for control or eradication;

(c) the economic effects at the enterprise, industry or national level, including the effects on the marketing of the product; and

(d) the effects on native species and the environment, including any loss of social amenity.

The level of significance of the establishment of a disease is categorized as:

catastrophic:	significant economic harm at the national level or serious, irreversible harm to the environment
high:	high mortality or morbidity rates for a prolonged period, not amenable to control, with significant economic harm at the industry level or serious harm to the environment
moderate:	significant economic harm at enterprise or regional level; diseases may be amenable to control or of temporary effects
low:	mild biological consequences, amenable to control; economic harm limited to enterprise or regional level; minor or temporary environmental effects
negligible:	no significant biological consequences or transient.

2.14 The 1999 IRA presents the release and exposure assessments, and the consequence assessments, in a risk evaluation matrix. According to the 1999 IRA, initially the risk is determined on the basis of no risk management, that is, the unrestricted estimate of risk. The 1999 IRA states that seven of the 15 "higher priority" diseases represent risks that are not acceptable to Australia without the application of further risk management measures, that is, measures in addition to evisceration. For these seven diseases, the 1999 IRA identifies various risk management measures which it considers could reduce the risk to the level considered appropriate.

2.15 After this consideration of the "higher priority" diseases (called the Group 1 diseases), the 1999 IRA reviews the "lower priority" diseases (called the Group 2 diseases). The 1999 IRA concludes that with the implementation of measures required for Group 1 diseases, the risks associated with the Group 2 diseases will also meet Australia's appropriate level of protection and that no additional measures are required to address risk related to Group 2 diseases.

2.16 The 1999 IRA also indicates that as the seven diseases of concern are either not reported in New Zealand or (for whirling disease) occur at extremely low prevalence in New Zealand Pacific salmon, the selected measures will not apply to Pacific salmon from New Zealand.

2.17 The 1999 IRA concludes that there are seven disease agents requiring risk management measures beyond evisceration:

Infectious haematopoietic necrosis virus (IHNV);
Infectious salmon anaemia virus (ISAV) (for Atlantic salmon);
Aeromonas salmonicida (not for wild, ocean-caught Pacific salmon);
Renibacterium salmoninarum;
Infectious pancreatic necrosis virus (IPNV) (for juvenile salmonids only);
Yersinia ruckeri (for juvenile salmonids only); and
Myxobolus cerebralis (whirling disease) (for rainbow trout and all juvenile salmonids).

The seventh disease agent, whirling disease, is not known to occur in Canada and is thus not at issue here. The further measures imposed on imports from Canada are those described below.

C. MEASURES REGARDING IMPORTS OF FRESH CHILLED OR FROZEN SALMON FROM CANADA

2.18 Specific import restrictions on salmonid products were introduced by Quarantine Proclamation No 86A of 21 February 1975. This and all other Quarantine Proclamations were revoked by the Quarantine Proclamation 1998, on 7 July 1998. Section 43 of Quarantine Proclamation 1998 deals with the importation of fish of the *Salmonidae* family. This Section was

subsequently amended in May 1999 and in September 1999.[6] With effect as of 28 September 1999, Section 43 now reads as follows:

> "43 Importation of fish of family Salmonidae or Plecoglossidae
>
> (1) The importation into Australia of fish of the family Salmonidae or Plecoglossidae, or any part of such a fish, in any form (including canned fish, dried fish, processed fish and fish meal) is prohibited.
>
> (2) The importation into Australia of the roe or caviar of fish of the family Salmonidae or Plecoglossidae is prohibited.
>
> (3) However, subsections (1) and (2) are not taken to prohibit the importation of:
>
> (a) canned fish, roe or caviar of fish of those families; or
>
> (b) smoked fish of those families:
>
> (i) accompanied into Australia by the person wishing to import it; and
>
> (ii) in an amount of up to 5 kilograms; and
>
> (iii) produced by a manufacturer approved by a Director of Quarantine; or
>
> (c) salmon oil, for the personal consumption or use of the person wishing to import it, in a quantity of no more than 3 months' supply for that use.
>
> (4) Also, subsections (1) and (2) are not taken to prohibit the importation of products of fish of those families otherwise permitted under item 1, 2 or 5 of table 13.
>
> (5) Also, subsections (1) and (2) are not taken to prohibit the importation by a person of fish, fish parts, roe or caviar of those families if a Director of Quarantine has granted the person a permit to import the fish, fish parts, roe or caviar into Australia."

Quarantine Proclamation 1998 is implemented through various Animal Quarantine Policy Memoranda (AQPM), as described below.

1. Animal Quarantine Policy Memorandum 1999/51 (AQPM 1999/51) Final Reports of Import Risk Analyses on Non-Viable Salmonid Products, Non-Viable Marine Finfish Products and Live Ornamental Finfish and Adoption of New Policies

2.19 AQPM 1999/51, published and effective as of 19 July 1999, contains the outcomes of the risk analyses and the criteria to be used when deciding whether to grant import permits. Policies regarding salmonids as they apply to Canada are detailed in attachment 1 of AQPM 1999/51:

> "Where delegates grant permits, under sub-section 43 of the Quarantine Proclamation 1998, to import non-viable uncanned salmonid finfish, they should apply the following policies:

[6] Quarantine Amendment Proclamation 1999, gazetted on 4 May 1999, and Quarantine Amendment Proclamation 1999 (No.2), gazetted on 28 September 1999, respectively.

- the fish should be eviscerated;
- the fish should not be derived from a population slaughtered as an official disease control measure;
- the fish should not be juvenile salmonids or sexually mature adults/spawners;
- the fish should be processed in premises under the control of a competent authority;
- the head and gills should be removed and internal and external surfaces thoroughly washed;
- the fish should be subjected to an inspection and grading system supervised by a competent authority;
- in addition, for farmed fish, the fish should be derived from a population for which there is a documented system of health monitoring and surveillance administered by a competent authority;
- consignments exported to Australia should be accompanied by official certification confirming that the exported fish fully meet Australia's import conditions (as specified on an import permit issued by AQIS).

In recognition of the health status of New Zealand, salmonids other than rainbow trout would be permitted import under the above policies, except that it would not be required that the head and gills be removed.

Product from countries other than New Zealand derived from non-viable salmonids meeting these policies will be released from quarantine if imported in consumer-ready form. For the purpose of these policies, consumer ready product is product that is ready for the householder to cook/consume, such as cutlets, fillets (without skin), skin-on fillets if less than 450g weight and headless fish of 'pan-size' (i.e. less than 450g weight). Product that has been cooked for human consumption (eg canned, hot smoked, flash fried) is also regarded as consumer-ready product. Imported head-off, gilled and gutted salmonids of greater than 450g weight (i.e. not consumer ready) should be processed to consumer-ready form in premises approved by AQIS before release from quarantine."

2.20 The conditions to be applied to processing plants were outlined in the 1999 IRA. This indicates that AQIS would address applications for approval of premises on a case-by-case basis. Commercial processing would not be permitted in regions where there are economically significant populations of salmonid fish. AQIS would accept discharge of liquid waste into a municipal sewage system, or treatment of waste on site, providing that processing and dilution was judged to be sufficient to reduce risk to an acceptable level. Premises approved for the further processing of imported salmonids would have to be located so as to allow quarantine inspectors and auditors regular access. In addition, AQIS would take into account, *inter alia*, the nature of imported product, the intended processing and the volume and type of waste that would be produced; control of scavengers and pests around the plant; competency of management and availability of competent personnel to supervise quarantine-approved processes; and systems of maintenance for appropriate records of the processing of imported product and waste disposal. Individual plants wishing to process imported product to consumer-ready stage or beyond must enter into a compliance agreement with AQIS. Comments on proposed compliance agreements were solicited on 2 August 1999, and a compliance manual for incorporation into a compliance agreement was finalized and made publicly available on 30 September 1999. To date, AQIS has not received any requests from premises for approval to further process imported head-off, gilled and gutted salmonids to consumer-ready form.

2. Animal Quarantine Policy Memorandum 1999/69 (AQPM 1999/69) Importation of Uncanned Salmonid Product

2.21 AQPM 1999/69, of 20 October 1999, clarifies the conditions announced in AQPM 1999/51 with respect to documentation, recognition of competent authorities, definition of "consumer-ready" product, verification and other requirements. Importers must obtain an import permit from the Director of Animal and Plant Quarantine before beginning importation. The application for an import permit must detail the salmonid species to be imported, the country of export and of origin of the salmonid fish, and the product presentation/form.

2.22 Section 1.4 of AQPM 1999/69 states:

> "Salmonid product imported into Australia will normally be released from quarantine on arrival in Australia, if it is accompanied by the appropriate documentation and is in consumer-ready form.
>
> For the purpose of this policy, consumer ready product is product that is ready for the householder to cook/consume, including:
>
> - cutlets - including central bone and external skin but excluding fins - of less than 450 g in weight;
> - skinless fillets - excluding the belly flap and all bone except the pin bones - of any weight;
> - skin-on fillets – excluding the belly flap and all bone except the pin bones – of less than 450 g in weight;
> - eviscerated, headless "pan-size" fish of less than 450 g in weight; and
> - product that is processed further than the stages described above.
>
> Salmonid product that is not in consumer-ready form (such as head-off, gilled, eviscerated fish of greater than 450 g in weight) must be processed to a consumer-ready stage at an AQIS-approved processing plant before release from quarantine. Information on approved processing plants can be obtained from the Biologicals Unit, AQIS …"

2.23 Section 1.6 of AQPM 1999/69 states: "Equivalent approaches to managing risk may be accepted generally or on a case by case basis. Exporting countries seeking to use alternative risk reduction measures should provide a submission for consideration by AQIS; such proposals should include supporting scientific data that clearly establish equivalence."

2.24 With respect to documentation, Section 2.4 of AQPM 1999/69 indicates:

> "Consignments exported to Australia must be accompanied by an official certificate, in English and, were appropriate, the language of the exporting country, confirming that:
>
> - the fish were derived from a population for which there is a documented system of health surveillance and monitoring administered by the Competent Authority;
> - the fish were not derived from a population slaughtered as an official disease control measure;
> - the fish have been eviscerated;
> - the heads and gills have been removed and internal and external surfaces thoroughly washed;

- the fish are not juvenile salmonids[7] or sexually mature adults/spawners[8];
- the fish were processed in premises approved by and under the control of a Competent Authority;
- the fish were subjected to an inspection and grading system supervised by a Competent Authority;
- for Atlantic salmon: the fish for export to Australia did not come from a farm known or officially suspected of being affected by an outbreak of infectious salmon anaemia (ISA); and
- the product is free from visible lesions associated with infectious disease and fit for human consumption."

D. MEASURES REGARDING IMPORTS OF NON-VIABLE, NON-SALMONID FINFISH

2.25 After 6 July 1999, Australia also adopted a number of measures for imports of non-salmonid finfish. AQPM 1999/51 contains import policies for these fish imports. AQPM 1999/64 lists a series of cases where no import permit is required, which is clarified by AQPM 1999/79.

1. Animal Quarantine Policy Memorandum 1999/51 (AQPM 1999/51) Final Reports of Import Risk Analyses on Non-Viable Salmonid Products, Non-Viable Marine Finfish Products and Live Ornamental Finfish and Adoption of New Policies

2.26 For non-salmonids, AQPM 1999/51 indicates "under transitional arrangements, existing policies for the importation of … non-viable non-salmonid marine finfish product, and live ornamental finfish will continue to apply. AQIS will specify the time-limit for the transitional arrangements after consultation with relevant stakeholders." Attachment 2 describes the following policies for the importation of non-viable, non-salmonid marine finfish product from any country:

"EITHER

- the fish should be processed in a premises under the control of a competent authority;
- the fish should be eviscerated;
- the fish should be subjected to an inspection and grading system supervised by a competent authority;
- the head and gills should be removed and internal and external surfaces thoroughly washed;
- consignments exported to Australia should be accompanied by official certification confirming that the exported fish meet Australia's import conditions in full;

OR

- for product that has been further processed (beyond that described above) to a consumer-ready state, AQIS will not require an official health certificate."

[7] Defined as fish that weigh less than 200g in head-off, gilled and gutted presentation.
[8] Defined as fish with developed gonads.

2. Animal Quarantine Policy Memorandum 1999/64 (AQPM 1999/64) Implementation of New Quarantine Requirements for the Importation of Non-Viable, Non-Salmonid Marine and Freshwater Finfish and Their Products

2.27 AQPM 1999/64, published 22 September 1999, indicates that the new quarantine requirements for the non-salmonid fish will take effect on 1 December 1999. Appendix 1 specifies that no import permit is required for:

(1) Consumer-ready product from all countries (the definition of consumer ready product is a for salmonids, above), with a provision that "Consignments of consumer-ready product should be packaged to facilitate import inspection and will be subject to periodic inspection at the border to confirm that the product is free from lesions associated with infectious disease. As with other imported products, in the event that an imported consignment fails to meet quarantine requirements AQIS would normally detain the consignment at the border, pending a decision to order re-export, further processing or destruction of the product.";

(2) Product of New Zealand origin that is accompanied by a MAF certificate. Product may be partially processed (e.g. head-off, gilled and gutted) or unprocessed (whole, round fish).

(3) Head-off, gilled and gutted fish from countries other than New Zealand, if the fish meet the following conditions:

- "the fish were processed in a premises under the control of a competent authority;
- the fish were eviscerated;
- the fish were subjected to an inspection system supervised by a competent authority;
- the product is free from visible lesions associated with infectious disease;
- the head and gills have been removed and internal and external surfaces thoroughly washed; and
- consignments exported to Australia are accompanied by a health certificate from the competent authority of the exporting country confirming that the exported fish meet Australia's import conditions in full."

All other non-salmonid fish require an import permit. This measure also contains a list of specified finfish species which are normally susceptible to diseases of quarantine concern (Appendix 2).

3. Animal Quarantine Policy Memorandum 1999/79 (AQPM 1999/79) Implementation of New Quarantine Policies for the Importation of Non-Viable, Non-Salmonid Marine and Freshwater Finfish and Their Products

2.28 AQPM 1999/79, published 16 November 1999, clarifies the administrative arrangements for the importation of non-salmonid marine and fresh water finfish product as provided in AQPM 1999/64. The requirements came into effect on 1 December 1999. It contains further specification on the conditions and required documentation for the importation of: (a) non-salmonid finfish product in consumer-ready form; (b) non-salmonid finfish product from New Zealand; (c) eviscerated, head-off non-salmonid finfish product in a consignment accompanied by an official health certificate; (d) other non-salmonid finfish product; and (e) quarantine conditions for the importation of non-viable, non-salmonid marine and freshwater finfish and their products.

E. MEASURES REGARDING IMPORTS OF LIVE ORNAMENTAL FINFISH

2.29 A separate import risk analysis was undertaken with respect to live ornamental finfish (hereafter "the ornamental fish IRA").[9] After 6 July 1999, Australia also identified certain measures regarding imports of live ornamental finfish. AQPM 1999/51 sets out a number of requirements, to which AQPM 1999/77 provides more detail.

1. Animal Quarantine Policy Memorandum 1999/51 (AQPM 1999/51) Final Reports of Import Risk Analyses on Non-Viable Salmonid Products, Non-Viable Marine Finfish Products and Live Ornamental Finfish and Adoption of New Policies

2.30 As noted in paragraph 2.26, for non-salmonids including live ornamental finfish, AQPM 1999/51 indicates "under transitional arrangements, existing policies for the importation of … live ornamental finfish will continue to apply. AQIS will specify the time-limit for the transitional arrangements after consultation with relevant stakeholders." Attachment 3 to AQPM 1999/51 lists the following requirements for ornamental finfish:

> "Policy for all ornamental finfish are that each consignment be accompanied by:
>
> - an animal health certificate from a competent authority attesting to the health of the fish in the consignment and the health status of the premises of export;
> - certification from a competent authority that the premises of export are currently approved for export to Australia; and
> - certification from a competent authority that the fish had not shared water with food-fish aquaculture premises.
>
> It is policy that each consignment be subject to post-arrival quarantine detention for a minimum period in approved private facilities under quality assurance arrangements approved by AQIS. It is anticipated that the minimum period of quarantine would be 3 weeks for goldfish and 1 week for all other Schedule 6 listed finfish."

In addition, attachment 3 indicates that "…delegates will have regard to the following risk management measures singly or in combination, as appropriate to the pathogens of concern, to the importation of ornamental finfish to address specific disease concerns …" and identifies further additional risk management measures.

2. Animal Quarantine Policy Memorandum 1999/77(AQPM 1999/77) Importation of Ornamental Finfish

2.31 AQPM 1999/77, of 17 November 1999, provides detailed import conditions for ornamental finfish in accordance with the policies announced in AQPM 1999/51. It lists conditions regarding documentation, quarantine, export premises approval, health certification requirements, standards for handling and packaging ornamental finfish, and disinfection procedures. Established quarantine periods are 21 days for goldfish, 14 days for gouramis and cichlids, and 7 days for other ornamental finfish. AQPM 1999/77 states that:

> "Implementation of the new requirements will be staged to help facilitate their orderly introduction. From 1 December 1999, importers will require an import permit for marine ornamental finfish. This is an existing requirement for freshwater fish.
>
> All new requirements relating to overseas exporters and Competent Authorities of exporting countries will be implemented from 1 February 2000. …

[9] Import risk analysis on live ornamental finfish, Australian Quarantine and Inspection Service, July 1999.

> From 1 May 2000, all importers must fully comply with new post-arrival quarantine requirements. …
>
> …
>
> The new conditions require health certification to accompany all shipments of imported goldfish, including a statement of freedom from specified disease agents. Statements of freedom must ordinarily be based on a testing programme that demonstrates absence of the disease agents in the source population over a period of at least two years. In order to facilitate trade in goldfish in the interim, AQIS will require that goldfish health certification from 1 February 1999 [sic] is based on the following testing regimens: … All health certification from 1 January 2002 must fully comply with testing as detailed in the attached conditions."

F. TASMANIA'S RESTRICTIONS ON SALMONID IMPORTS

2.32 On 20 October 1999, the Government of Tasmania declared a large part of Tasmania to be a protected area for the purpose of preventing the introduction into the area of "whirling disease" (*Myxobolus cerebralis*). The Tasmanian Government Gazette stated that "fish from the family *Salmonidae* must not be moved in the protected area", unless an inspector issued an import permit and any conditions specified in that permit were complied with. To date, no import permits have been issued by the Tasmanian Government. The 20 October measure was subsequently revoked on 18 November 1999, and replaced by a measure published in the Tasmanian Government Gazette on 24 November 1999. This new measure prohibits the importation of fresh chilled or frozen salmon unless it is demonstrated to the satisfaction of the Chief Veterinary Officer (of Tasmania) that the salmon has been derived from fish grown in an area free from six specified diseases, or alternatively has been heat-treated in a hermetically sealed container so as not to require refrigeration or freezing. The six diseases identified in the declaration are:

- Infectious haematopoietic necrosis (IHN);
- Infectious salmon anaemia (ISA);
- Aeromonas salmonicida ("furunculosis");
- *Renibacterium salmoninarum* ("bacterial kidney disease");
- Infectious pancreatic necrosis (IPNV); and
- *Myxobolus cerebralis* ("whirling disease").

III. CLAIMS OF THE PARTIES

3.1 **Canada** claims that (a) Australia has failed to take the measures necessary to comply with the recommendations and rulings of the DSB; and that (b) new policies that Australia announced on 19 July 1999, but has not fully implemented, are inconsistent with numerous provisions of the SPS Agreement. Accordingly, both the existence and consistency of Australia's measures are at issue in this dispute. More specifically, Canada claims that on the basis of Australia's actions - and inactions - as of the current date, it cannot reasonably be said that Australia has implemented measures to comply with the recommendations and rulings of the DSB. The necessary measures do not exist.

3.2 Canada further claims that even if Australia has implemented some measures purporting to comply with the recommendations and rulings of the DSB by implementing the policies set out first in AQPM 1999/51 and now in AQPM 1999/69, those measures are inconsistent with numerous provisions of the SPS Agreement. The measures would not remedy Australia's violation of Articles 5.1, 2.2, 5.5 and 2.3 of the SPS Agreement. They are also inconsistent with Articles 5.6, 8 and Annex C.1(c).

3.3 **Australia** claims that the measures it announced on 19 July 1999, bring it into full compliance with the recommendations and rulings of the DSB. The measures respond in full to the recommendations and rulings of the Dispute Settlement Body (DSB). In product scope they go beyond measures applied to fresh, chilled or frozen salmon from Canada, as well as going beyond the measures relevant to the findings under Article 5.5 of the SPS Agreement (whole frozen herring for use as bait and live ornamental finfish). The transparency of the process and techniques, together with the scientific and analytical rigour employed, resulted in the least trade restrictive measures whilst achieving Australia's appropriate level of protection (ALOP).

3.4 With respect to the finding that the quarantine import prohibition on fresh chilled or frozen salmon was being maintained without a proper risk assessment (Article 5.1 and by implication Article 2.2), a risk assessment was undertaken on fresh chilled or frozen salmon from Canada as part of a generic Import Risk Analysis (IRA) on non-viable salmonid products and other non-viable marine finfish.

3.5 With respect to the finding that there were arbitrary or unjustifiable distinctions in the levels of protection considered to be appropriate in different situations (between fresh chilled or frozen salmon on the one hand and on the other hand whole frozen herring for use as bait and live ornamental finfish) which resulted in a disguised restriction on international trade (Article 5.5 and second sentence Article 2.3), in addition to the measures applying to the salmon product based on a risk assessment, risk assessments were undertaken, *inter alia*, on the disease risks associated with whole frozen herring for use as bait and on the disease risks associated with live ornamental finfish.

3.6 Therefore, Australia argues, it is clear that Australia has implemented. The measures applying to salmon and other non-viable marine finfish are in force. A certificate for the import of Canadian salmon has been approved and an import permit granted. This certificate is irrefutable evidence that Australia has removed the import prohibition on fresh chilled or frozen salmon from Canada and that the measures as described are being applied to fresh chilled or frozen salmon from Canada. The additional measures applying to live ornamental finfish were progressively introduced from 1 December 1999.

IV. SUMMARY OF MAIN ARGUMENTS OF THE PARTIES[10]

A. INTRODUCTION

Australia

4.1 The measures are based on a risk assessment forming part of an Import Risk Analysis (IRA) on non-viable salmonids and on other non-viable marine finfish, together with an IRA on live ornamental finfish, undertaken in parallel and using the same methodology and risk assessment techniques. The approach - disease-based risk assessment and disease-based risk management - together with an enhanced role for certification in risk management - is radically different from the narrowly-defined product/country approach that was the basis of the original Panel's examination.

4.2 The conditions have been drawn up on the basis of the risk management measures necessary to meet Australia's ALOP against the risk associated with a particular disease, including in relation to differences of prevalence in different species or regions (e.g. Atlantic/Pacific, wild/farmed) and different risks that might pertain between, for example, commercially harvested adult fish compared to juveniles or sexually mature adults (spawners in the case of salmon).

[10] This section presents the summary of main arguments as provided by the parties. Their various arguments have been presented for each of the main issues under consideration.

4.3 The science-based risk evaluation process of the IRA's destroyed once and for all assumptions that risk could only be managed by applying the same measures to all products, and that the ALOP can be determined by the measures applied, or that a disease found in different host species presents the same risk.

4.4 The IRA's provide a sound basis for the Panel to arrive at legal findings that do not conflict with scientific principles and relevant scientific judgement. The measures applying to salmon and other products do not signal any diminution of Australia's ALOP. What they do reflect is consistency in ALOP across product groups, which is achievable because of the disease-based approach and the evaluation of risk in light of factors relevant to individual disease/product combinations.

4.5 A determination of risk management measures on the basis of comparative risks between diseases, between product types, and between sources (according to past disease status, hosts, etc.) allows for greater precision in the choice of measures and assigns an important role to certification as an effective risk management tool, which, as appropriate, may serve to lessen the need for product-treatment conditions.

4.6 Thus, a combination of a number of conditions *applied* to one product should be seen as a least trade-restrictive approach to risk management. Crude comparisons between products on the basis of the number of conditions attached to different products are totally devoid of scientific merit and are meaningless. They do not meet the proper scientific objective of comparing risk relativities and reflect outdated concepts that the measure defines the ALOP.

4.7 The measures which Australia has implemented for salmon are substantially trade liberalising, while achieving Australia's ALOP. Australia's largest salmon producer sells a wide range of consumer-ready product. There are no quarantine barriers against Canadian salmon producers competing in that market sector. Canadian producers can also sell to salmon processors, including to manufacturers of smoked salmon. The measures do not serve to preserve any segment of the consumer market for domestic suppliers alone.

4.8 In a wider context, the IRA's and the measures based on those IRA's convincingly demonstrate that Australia's quarantine policies are driven by very high standards of health protection, *not* trade protection. This is clearly shown by the risk management of diseases identified in New Zealand salmon compared to those of Canadian and US salmon: US and Canadian salmon have broadly comparable disease status, particularly in regard to Pacific salmon. New Zealand has a favourable disease status overall. Accordingly, the quarantine measures applying to New Zealand salmon are less restrictive than those applying to Canadian and US salmon. This is entirely due to disease status and risk.

4.9 The least trade restrictive conditions apply to salmon from New Zealand even though New Zealand is generally regarded as potentially the most commercially competitive supplier to the Australian market. This is overwhelming evidence that the quarantine measures are not arbitrary, unjustifiable or result in a disguised restriction on international trade.

4.10 The disease-based risk management measures applying to salmon from Canada are less trade-restrictive in application than the recommendations contained in the 1995 Draft Report. The 1995 draft recommendations, if adopted, would have continued a quarantine prohibition on salmon other than wild Pacific salmon from Canada and USA and, in some cases would have involved tighter quarantine measures than the risk management measures identified as necessary against specific diseases in the 1999 IRA (VHS, *Aeromonas salmonicida*).

4.11 The measures respond in full to the recommendations and rulings of the Dispute Settlement Body (DSB). In product scope they go beyond measures applied to fresh, chilled or frozen salmon from Canada, as well as going beyond the measures relevant to the findings under Article 5.5 of the SPS Agreement (whole frozen herring for use as bait and live ornamental finfish). The transparency

of the process and techniques, together with the scientific and analytical rigour employed, resulted in the least trade restrictive measures whilst achieving Australia's ALOP.

4.12 Australia recalls the difficulties registered by the original Panel in relation to scientific comparisons between different aquatic products.[11] As scientific risk assessments have since been completed on the products forming the basis of the original Panel's findings in relation to Article 5.5 of the SPS Agreement, the Panel is now well placed to go beyond what it freely acknowledged were no more than simplified comparisons, which formed the basis for its earlier conclusions. In relation to a WTO agreement that requires WTO Members to base measures on scientific principles and on sufficient scientific evidence (in particular Articles 2.2 , 5.1 and 5.2 of the SPS Agreement), it is important that legal examinations and legal outcomes respect scientific principles and scientific evidence. The Panel now has a basis to go beyond "first principles".

Canada

4.13 This Panel has been established under Article 21.5 of the Understanding on Rules and Procedures Governing the Settlement of Disputes ("DSU"). Its purpose is to determine the existence and consistency with the Agreement on Sanitary and Phytosanitary Measures ("SPS Agreement") of certain measures purportedly taken by Australia to comply with the recommendations and rulings of the Dispute Settlement Body ("DSB").

4.14 It is Canada's position that Australia has failed to take the measures necessary to comply with the recommendations and rulings of the DSB. It is also Canada's position that new policies that Australia announced on 19 July, but for the most part has not implemented, are inconsistent with numerous provisions of the SPS Agreement. Accordingly, both the existence and consistency of Australia's measures are at issue in this dispute.

4.15 The new policies that Australia announced on 19 July are at odds with sound science and internationally-accepted good practice. On the one hand, Australia would impose extremely stringent and excessive restrictions on salmonids in the place of its complete ban on commercial imports of fresh, chilled or frozen salmon from Canada. On the other hand, Australia did not at the same time impose new restrictions on imports of non-salmonid finfish and live ornamental fish. These latter categories include uneviscerated bait and feed-fish and live ornamental fish known to host many serious disease agents exotic to Australia, including disease agents that Australia uses as an excuse for imposing the stringent restrictions on salmon imports.

4.16 Australia later imposed new restrictions on non-salmonids and, according to its policies, at some point would impose new restrictions on live ornamental fish. However these restrictions are significantly less stringent than its salmonid restrictions and contain loopholes unavailable for salmonid imports. Moreover, Australia continues to impose no legislative restrictions at all to control the spread of diseases from the domestic movements of non-viable finfish for human consumption, despite its insistence that such controls are required on imported products.

4.17 It is no coincidence that the combined effect of these policies is to protect the competitive position of Australia's salmon aquaculture industry against imports while leaving other Australian fisheries and aquaculture interests free to import and trade the products on which they depend, including bait and feedfish and live ornamental fish.

[11] *Australia – Salmon* Panel Report (WT/DS18/R), Annex 1, Footnote 469.

B. TERMS OF REFERENCE

Australia

4.18 Australia sought immediate rulings from the Panel in relation to its terms of reference, the product scope of the dispute, and the examination of evidence in existence at the time of the original panel. Australia contends that Article 21.5 of the DSU limits an Article 21.5 panel's mandate to an examination of the "... measures taken to comply with the recommendations and rulings [of the DSB] ..." This authority cannot be extended by a request for the establishment of an Article 21.5 panel.

4.19 Having elected to request the establishment of an Article 21.5 panel, Canada cannot seek to perfect or correct claims and arguments of the original dispute or to re-open the findings adopted by the DSB. It cannot seek to introduce evidence that existed at the time of the original panel proceedings. Its claims and arguments must be limited to the measures taken to comply - that is, to new circumstances. Australia agreed with the arguments submitted by the European Communities regarding old and new facts and evidence (paragraph 4.355, below). The original dispute resulted in no findings, either under Article 5.5 or Article 2.3, of "discrimination" in the sense of either Article.

4.20 The basis of the Panel and Appellate Body's findings under Article 5.5 was *whole frozen herring for use as bait* and *live ornamental finfish*. Australia is not required to take "measures to comply" beyond the product scope of the Article 5.5 findings. Canada cannot raise new claims and arguments on measures other than those applying to imported frozen herring for bait and live ornamental finfish. Nor can it raise new claims and arguments in relation to measures applying to domestic fish. As confirmed by the Appellate Body, the Panel did not conclude that the alleged absence of internal controls constitutes a violation of Article 5.5.[12]

Canada

4.21 Canada argues that Australia's position on the scope of this dispute is not unlike that taken by the European Communities in *EC – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Article 21.5 by Ecuador*[13] [hereinafter, the *Ecuador* case]. In that dispute, the EC argued that the panel's terms of reference were limited to the matters on which the DSB adopted its recommendations or rulings, based on the original panel and Appellate Body Reports.[14] The panel in the *Ecuador* case determined that the limitation suggested by the EC could not be found in its terms of reference or in the ordinary meaning of the terms of Article 21.5 of the DSU.[15]

4.22 The *Ecuador* panel found support for its interpretation of Article 21.5 in the context and the object and purpose of the DSU, in particular, Articles 21.1 and 3.3 regarding, respectively, prompt compliance with the recommendations and rulings of the DSB and the prompt settlement of disputes. It concluded that acceptance of the EC argument would not promote and would not be consistent with the prompt settlement of disputes.[16]

4.23 The findings of the *Ecuador* panel are relevant to the present case. It is fully within the scope of Article 21.5 for the Panel to consider whether the measures that Australia claims to have taken to comply with the recommendations and rulings of the DSB are consistent with any provision of the SPS Agreement that Canada identified in its request. Indeed, the Panel is bound to do so in order to fulfil its terms of reference under Article 21.5. The fact that the original Panel's findings did not extend to "discrimination" under Articles 2.3 or 5.5 of the SPS Agreement, or that the Panel's analysis

[12] *Australia – Salmon* Appellate Body Report (WT/DS18/AB/R), para. 176.

[13] *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Article 21.5 by Ecuador*, Report of the Panel, (WT/DS27/RW/ECU), 12 April 1999.

[14] *Ibid*., para. 6.3.

[15] *Ibid*., paras. 6.7-6.8.

[16] *Ibid*., para. 6.9.

under Article 5.5 focused on herring and live ornamental finfish, does not constrain the scope of the current proceedings.

4.24 It would not be consistent with either the prompt settlement of disputes or compliance with the recommendations and rulings of the DSB if, for example, Australia could assert that it had only to comply with Article 5.5 with regard to a "disguised restriction on international trade" but not with regard to "discrimination", and with regard to whole frozen herring but not pilchards (or whole *fresh* herring) because the reasons of the Panel and the Appellate Body focused on the former only. If Australia's position were correct, panels and the Appellate Body would have to comment on every piece of evidence filed by any party or third party, or in this case, comment on every possible species that could host a relevant disease agent.

4.25 In any event, the findings on which the recommendations and rulings of the DSB are based are not nearly as circumscribed as Australia implies. For example, the findings of the Appellate Body with respect to Article 5.5 are limited neither to a "disguised restriction on international trade" nor to whole frozen herring and live ornamental finfish.

C. THE TASMANIAN MEASURE

Canada

4.26 Tasmania first, on 20 October 1999, put in place a ban on imports of salmonids. On 18 November 1999, it revoked this measure and replaced it with a new form of ban that would require Canada to demonstrate that any dead, eviscerated, fresh chilled or frozen salmon products that it wished to export to Tasmania were from areas free of six diseases. Although these diseases correspond closely to those that are the basis for Australia's measures, the Tasmanian measure is significantly more trade restrictive in that Australia requires a form of area disease freedom for ISA but not the other diseases of concern to it. Thus, even the limited "consumer-ready" product forms that Australia will allow to be imported may not be imported into Tasmania.

4.27 The effect of Tasmania's measure on Australia's obligation to comply with the recommendations and rulings of the DSB is clearly within the Panel's terms of reference, as a matter of both law and policy. Australia claims that it has complied with the recommendations and rulings of the DSB in part by removing the import prohibition on Canadian salmon. The Tasmanian ban restores that import prohibition for part of Australia. Australia is legally responsible for the Tasmanian ban under Article 13 of the SPS Agreement and Article 27 of the Vienna Convention on the Law of Treaties.

4.28 It would be absurd to hold that the effects of a measure by one level of government that thwarts a measure by another level of government cannot be considered by an Article 21.5 panel because it is not itself a measure "taken to comply". Such a result would neither promote nor be consistent with prompt compliance with the recommendations and rulings of the DSB and the prompt settlement of disputes. To hold as Australia would have this Panel do would give an advantage to federal states, which could encourage or simply permit its constituent jurisdictions to enact measures to effectively nullify other measures taken by the federal government to comply with recommendations and rulings of the DSB.

4.29 Canada is asking the Panel to consider the consequences of Tasmania's ban for Australia's non-compliance with the recommendations and rulings of the DSB. The Tasmanian ban perpetuates for part of Australia the now 24 year-old ban that was found by the Panel, the Appellate Body and the DSB to be inconsistent with Australia's obligations under the SPS Agreement. It does so not on any new or independent basis but in a manner already found to be inconsistent with the SPS Agreement.

4.30 As a matter of law, Australia is fully responsible for Tasmania's measure. This is what Canada argued and what the Panel found in its preliminary ruling. As the Panel has already issued its ruling, Australia's further arguments are moot. They are also faulty.

4.31 Australia contends that Tasmania's measure could not be characterized as the measure of a territorial sub-division of Australia but rather a measure taken by "other than a central government body" in the sense of Article 13 of the SPS Agreement. In Canada's view, this is a distinction without a difference. In any event, pursuant to Article 13, Australia is fully responsible for measures taken by "other than central government bodies" within its territory.

4.32 Australia also refers to Article 22.9 of the DSU. However, that article confirms that Canada may invoke the dispute settlement provisions of the "covered agreements" in respect of measures affecting their observance by regional or local governments in Australia. Pursuant to Appendix 1 to the DSU, the covered agreements under the DSU include both the SPS Agreement and the DSU itself. Article 22.9 also makes clear that the provisions of the covered agreements and the DSU relating to compensation and suspension of concessions apply where it has not been possible for Australia to secure observance of the covered agreements by Tasmania.

4.33 In the present case, it appears that Australia has been unable to secure the observance of the DSU and the SPS Agreement by Tasmania. Tasmania's measure - whether the original ban or the new measure – nullifies Australia's own measures taken to comply with the recommendations and rulings of the DSB, regardless of the consistency of Australia's own measures. Thus, contrary to Australia's assertions, Canada need not seek an independent ruling on the consistency of Tasmania's measure with the SPS Agreement. It therefore is fully within the jurisdiction of this Panel, as the Panel has already found, to consider Tasmania's ban in the context of Australia's compliance with the recommendations and rulings of the DSB.

4.34 At a minimum, the additional certification requirement is not based on a risk assessment, contrary to Article 5.1 of the SPS Agreement and, by implication, is also inconsistent with Article 2.2. It is an unnecessary information requirement, contrary to Article 8 and Annex C.1(c) of the SPS Agreement. It is also inconsistent with Article 5.6: Australia has acknowledged by its own measures that there are significantly less trade restrictive measures reasonably available to achieve its appropriate level of protection. This is without prejudice to the separate issue of whether Australia’s measures are also inconsistent with Article 5.6.

Australia

4.35 Australia argues that the Tasmanian measure is outside the Panel's terms of reference. Article 21.5 limits the mandate of an Article 21.5 panel to "measures taken to comply". In the current dispute, these are the measures taken by Australia to implement the recommendations and rulings of the DSB relating to the findings of the Appellate Body and the Panel report as modified by the Appellate Body. The effects or consequences of another measure *not* taken to comply is outside an Article 21.5 panel's mandate. The Tasmanian measure does not form part of the measures taken by Australia to comply with the DSB recommendations and rulings. Canada has not contested Australia's statement of fact that the Tasmanian measure has been taken independently of Australia's measures. Tasmania's measure is separate and distinct from Australia's measures. The Tasmanian measure consists of a completely new measure and a completely new claim.

4.36 The Panel cannot make a finding on the application of compensation or suspension of concessions in relation to any Tasmanian measure. Article 22.9 of the DSU is the operative provision, read in conjunction with Article 13 of the SPS Agreement. At a minimum the DSU provisions relating to compensation and suspension of concessions cannot apply unless the DSB has ruled that a provision of a covered agreement has not been observed in relation to a measure taken by a regional government.

4.37 Canada has not confirmed that it is seeking a ruling on the SPS consistency of the Tasmanian measure. It cannot therefore be inferred that Canada is seeking to "challenge" the SPS consistency of Tasmania's measure. On the contrary, it is reasonable to assume from the statement in Canada's letter of 16 December 1999, "…Canada need not seek an independent ruling on the consistency of Tasmania's measure with the SPS Agreement", that Canada continues to maintain the position put forward in paragraph 5 of its second supplementary submission, i.e. Canada is not requesting the Panel to rule on the SPS consistency of Tasmania's measure.

4.38 If, as is apparent, Canada is not seeking a ruling on the consistency with the SPS Agreement of Tasmania's measure, it follows that the DSB would be prevented from any ruling, under Article 22.9 of the DSU, that a provision of the SPS Agreement had not been observed in relation to the particular measures.

4.39 As stated in paragraph 22 of Canada's Oral Statement of 10 December, the issue for Canada "… is whether the ban effectively obstructs any such compliance measures as Australia may have taken". Consistent with its earlier characterization of the Tasmanian measure as one that "… thwarts a measure by another level of government", Canada has not contested Australia's statement of fact that the Tasmanian measure is distinct and separate from the measures taken by Australia to comply. As confirmed by the Panel, any measure other than a "measure taken to comply" falls outside the scope of a compliance panel. If Canada does not characterize the Tasmanian measure as part of measures taken by Australia to comply with the DSB recommendations and rulings, it is not open to the Panel to conclude otherwise. This is a separate matter from any consideration whether any measure covering the same product should be considered to come within the Panel's terms of reference.

4.40 Moreover, Canada has not sought to clarify whether paragraph 22 of its rebuttal submission – characterized by the Panel as "arguments" – in fact constitutes a "claim" of SPS inconsistency of a Tasmanian measure. There is a difference between "claims" and "arguments" and the issue before the Panel is whether or not Canada has made a "claim" of SPS inconsistency. If it has not submitted a claim of SPS inconsistency, the Panel cannot proceed to make any findings on the basis of "arguments".

4.41 If, on the other hand, Canada is deemed to have submitted a "claim" of SPS inconsistency by virtue of paragraph 22 of its rebuttal submission, it is Australia's contention that any such "claim" - as distinct from "arguments" - cannot be validly made in a *rebuttal* submission. Canada was not denied the opportunity to put forward claims of SPS inconsistency at the time of its second supplementary submission, but seemingly elected not to do so. Australia refers to its request for a procedural ruling by the Panel on Canada's right to present new claims in its rebuttal submission. This is a matter that relates to the functioning of the WTO dispute settlement system.

4.42 Paragraph 22 of Canada's rebuttal submission does not go beyond a mere assertion of inconsistency of a Tasmanian measure. Canada's oral statement of 10 December and its letter of 16 December do not attempt to elaborate on the assertions made in its rebuttal submission and as such, do not provide Australia with anything to rebut. Canada's "arguments" do not provide any basis for a legal rebuttal by Australia. In particular, Canada has not sought to frame its assertions again the specific legal tests of the provisions of the SPS Agreement cited in its rebuttal submission and in its oral statement, including whether or not the Tasmanian measure is significantly more trade restrictive than Australia's measures.

4.43 Canada has not claimed, against specific provisions of the SPS Agreement, that the Tasmanian measures are inconsistent. However, Canada presumes that the Tasmanian measures are inconsistent with the SPS Agreement. It then seeks to use this presumption to imply non-conformity of the 19 July 1999 measures. Canada cannot imply a presumption of inconsistency by simple reference to Article 13 of the SPS Agreement.

4.44 Canada has not substantiated its assertion of Australia's inconsistency with Article 13 of the SPS Agreement. Article 13 of the SPS Agreement provides, *inter alia*, that "Members are fully responsible for the observance of all obligations …" [of the SPS Agreement]. Australia's obligations for a measure taken by Tasmania therefore relate to "observance" of SPS obligations by Tasmania.

4.45 Canada has not submitted any claims or arguments that Australia has *not* formulated and implemented "positive measures and mechanisms in support of the observance of the provisions" of [the SPS Agreement] by Tasmania. In paragraph 8 of its letter of 9 December, Australia submitted positive evidence that it had formulated and implemented such measures and mechanisms, in regard to the Memorandum of Understanding and consultations initiated under that Memorandum.

4.46 Canada has done no more than assert that "it appears that Australia has been unable to secure observance of the DSU and the SPS Agreement by Tasmania". In order to substantiate that assertion, Canada would first need to establish a prima facie case that Tasmania's measure is not observing the provisions of the SPS Agreement. If Canada is not seeking a ruling on the SPS consistency of the Tasmanian measure, Article 13 does not have application.

4.47 Australia has neither required nor encouraged the Government of Tasmania to take its measures. Commonwealth Ministers are on the public record in objecting to such action. Australia has formulated and implemented positive measures and mechanisms in support of the observance of the provisions of the SPS Agreement by Tasmania. Consultations are continuing between the Commonwealth and Tasmania, including consultations under the auspices of the 1995 Memorandum of Understanding on Animal and Plant Quarantine Measures, signed by Commonwealth, State and Territory Ministers. The purpose of the Memorandum is to give effect to Australia's obligations under Article 13 of the SPS Agreement. A further meeting between Commonwealth and Tasmanian officials is scheduled for 21 January 2000.

4.48 Australia continues to apply the measures announced on 19 July 1999 to the whole of Australia's territory. Australia has not taken any action to encourage or give effect to Tasmania's measure. Contrary to Canada's assertion, Tasmania's measure does not "nullify" any measures taken by Australia to comply with the DSB recommendations and rulings. According to the Oxford Dictionary, "nullify" means to "cancel" or "neutralize". Tasmania's measure does not serve to deny access of Canadian salmon to "a large part of Australia", as argued by Canada. In both geographical and population terms, Tasmania is the smallest State in Australia. Tasmania's population accounts for around 2 per cent of Australia's total population of 18 million.

4.49 In the alternative, and without prejudice to Australia's views on the SPS consistency of Tasmania's measure, it is premature to conclude that all possibilities for securing observance have been exhausted. Consultations under the MOU have been scheduled for 21 January 2000. It has not proved possible to schedule a meeting before that date.

4.50 Furthermore, Australia argues, the SPS-consistency of the 19 July measures must be examined separately from the Tasmanian measure. The SPS consistency of a Tasmanian measure cannot be the basis for a finding of inconsistency of the 19 July measures. A Tasmanian measure cannot be used to "shed light on" or read down the conformity of the 19 July measures which are otherwise consistent with the SPS Agreement.

D. DUE PROCESS

Australia

4.51 Australia also raised some due process concerns. These relate to two matters: (1) Canada's supplementary submission of 30 September 1999; and (2) the requirement of Canada to demonstrate a *prima facie* case and Australia's opportunity to respond to claims made against it.

4.52 The Panel granted Canada an additional period of time to provide arguments relevant to AQPM 1999/64. However, Canada's supplementary submission is almost entirely concerned with a disease of non-salmonids endemic to the whole of Australia, the factual matters of which was publicly available information.

4.53 In its questions to parties, the Panel invited Canada to correct deficiencies in its claims and arguments (Questions 12 and 13). These included Canada's failure to identify specific measures as alternative measures under Article 5.6, and to identify specific SPS provisions claimed against in its supplementary submission. Australia's concerns relate to Canada's burden of demonstrating a *prima facie* case, and Australia's opportunity to respond to claims made against it.

E. MEASURES TO COMPLY WITH THE RECOMMENDATIONS AND RULINGS OF THE DSB

Canada

4.54 Canada argues that the relevant AQPM[17] sets out new policies to be applied by the Director of Quarantine (or his/her delegates) when considering, under section 70 of QP 1998, whether to grant an import permit under Section 43 of QP 1998. Unless and until these policies are fully implemented, there is no basis for Australia's contention that measures exist to implement the recommendations and rulings of the DSB.

4.55 Australia did not implement its new measures for non-salmonid finfish until 1 December 1999. It will not fully implement its new policies for live ornamental finfish until 2002.[18] It has also become clear in discussions with Australian officials, that AQIS has not implemented a number of the steps required to give effect to its new policies for salmonids. For example, the new policy purports to currently allow the importation of non-"consumer-ready" product for processing at an approved Australian facility. In fact, however, AQIS has yet to finalize its criteria for granting the facility approvals.

4.56 Issuing policy statements does not constitute the implementation of new measures or compliance with the recommendations and rulings of the DSB. There is a fundamental difference between a Member stating its intention to implement, as it is required to do within 30 days after the adoption of the panel or Appellate Body Report and actually fulfilling that intention within the reasonable period of time as determined by Article 21.3 of the DSU.

4.57 Australia's non-compliance, or lack of measures, is particularly glaring in the case of live ornamental finfish. Australia's lack of measures with respect to live ornamental finfish played an important part in the DSB's rulings that Australia is acting inconsistently with Article 5.5 and by extension Article 2.3 of the SPS Agreement. Even next year, not all of Australia's requirements for live ornamental finfish will be in force. Disease testing requirements for goldfish will not fully take effect until the beginning of 2002.

4.58 If, as Australia claims, all of its requirements are necessary to achieve its appropriate level of protection, then it will not achieve that level of protection until 2002. Until then, it will not have complied with the recommendations and rulings of the DSB. Australia knew this on 19 July 1999. Australia seems to believe that it may unilaterally grant itself months or even years of additional time

[17] AQPM 1999/51 of 19 July 1999 stated policies for salmonids, non-salmonids and live ornamental finfish. AQPM 21999/69 of 20 October 1999 clarified these policies for salmonids. AQPM 1999/64 of 22 September 1999 elaborated on the policies identified in AQPM 1999/51 for non-salmonids. It was further clarified on 16 November by AQPM 1999/79.

[18] See AQPM 1999/77.

for compliance, regardless of the 6 July 1999 deadline imposed by the arbitrator.[19] Australia can determine how it will implement, but it cannot determine when.

4.59 Furthermore, not all of the requirements Australia imposes are necessarily even listed in the AQPMs. Thus, when Australia approved a health certificate for the importation of Canadian farmed salmonids on 26 November, it required a declaration for Atlantic salmon and rainbow trout that the fish do not come from a farm infected with ISAV. This was specified in AQPM 1999/69 and was addressed in the 1999 Report.[20] However, Australia has also imposed a requirement that the fish do not come from waters within 10 kilometers or one so-called tidal interchange of an infected farm, whichever is greater. This is specified neither in the AQPMs nor is it mentioned in the 1999 Report.

4.60 Australia appears to ascribe sinister motives to Canada's delay in even applying for certification for farmed salmonids. However, there was no bad faith on Canada's part. Under Canadian law, wild salmon fall within federal jurisdiction whereas farmed salmon fall jointly within federal and provincial jurisdiction. Thus, Canada could seek certification for farmed salmonids only after consulting with its provincial governments.

Australia

4.61 Australia submitted that it had taken the following actions in response to the recommendations and rulings of the DSB in relation to the provisions of the SPS Agreement.

4.62 With respect to the finding that the quarantine import prohibition on fresh chilled or frozen salmon was being maintained without a proper risk assessment (Article 5.1 and by implication Article 2.2), a risk assessment was undertaken on fresh chilled or frozen salmon from Canada as part of a generic Import Risk Analysis (IRA) on non-viable salmonid products and other non-viable marine finfish. The 1999 IRA process identified certain diseases in salmon of Canadian origin. These diseases were considered in the context of Australia's appropriate level of protection (ALOP), with the list of diseases that warranted consideration of risk management measures narrowed, at a baseline of evisceration (the level at which the product is internationally traded), to six diseases.

4.63 Risk management measures were evaluated on a disease-by-disease basis and measures adopted commensurate with risk. Based on this risk analysis, the Director of Quarantine decided that quarantine prohibition on fresh chilled or frozen salmon should be removed. Broadly, fresh chilled or frozen Canadian salmon may now be imported in three ways: (1) product in consumer-ready form; (2) product for processing; and (3) product which meet equivalent approaches to managing risk.

4.64 The relevant seafood importers association was closely consulted with a view to ensuring the least trade restrictive approach.

4.65 Entry into Australia is subject to permit, in accordance with QP1998 as amended. The cost of an import permit is A$60 valid for multiple consignments for up to 2 years. Legal action was not required to implement the decision, which entered into effect on 19 July 1999.

4.66 In order for commercial trade to flow, exports of consumer-ready product must be accompanied by certification in a form approved by AQIS. An import permit will not be granted absent such certification. AQIS has approved certification from Canada, New Zealand and the US.

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[19] *Australia – Measures Affecting Importation of Salmon* – Arbitration under Article 21.3(c) of the Understanding on Rules of Procedures Governing the Settlement of Disputes, Award of the Arbitrator, (WT/DS18/9) ("*Australia – Salmon Arbitrator's Award*"), 23 February 1999, para. 39.

[20] Canada refers to the 1999 IRA released on 19 July 1999 as the "Draft 1999 Report", and that published in November 1999 as the "1999 Report". Elsewhere in this report they are referred to as the "1999 IRA". See also footnote 3.

4.67 An ABARE report-in-progress assessed that Canada would be more competitive against domestic product and other importers in the supply of frozen salmon, than for fresh or chilled salmon.

4.68 With respect to the finding that there were arbitrary or unjustifiable distinctions in the levels of protection considered to be appropriate in different situations (between fresh chilled or frozen salmon on the one hand and on the other hand whole frozen herring for use as bait and live ornamental finfish) which resulted in a disguised restriction on international trade (Article 5.5 and second sentence Article 2.3), in addition to the measures applying to the salmon product based on a risk assessment, risk assessments were undertaken, *inter alia*, on the disease risks associated with whole frozen herring for use as bait and on the disease risks associated with live ornamental finfish. The risk assessments formed part of IRA's on non-viable salmonids and other non-viable marine finfish, and on live ornamental finfish that were undertaken in parallel. The risk assessment on live ornamental finfish was limited to those imported fish that are *not* prohibited entry by Australia's environmental laws.

4.69 The measures applying to salmonids entered into effect on 19 July 1999. The measures applying to non-viable marine finfish other than salmonids have been in effect from 1 December 1999. The measures on ornamental finfish are being progressively introduced from 1 December 1999.

4.70 As a result of the IRA process, restrictions on imports of whole, frozen herring for use as bait were significantly tightened. The Director of Quarantine decided that non-viable herring of the genus *Clupea* will generally be prohibited entry.

4.71 AQPM 1999/79 sets out the measures applying to non-viable non-salmonid finfish. Different measures apply to: consumer-ready product (Part A); all fish product of New Zealand origin (Part B); head-off eviscerated fish or fish further processed products not meeting criteria in Part A (Part C); and all other non-viable non-salmonid finfish (Part D). For herring bait and feed fish, end users have the option of importing against the standard conditions set out in Parts A, B or C, or of importing under permit subject to the conditions set out in Part D.

4.72 Whole round herring for use as bait may be allowed on the basis of importers making a scientific submission to AQIS. AQIS will then make an informed assessment of the quarantine risk presented by the proposal. Information in the submission must include:

- details of the product to be imported;
- waters in which the fish were farmed (if appropriate) and caught;
- intended end-use of the fish; and
- details of pre-export and post-arrival management that would mitigate quarantine risks associated with importation.

4.73 Legal action was required for the application of these measures. This is embodied in the *Quarantine Proclamation 1998* as amended. The date of effect of the amendments was 1 December 1999.

4.74 With regard to live ornamental finfish, as many species of live ornamental finfish are prohibited entry to Australia by virtue of the *Wildlife Protection (Regulation of Exports and Imports) Act 1982*, the risk assessment on live ornamental finfish was limited to those species which are specifically permitted entry under Schedule 6 of that Act.

4.75 Live ornamental finfish represent a special case in terms of disease prevalence and risk management. There is only limited scope for generic risk management comparable to arrangements applying to non-viable finfish. Diseases of live ornamental finfish may be localised, in many instances at premises level and disease status may alter rapidly. Diseases are also often species-specific. Risk management options for live fish are different from that for non-viable fish (e.g.

evisceration is not an option for a product whose commercial value is solely as a live fish). The effectiveness of measures is an important consideration. For live ornamentals, certification and permit systems make a significant contribution to risk management as well as other measures such as quarantine withholding periods and visual inspection.

4.76 The pre-arrival and post-arrival conditions presently attached to freshwater ornamental finfish are already rigorous and certification/permit conditions are far more onerous than those attached to the import of non-viable finfish. Simplistic and crude product comparisons of certification or product specification requirements, including on a numerical basis, are not scientifically sound and are not an appropriate formula for assessing the relative effectiveness of risk management between different products.

4.77 The IRA on live ornamental finfish identified four diseases in common between Canadian salmon and live ornamental finfish:

- *Aeromonas salmonicida* (typical) - goldfish only;
- *Aeromonas salmonicida* (atypical) - goldfish only;
- *Yersinia ruckeri* (Hagerman strain) - single finding in goldfish; and
- ENV - marine ornamental species only.

4.78 On 19 July 1999, the Director of Quarantine decided that additional quarantine measures should apply to the import of live ornamental finfish. The measures are generic in policy terms, but will have specific application in regard to species and disease prevalence (including at premises level). The additional measures, together with the necessary administrative arrangements, are being progressively introduced.

4.79 These arrangements, which reach down to the level of agent-specific certification and sampling, require a detailed sub-set of administrative procedures and practices, including in relation to approvals for private quarantine facilities and quarantine security. All administrative arrangements must be in accordance with Australia's domestic legal framework, including in regard to the delegated authority of individual AQIS officers. Other than in regard to live marine finfish (for which legislative amendment was required), no legal action was required to implement these measures. Legal authority for the delegation of quarantine decision-making is contained in QP 1998.

4.80 Therefore, Australia argues, it is clear that Australia has implemented. The measures applying to salmon and other non-viable marine finfish are in force. A certificate for the import of Canadian salmon has been approved and an import permit granted. This certificate is irrefutable evidence that Australia has removed the import prohibition on fresh chilled or frozen salmon from Canada and that the measures as described are being applied to fresh chilled or frozen salmon from Canada. The additional measures applying to live ornamental finfish were progressively introduced from 1 December 1999.

4.81 In regard to approvals for processing plants, the applications must come from the operators of the plants concerned. AQIS will respond to each application as received and will decide whether to authorize the plant against the risk management policies decided by the Director of Quarantine. To date, no applications have been received.

4.82 From a trade effects perspective, it is noted that the different dates of application for the measures on salmonids and for the other two product groups involve immediate trade liberalisation for salmonids and transitional periods for a movement to quarantine measures with potentially more trade-restrictive effect applying to the other two product groups. Consistent with SPS obligations, AQIS has taken into account factors such as shipping times, commercial contractual arrangements and, in the case of live ornamental finfish, the need for sufficient lead times to adjust to more complex administrative arrangements that will apply, including the need for approved post-arrival quarantine premises. In this context, attention is drawn to paragraph 2 of Annex B of the SPS Agreement:

> "Except in urgent circumstances, Members shall allow a reasonable interval between the publication of a sanitary or phytosanitary regulation and its entry into force in order to allow time for producers in exporting Members, and particularly in developing country Members, to adapt their products and methods of production to the requirements of the importing Member."

F. ARTICLE 5.1 OF THE SPS AGREEMENT

Canada

4.83 Canada argues that even if Australia has measures in existence, those measures are inconsistent with the SPS Agreement. The new policies that Australia has implemented or may implement under its various AQPMs are themselves inconsistent with the SPS Agreement. Australia's measures are not based on a risk assessment, contrary to Article 5.1

4.84 There are two elements to the obligation under Article 5.1 of the SPS Agreement. First, there must be a proper risk assessment or risk assessments on which it relies, within the meaning of Article 5.1 and Annex A, paragraph 4. Second, Australia's measures must be based on that risk assessment or those risk assessments.[21] In the present case, a proper risk assessment does not exist to support Australia's new measures. Even if it did, Australia's measures are not based on it.

4.85 Australia's 1999 Report is an impressive survey of the scientific knowledge on certain fish diseases but it is not a risk assessment within the meaning of Article 5.1 and Annex A:4 of the SPS Agreement. As Dr. Wooldridge confirms, the 1999 Report neither evaluates the likelihood of the establishment or spread of the disease or disease agents of concern to Australia, nor does it evaluate the likelihood of entry, establishment or spread according to the measures which Australia might apply.[22] Nothing in Australia's submissions refute this. Either failure is sufficient for the Panel to find that Australia maintains its new policies without a risk assessment, contrary to Article 5.1 and, by implication, Article 2.2 of the SPS Agreement.

Australia

4.86 Australia welcomes the clarifications provided by the experts of their views on the adequacy and appropriateness of the 1999 IRAs. The experts agreed on the integrity and transparency of the process. Australia engaged a large number of highly qualified aquatic science and risk management experts to ensure the integrity of the 1999 IRAs.

4.87 Dr. Brückner advised that Australia's import risk analysis on non-viable salmonids and non-salmonid marine finfish was "acceptable and scientifically justifiable". Dr. McVicar confirmed Australia's view about the limited applicability of quantitative risk analysis to regulatory decision-making on fish diseases generally and, in particular, the present case. Dr. McVicar concluded that he was satisfied with Australia's risk assessment and that the minor improvements that could be made would be unlikely to warrant any changes to Australia's conclusions.

4.88 In the original dispute, the Appellate Body considered that:

> "A proper risk assessment of this type must evaluate the likelihood, i.e. the probability, of entry, establishment or spread of diseases and associated biological and economic consequences as well as the likelihood, i.e. probability, of entry,

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[21] For example, in the original Panel Report in *Australia - Salmon*, the Panel found that even if the 1996 Final Report was a proper risk assessment, Australia's measure in respect of wild, ocean-caught Pacific salmon was not based on that risk assessment. In respect of other Canadian salmon, the Panel found that a risk assessment did not exist to support Australia's prohibition. The Appellate Body subsequently found that the 1996 Final Report was not a risk assessment within the meaning of Article 5.1.

[22] See, e.g. Dr. Wooldridge's Response to Question 1, para. 445 and 448.

> establishment or spread of diseases according to the SPS measures which might be applied".[23]

This is the legal test before the Panel. It is not one of the individual views of experts according to a preferred technique or standard. The SPS Agreement is not prescriptive about detailed techniques and methodology of a risk assessment. It would not function as a legal instrument if its legal obligations were to be hostage to fashions in risk assessment. The legal test is not one of whether Australia should or could have undertaken a quantitative risk assessment. Indeed as Dr. Wooldridge advised, it was unknown whether there would have been a different outcome if the risk assessment had been conducted in the way that she prefers.

4.89 The SPS obligation in regard to "techniques" is that a WTO Member should take into account those techniques developed by the relevant international organisations. The structure of the 1999 IRA comprises three components: hazard identification, risk assessment and risk management. This conforms with the OIE guidelines on import risk analysis as stated in the *International Aquatic Animal Health Code* (1997) (the "OIE Code") and the *OIE International Animal Health Code*.

4.90 The following diseases of Canadian salmon, for which an OIE standard of evisceration exists, involve risk management based on that standard:

- Piscirickettsia salmonis: all fish;
- IPNV: all fish, except juveniles; and
- VHS: all fish.

Canada

4.91 Canada contends that the 1999 Report does not meet OIE standards. According to Dr. Wooldridge, who helped to draft the standards in the 1999 OIE Animal Health Code upon which the Aquatic Animal Health Code is based, the 1999 Report does not meet those standards. Canada agrees. In Canada's view, the 1999 Report does not meet the requirements of either the 1999 draft OIE Code or the 1997 OIE Code[24] because it does not assess risk.

4.92 As Dr. Wooldridge made clear, the 1999 Report appears superficially to be a risk assessment but closer scrutiny reveals its inadequacies. Thus, the 1999 Report appears to contain information or elements that are required by the OIE Code, such as exposure assessments and release assessments, but this information has not been used in a full and transparent manner that enables an outsider to see how Australia arrived at risk conclusions. Among other things, significant information has been "systematically left out" in the exposure assessment section, and the exposure and release assessments were not integrated.[25] Thus, the 1999 Report does not satisfy, among other things, the fourth step of risk assessment (risk estimation) in the draft 1999 OIE Code.

4.93 The 1999 Report also does not consider the probability that the disease agents of concern will complete the full range of steps to become established or spread in Australia. The steps are specifically identified in the risk assessment section of the OIE Code.[26]

4.94 Canada notes that Australia argues that the proposed 1999 OIE Code makes clear that as a general principle, qualitative risk assessments are valid. This has never been in issue. The issue is whether the 1999 Report is a valid risk assessment. The problems that Canada and Dr. Wooldridge have identified in the 1999 Report relate not to whether Australia took a qualitative approach but the particular "methodology" Australia used. Thus, Canada's position that Australia could have relied

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[23] *Australia - Salmon* Appellate Body Report, para. 123.
[24] OIE Code (1997), Chapters 1.4.1 and 1.4.2. (Canada's Exhibit JJ).
[25] Panel Consultation with Scientific Experts, para. 442 of this report.
[26] OIE Code (1997), Article 1.4.2.1.

more on the New Zealand risk assessments or the Vose Report was not intended as an argument that Australia necessarily needed to do a quantitative risk assessment. Instead, it goes to the issue of whether Australia used the best available information. The use of the best available information is also a principle of risk assessment identified in the 1999 OIE Code.[27] At least one of the peer reviewers of the 1999 Report repeatedly advised that it would be highly relevant for AQIS to consider the results of its qualitative analysis and the proposed risk reduction measures in the light of the Vose and New Zealand risk assessments.

4.95 Dr. Wooldridge also stated that, like Canada, she too does not understand why Australia has not attempted a quantitative assessment even though it is not a requirement of the SPS Agreement. Dr. McVicar states that quantitative risk analysis is severely constrained with fish diseases due to the lack of adequate data in key areas. However, Dr. Wooldridge has noted that, "there was generally much more data in existence for almost any quantitative risk assessment than at first sight seemed likely to be available".[28]

4.96 Moreover, where data are unavailable for any given step in the risk pathway, a quantitative risk assessment can adopt the highly conservative approach of assuming a 100 per cent probability that that step will be completed. The Vose Report took precisely this highly conservative approach yet still concluded that the likelihood of the entry, establishment or spread of *A. salmonicida* and *Renibacterium salmoninarum* into Australia through the importation of Canadian, wild, ocean-caught Pacific salmon for human consumption was negligible.

4.97 Canada also notes that both the 1997 OIE Code and the proposed 1999 version of the OIE Code clearly emphasize the importance of commodity volume in assessing risk. Thus, the 1999 version considers it a principle of risk assessment that: "risk increases with increasing volume of commodity imported".[29] The 1999 Report ignores the effects of volume on risk, particularly in the case of bait and feed fish. Australia therefore cannot claim that the 1999 Report meets the standards of the OIE Code.

1. Evaluation of the likelihood of entry, establishment or spread of diseases and the associated consequences

Canada

4.98 The 1999 Report has accorded unjustifiable subjective weightings to the scientific evidence before it and has seemingly ignored its own conclusions as to the likelihood that specific sub-events would occur. The result is that its unrestricted risk estimates are inexplicably weighted against eviscerated salmon product. The 1999 Report cannot therefore be said to have adequately evaluated the likelihood of entry, establishment or spread of disease and the associated consequences as it is required to do under Article 5.1.

4.99 Although the probability terms used are defined in the 1999 Report, it is difficult if not impossible to understand the basis on which Australia applies these terms to event probabilities. This subjectivity problem is apparent in the absolute probabilities (e.g. "low", "moderate", "very low", "negligible") that Australia has chosen to assign to the likelihood of events occurring in respect of individual disease agents. It is also a problem in the relative probabilities Australia has assigned among disease agents or products. These failings are endemic to the document.

4.100 For example, Australia has found that (a) the incidence of pathogens entering the aquatic environment via human consumption of imported salmonids would be "extremely low"; (b) the titre of *A. salmonicida* in eviscerated imported product would be "extremely low"; (c) solid-waste and

[27] Draft OIE Code (1999), Article 1.4.2.3, para. 3.
[28] *Australia – Salmon* Panel Report, para. 6.54 (Dr. Wooldridge's Response to Question 2).
[29] 1999 Draft OIE Code, Article 1.4.2.3, para. 6.

liquid waste disposal pathways would reduce these already extremely low titres by "orders of magnitude"; (d) other pathways are essentially irrelevant; (e) exposure even to a "low" titre of *A. salmonicida* would need to be maintained for a prolonged period for infection to result; and (f) there is an absence of significant salmonid populations in most of Australia. It is therefore inexplicable that Australia would conclude, as it does, that the probability of susceptible fish being exposed to an infectious dose of typical *A. salmonicida* would be merely "low".[30]

4.101 Dr. McVicar's subsequent comments on *A. salmonicida* reflect his views on the likelihood of the *entry* of the disease agent into Australia. However, they do not address Canada's specific concern, set out in paragraphs 58 to 61 of Canada's First Submission, regarding Australia's estimate of the likelihood of disease *establishment*. In arriving at an estimate of the likelihood of disease establishment, Australia appears to have ignored its own conclusions regarding other steps in the pathway that are necessary preconditions for disease establishment.

4.102 There are similar discrepancies in the conclusions the 1999 Report reaches regarding the consequences of disease establishment. For example, Australia acknowledges that Australian salmonids are "routinely vaccinated to prevent disease due to *Vibrio anguillarum*" and that the consequences of the establishment of *Vibrio salmonicida (V. salmonicida)* could be mitigated by similar means. In the case of *A. salmonicida*, the Report notes the advice of Dr. McVicar that successful control methods, including vaccination, have significantly reduced the importance of *A. salmonicida* in Scotland.[31] It finds however, that in addition to increased costs, Australia's ""disease and chemical residue free' image could also be harmed". The Draft fails to reconcile this "image" with the reality of its control programme for *Vibrio anguillarum (V. anguillarum)*. The result is that it overstates the consequences of *A. salmonicida* introduction.

4.103 All risk assessments are to some degree subjective. Whether subjectivity will be an *actual* problem in a qualitative risk assessment will depend on how the qualitative terms are used. A qualitative risk assessment will not be too subjective when, at a minimum, it is sufficiently transparent that each conclusion follows logically from those that came before it and when one can have reasonable confidence in the levels of risk assigned. The 1999 Report fails on both counts. Dr. Wooldridge agrees. The 1999 Report failed to develop conclusions that follow logically from the sequence of previous conclusions, and systematically excluded the information regarding the pathways for disease release into the aquatic environment from its exposure assessment for each disease agent. It therefore did not evaluate likelihood of the entry, establishment or spread of the disease agents of concern.

4.104 Nothing in Australia's rebuttal identifies where the 1999 Report has *evaluated* the likelihood of the establishment or spread of the diseases of concern, rather than simply stating conclusions. The best that Australia can show in its rebuttal is that the 1999 Report determined that wastewater from processing plants *may* contain a higher concentration of pathogens and that *if* that wastewater bypassed sewerage systems or were directly discharged into waterways without treatment such pathogens could perhaps enter the aquatic environment in significant quantity.[32] Or it is speculated that significant high level exposure of susceptible fish to a significant titre of IHNV from, for example, regular discharge of untreated effluent from a salmon processing plant, could, possibly, result in the establishment of infection.[33]

4.105 One will search in vain for an evaluation of the likelihood or probability that any of these events will occur. As with the 1996 Final Report, the 1999 Report focuses in this case on *possibility*, not *probability*. For example, the 1999 Report does not say what is the likelihood that processing plants will contain a higher concentration of the pathogens of concern, or that these pathogens will

[30] 1999 Draft Report, sec. 4.7.1.2.
[31] *Ibid*., sec. 4.7.2.1.
[32] Australia's Comments on Responses by Dr. Wooldridge, paras. 17, 19.
[33] *Ibid*., para. 23.

then regularly be discharged directly into the aquatic environment without treatment, or that a susceptible host will be present.

4.106 Nor does the 1999 Report consider the probability of the full range of steps that must be completed in order for a pathogen of concern to become established or spread in Australia. The steps are specifically identified in the risk assessment section of the OIE Code.[34] Yet the 1999 Report does not evaluate these probabilities for the disease agents of concern.

4.107 By contrast, the Introduction to the 1999 Report does reach conclusions on the establishment and spread of aquatic disease agents generally. It concludes that the incidence of pathogens even entering the aquatic environment via the human consumption of imported salmonids or marine finfish would be extremely low[35]; that wastewater would greatly dilute and reduce the loads of any pathogens present; and that the probability of pathogens even entering the aquatic environment via a solid waste pathway would be very low. The Introduction dismisses other pathways as not significantly increasing the probability in the risk analysis overall.[36]

4.108 As Dr. Wooldridge notes, the foregoing information and the conclusions drawn from it do not appear to have been taken into account in the individual exposure assessments for specific diseases in salmonids. Had Australia done so, it might well have concluded in the 1999 Report that for each disease, the overall probability of even aquatic exposure to salmonid product was exceptionally low at the highest.

4.109 Dr. McVicar states that the 1999 Report has made a valid assessment of the probability of the establishment or spread of each disease of concern in Australia. However, he does not explain how or why he reaches this conclusion. He states, for example, that "the level of viable infectious agents likely to be remaining in gutted carcasses in the parts usually removed and disposed of before human consumption was considered by Australia to warrant additional safeguards". However, he does not address Dr. Wooldridge's concern that Australia has not attempted to specify at what levels these infectious agents would remain. In addition, as Dr. Wooldridge notes, even if imported salmonid product is infected, the Report identifies the very low probabilities such product will enter the aquatic environment but does not consider this in reaching its conclusions on establishment or spread. Nothing in Dr. McVicar's response contradicts Dr. Wooldridge's finding.

Australia

4.110 The 1999 IRA evaluated the quarantine risk with respect to those specific disease agents identified in hazard identification as warranting further consideration. Chapter 4 assessed the unrestricted risk posed by each disease agent in accordance with the OIE standard: (1) release assessment, (2) exposure assessment, and (3) consequences assessment. A risk evaluation matrix was used to determine whether the quarantine risk posed for each disease agent met Australia's ALOP.

4.111 The 1999 IRA considers the factors relevant to the release assessment, including disease prevalence and titre of disease agent. Relevant factors considered were in accordance with the OIE Code:

- the probability of fish being infected with a disease agent in the exporting country;
- the probability of the infective agent being present in particular tissues imported; and
- the probability of the infective agent surviving pre-import conditions or treatment.

The 1999 IRA considered a broad range of salmonid species, countries of origin, production systems, disease agents, types of salmonid product and methods of treatment. Quantitative data on many of

[34] OIE Code (1997), Article 1.4.2.1.
[35] 1999 Report, sec. 1.7.3, p. 38.
[36] *Ibid.*, sec. 1.7.6, p. 52.

these factors is lacking. The risk analysis was based largely (but not exclusively) on *qualitative information*.

4.112 The 1999 IRA recognises the importance and influence of the many variables to the release assessment in the general discussion (pages 14-23) and in the risk assessment of specific disease agents in Chapter 4. For each disease agent, the key findings include information on prevalence and the distribution of disease agents in various tissues. This influences the extent to which risk management measures would reduce the probability of an agent occurring in imported product.

4.113 Canada is seeking to imply that the validity of a qualitative risk assessment depends on whether it was possible to conduct a *quantitative* risk assessment. Canada claims that the 1999 IRA's evaluation was "highly subjective" and the "reasonableness" of Australia's probability assignment goes to the validity of qualitative vs quantitative risk assessments.

4.114 In her responses to Questions 1 and 2, Dr. Wooldridge appears to be suggesting that a qualitative risk assessment, which compares risk in different diseases, cannot be valid *unless* accompanied by *quantitative analysis*. By definition, a qualitative risk analysis will use *qualitative* terms in assessing risk. Dr. Wooldridge's comments go towards the validity of qualitative, as compared to quantitative, risk assessments.

4.115 Canada's and Dr. Wooldridge's contentions are not supported by international and WTO practice. International practice, as reflected in the OIE International Animal Health Code (1999), affirms the equal validity of qualitative and quantitative methods. In addition, the Panel and Appellate Body in the current dispute stated that likelihood may be expressed either quantitatively or qualitatively. Neither are Canada's and Dr. Wooldridge's contentions supported by Dr. Wooldridge's own evidence to the original Panel and the advice of Dr. McVicar and Dr. Brückner.

4.116 Consistent with the OIE Code, Australia conducted the 1999 IRA on a qualitative basis. In the absence of definitive, quantitative data on factors relevant to quarantine risk, AQIS applied appropriately conservative professional judgment based on available scientific information and the advice of experts in relevant fields. A quantitative approach would *not* have provided a more objective evaluation of risk as expert judgment would still be required to address data gaps.

4.117 Canada's assertions that prevalence is not translated into risk for *A. salmonicida* (typical) and of anomalous relative probabilities in regard to IPN and ISA, is rejected by the scientific basis of the 1999 IRA process. This is set out in the hazard identification, risk assessment and risk management Chapters of the 1999 IRA. The risk assessment covering Canadian salmon does not address viral encephalopathy and retinopathy virus (VERV) which is not a disease agent reported in salmonids; nor is it an exotic disease to Australia.

4.118 The risk from *V. salmonicida* was not considered to warrant specific risk management measures. *V. anguillarum* is not an exotic disease and therefore outside the scope of the risk assessment. In addition, both *V. anguillarum* and *V. salmonicida* may be managed through the use of bath vaccinations. The efficacy of vaccination is high and protection enduring. *A. salmonicida* is managed with oil adjuvent vaccines which must be individually injected into the body cavity of each fish. This vaccine has adverse effects including the development of lesions in the carcass, increased cost-of-production and reduced growth rates. While the efficacy is good, it is not as high as for *V. anguillarum* and *V. salmonicida* vaccines, nor is protection as enduring. Recognised differences in the administration, efficacy and adverse effects of vaccination between *V. anguillarum* and *A. salmonicida* were taken into account in the risk assessment.

4.119 Consideration of previous import volumes and time periods is *not* a requirement of a qualitative risk assessment. The absence of disease incidents associated with frequent large volume commodity imports does not indicate that the material can pose no risk. It only indicates that the

import has had a low risk in relation to the *specific materials and conditions* of the previous importations.

4.120 In summary, the 1999 IRA evaluates the likelihood i.e. probability, of entry, establishment or spread of the diseases of concern, and the associated consequences. The use of qualitative terms in assessing likelihood is consistent with a qualitative risk assessment and is valid with regard to the scientific analysis.

2. Evaluation of likelihood … according to the SPS measures which might be applied

Canada

4.121 The 1999 Draft Report concludes in respect of certain disease agents that the "unrestricted" estimate of the risk of even eviscerated product is too high to permit importation. It therefore was incumbent upon the Report to evaluate the likelihood of the entry, establishment and spread of those disease agents according to further risk management measures that might be applied. It has not done so. Instead, the Report simply reviews a number of additional pre- and post-importation risk mitigation measures and reaches the identical conclusion for each of these disease agents: "… the implementation of these measures singly would reduce risk but not to the extent required to meet Australia's ALOP. The implementation of all measures listed above would meet Australia's ALOP …".[37]

4.122 Australia has no basis for reaching this conclusion, because the 1999 Draft Report does not substantively evaluate the relative risks associated with these different measures. There is nothing in the 1999 Report to indicate that single measures were evaluated as to their efficacy in reducing the likelihood of the entry, establishment or spread of the disease agents in question to Australia's appropriate level of protection.

4.123 For example, in respect of IHNV, the 1999 Draft Report concludes that "the probability of IHNV becoming established in Australia as a consequence of the unrestricted importation of eviscerated salmonids, *including juveniles and sexually mature fish* would be very low".[38] [emphasis added] It also finds that the consequences of such disease establishment would be of "moderate to high significance". The Report concludes, presumably on the basis of the "risk evaluation matrix" in section 1.2.4, that additional risk management measures are warranted.[39]

4.124 Having recognized that IHN is primarily a disease of farmed juvenile salmonids, it would obviously have been appropriate for the 1999 Draft Report to consider whether limiting imports to adult fish would reduce the probability of disease establishment. According to Australia's "risk evaluation matrix", a one-step reduction from "very low" to "extremely low" would satisfy Australia's appropriate level of protection. However, the Report does not consider whether a restriction on the importation of juvenile salmonids would achieve this. Instead, it sets out nine possible risk mitigation measures for IHNV.[40] It then asserts, without any evaluation of probability, that the implementation of any one of these measures would not reduce risk to the extent required to meet Australia's appropriate level of protection. It concludes, again without any evaluation of probability, that the implementation of all nine measures would meet Australia's appropriate level of protection.

4.125 Australia states with respect to IHNV that it has evaluated risk according to the measures that might be applied. It states:

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[37] 1999 Draft Report, secs. 5.3.1.7 (IHNV), 5.3.2.4 (IPNV), 5.3.3.6 (ISAV), 5.3.4.7 (*A. salmonicida*), 5.3.5.7 (*R. salmoninarum*), 5.3.6.4 (*Y. ruckeri*), and 5.3.7.7 (*M. cerebralis*).

[38] *Ibid.*, sec. 4.1.1.2.

[39] *Ibid.*, sec. 4.1.3.

[40] *Ibid.*, sec. 5.3.1.7.

> "For example, a restriction on juvenile and sexually mature fish would address risk factor 2 for IHNV. Such a restriction would not address risk factors 1, 3, 4, 5 or 6 and would not achieve Australia's ALOP for salmon."[41]

What Australia has failed to do, however, is to consider the likelihood of entry, establishment or spread if juvenile and sexually mature fish were restricted. According to the 1999 Report, "risk factor 2" is that the risk associated with juvenile fish and sexually mature fish "would be higher than that associated with commercially harvested, market-size salmonids".[42] It may therefore be that restricting imports of juvenile and sexually mature fish would be sufficient to achieve Australia's appropriate level of protection regardless of whether additional measures were imposed to address other risk factors.

4.126 Similarly, the 1999 Report finds that inspection and grading would both detect fish clinically diseased with IHN and would identify juvenile and sexually mature fish. It concludes: "This would substantially address risk factors 2 and 3".[43] Inspection and grading is undertaken in the ordinary course for fish for human consumption. It is a minimally trade restrictive requirement. Again, however, the 1999 Report does not evaluate the likelihood of the entry, establishment or spread of IHNV if inspection and grading were required, alone or in conjunction with restrictions on juveniles and sexually mature fish. Nor has the 1999 Report done so for any of the other disease agents purportedly of concern to Australia.

4.127 At paragraph 115 of its First Submission, Australia contends that:

> "For each disease agent, AQIS evaluated each risk management measure to determine the degree to which it would address the key risk factors associated with that agent. From this analysis, one measure or a combination of measures was determined as necessary to reduce the risk posed by that disease agent to meet Australia's ALOP."

Canada was unable to find any indication in the 1999 Report that any measure or combination of measures has actually been assessed specifically with regard to the likelihood of bringing the assessed risk within Australia's appropriate level of protection. Canada's position is confirmed by the response of Dr. Wooldridge to the Panel's question 1 to the experts.[44]

4.128 Dr. McVicar suggests that "[t]here is some but limited [sic] relevant quantified data available of the decrease in the level of pathogen present in the commodity after preparation to a consumer ready state, supporting the logic that removal of inedible or low value parts will reduce (but not eliminate) the risk of this material coming into contact with waters containing susceptible fish." He adds that "On this basis Australia makes a judgement on their likely effectiveness in reducing this risk which is both transparent and logical". Dr. McVicar does not explain how this judgment is transparent nor, more to the point, where Australia has evaluated the relative effectiveness of risk reduction measures. Certainly, Dr. Wooldridge was unable to find this evaluation.

4.129 Drs. McVicar and Brückner also recognize that Australia has offered no justification for the 450 grams threshold. It therefore is difficult to understand how they could conclude that Australia somehow evaluated the likelihood of the entry, establishment or spread of disease according to the measures which might be applied.

4.130 In the case of salmonids, Australia assumes that imports will be eviscerated but that for certain diseases, evisceration will not achieve its appropriate level of protection. Even if this were the case, no salmon exported from Canada for human consumption will ever merely be eviscerated. In

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[41] Australia's First Submission, para. 117.
[42] 1999 Report, sec. 5.3.1, p. 204.
[43] *Ibid.*, sec. 5.3.1, p. 205.
[44] Panel Consultation with Scientific Experts, para. 448.

addition to evisceration, in all cases it will be thoroughly washed, inspected and graded and in the case of farmed salmon (which includes all Atlantic salmon) it will always be bled. These measures collectively, and many of them individually, will reduce any residual risk beyond evisceration.

4.131 However, Australia does not evaluate the likelihood that the full range of primary processing in the exporting country or any of the individual steps included in primary processing such as washing or inspection, will achieve its appropriate level of protection. Instead, Australia simply concludes that additional, more trade restrictive measures are required to achieve its appropriate level of protection.

Australia

4.132 The 1999 IRA evaluates the likelihood of entry, establishment or spread according to the SPS measures which might be applied. The risk management measures necessary to achieve Australia's ALOP were determined on a disease-by-disease basis (Chapters 5 and 8 of the 1999 IRA). AQIS identified a range of risk management measures based on industry procedures, the operations of competent authorities and their interactions with industry, and common procedures in the international trade for animals and animal products.

4.133 In identifying these measures, AQIS considered matters such as practicability and ease of implementation, cost of compliance, cost-effectiveness and impact on trade, subject to the overriding requirement that measures reliably contribute towards achieving Australia's ALOP.

4.134 For each disease agent, AQIS evaluated each risk management measure to determine the degree to which it would address the key risk factors associated with that agent. From this analysis, one measure or a combination of measures were determined as necessary to reduce the risk posed by that disease agent to meet Australia's ALOP.

4.135 It was found that for no disease agent was a single measure sufficient to reduce the risk to achieve the ALOP. Chapters 4 and 5 of the 1999 IRA concluded that for specific diseases of salmonids, implementation of the measures singly would reduce risk, but not to the extent required to meet Australia's ALOP. Accordingly, a combination of measures (not identical in all cases but based on the risk factors for the particular disease agent) was applied that would achieve the ALOP.

4.136 Canada's claim rests on an assertion that the 1999 IRA "does not substantively evaluate the relative risks associated with these different measures", for example, IHN, *R. salmoninarum* and *A. salmonicida*. Both Dr. Brückner and Dr. McVicar advise that the 1999 IRA evaluates the likelihood of risk according to the measures which might be applied.

4.137 The 1999 IRA examined the influence of individual measures singly or in combination, and applied them as warranted. The risk management measures were not applied as a suite of measures "across the board" i.e. for all imports of eviscerated salmonids. This is demonstrated by the measures applied for ISAV and *A. salmonicida*.

3. Measures based on a risk assessment

Canada

4.138 Even if the 1999 Report did satisfy the three requirements of a risk assessment under the SPS Agreement, which it does not, Australia’s trade-restrictive salmonid measures are not based on the 1999 Report as required by Article 5.1.

4.139 Australia’s measures are based on a draft. AQPM 1999/51 is titled Final Reports of Import Risk Analyses on Non-Viable Salmonid Products, Non-Viable Marine Finfish Products and Live Ornamental Finfish and Adoption of New Policies. However, the documents that Australia has

prepared thus far are not "Final" at all. As already described, they are drafts for "public comment" or "public consultation".

4.140 In the original Panel process, Australia explained that previous such drafts, the May 1995 and May 1996 Draft Reports, were merely "working documents prepared as a means of focusing public attention and debate on proposed import access requests".[45] Accordingly, Australia insisted (with respect to the May 1995 Draft Report), that it "has the status of a public discussion paper and has no official status as such".[46]

4.141 According to the Appellate Body, "[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".[47] The "Final Reports" to which AQPM 1999/51 refers did not exist at the time that Australia's policies were purportedly based on them. The "rational relationship" requirement of Article 5.1 cannot possibly be satisfied by the irrational relationship between the measures and the then non-existent "Final Reports" on which they are purportedly based.

4.142 Despite its position before the original Panel, Australia now insists unabashedly that "There is no legal significance attached to a 'draft' and 'final' version of an IRA, as compared to the legal difference between draft recommendations and decisions by the Director of Quarantine."[48] In any event, the relationship between the measures and reports, draft or final, is not apparent.

4.143 Even if one were to now accept Australia's insistence to this Panel that the 1999 Draft Report "embodies a risk assessment", Australia's salmonid measures would still not be "based on" the 1999 Report in either its draft or final incarnations.

4.144 The test of whether a measure is "based on" a risk assessment as required by Article 5.1 is a substantive requirement that there be a "rational relationship between the measure and the risk assessment".[49] In the present case, there is no rational relationship between Australian requirements that salmonids may not be released from quarantine unless they are "consumer-ready" and the 1999 Report, even if the 1999 Report were a risk assessment.

4.145 As the experts have recognized in their responses to the Panel's questions, there is no scientific justification in the 1999 Report for the 450 gram threshold for eviscerated, headless product and for skin-on product.[50] Nor is there any scientific justification in the 1999 Report for the requirement that fins and the belly flap be excluded from product to be sold as "consumer-ready". There is therefore no rational relationship between the 1999 Report and the "consumer-ready" product requirements that Australia has imposed on Canadian salmon. Accordingly, the "consumer-ready" product requirements are not based on a risk assessment even if the 1999 Report were a risk assessment, and are maintained by Australia inconsistently with Article 5.1 and by implication, Article 2.2 of the SPS Agreement.

4.146 The purpose of a risk reduction measure is to reduce assessed risk to an acceptable level. In the present case, the risk at issue is the establishment and spread of the disease agents of concern to Australia. According to the 1999 Report, the concern regarding this risk is limited to one pathway: the regular discharge by fish processing plants of untreated wastewater into the aquatic environment. The 1999 Report essentially dismissed other pathways and sources of fish waste as insignificant.

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[45] Australia's First Submission, para. 21.

[46] *Ibid*., para. 377.

[47] *EC Measures Concerning Meat and Meat Products (Hormones) ("EC – Hormones"),* Report of the Appellate Body, (WT/DS26/AB/R, WT/DS48/AB/R), 16 January 1998, para. 193.

[48] Australia's First Submission, para. 50.

[49] *EC – Hormones* Appellate Body Report, para. 193.

[50] See the Experts' Responses to Questions 7 and 8.

4.147 The 1999 Report considers the likelihood of aquatic pathogens even entering the aquatic environment to be extremely low when salmonid fish waste such as the head, fins, bones and skin are disposed of by households or in the HRI trade. This extremely low probability is even before one considers whether those pathogens that may enter the aquatic environment will come into contact with a susceptible host at a sufficient dose and by a suitable route to cause infection, which, recall, is an analysis that the 1999 Report does not undertake. The 1999 Report therefore offers no rational basis for Australia's insistence that salmonid imports, including Canadian salmon, can only be sold to the HRI trade and consumers in what Australia calls "consumer-ready" form.

4.148 A rational solution to address the alleged risks of untreated waste discharges from processing facilities would be to keep salmonid imports away from commercial processing plants that do not adequately treat their waste rather than away from wholesale, retail and HRI markets that may want to consume such product. Nor is there any rational basis for excluding head-on product from processing plants that do have adequate waste treatment. Moreover, if Australia considers the concentration of salmonid wastes at processing plants to be a potential concern, there is no rational explanation why head-off, eviscerated salmon may be processed into so-called "consumer-ready" form by having the skin removed at processing plants, where wastes may be concentrated, but not sold to consumers or the HRI trade, whose waste has been deemed to constitute a minimal risk.

4.149 In attempting to defend its product-form requirements, Australia devotes considerable effort to the case that there is a market for products in "consumer-ready" form. Australia's contentions are both irrelevant and misleading. In the first place, the issue is not whether as Australia contends, there are significant commercial opportunities for so-called "consumer-ready" product but whether Australia has, without justification, excluded Canadian products from other Australian markets, real or potential. The level of impairment that Canada has suffered by Australia's unjustified exclusion of non-"consumer-ready" product may be a legitimate issue in the context of an arbitration under Article 22.6 of the DSU, but it is irrelevant in the present context. Even if there were no existing demand at all for head-on or skin-on salmon, Australia could not, without justification, prevent Canadian exporters from attempting to create a new market.

4.150 Second, Australia's own evidence contradicts its assertions. Thus, the ADVS study, to which Australia has referred, states that the bulk of Australia's own Atlantic salmon exports take the form of gilled and gutted, but head-on, fish.[51] The ABARE Report, which Australia has submitted as Exhibit U, states that in Australia's domestic market, "Around half of farmed salmon production is sold as whole fresh fish which are gutted and gilled".[52] These facts are not unique to Australia. Canada's principal salmon exports are not small fillets and steaks or skin-off product but whole eviscerated salmon, often head-on and often gills-in. Dr. McVicar confirmed in his oral testimony that whole, eviscerated salmonids are often traded internationally. Evidence submitted confirms that salmon skin is often highly sought as a delicacy[53], that salmon is sold at retail in skin-on pieces larger than 450 grams and that eyes, gills and skin are important indicators of freshness in salmon product.

4.151 Canada also gives evidence that for many cooking methods skin-off salmon is less desirable, limits options and is wasteful, that many consumers consider salmon skin to be a delicacy, and that, according to Graham Kerr, the well-known international culinary consultant, the preferred product in the HRI sector is whole head-on or head-off product. Mr. Kerr stated that he agreed with Canada's

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[51] Aquaculture Development Veterinary Services Pty. Ltd., *Final Report – AQIS Consultancy on Routes for Exposure of Aquatic Animal Products Intended for Human Consumption* (May 1999), sec. 10.2.4.3, p. 142. (Referred to in Australia's Comments on Responses by Dr. Wooldridge. Available on the AQIS website at www.aqis.gov.au/docs/anpolicy/ira1.htm, listed under prawns and products, reference documents.)

[52] A. Heaney, A. Cox and A. Abdalla, Salmon Imports Into Australia: Potential Market Penetration: ABARE report prepared for Portfolio Policy and International Division, Agriculture, Fisheries and Forestry – Australia (Canberra: ABARE, October 1999), p. 8.

[53] See, e.g. Canada's Exhibit CC.

position that requiring imported salmonids to be processed to 450 gram pieces will adversely affect the competitiveness of any imported product.

4.152 Australia's position before this Panel is at odds with the statement of its own Trade Minister, Mr. Vaile, that the AQIS requirements may make Canadian exports unviable and uncompetitive against Australian product.[54]

4.153 Australia's measures close its market to the very product form in which most of Canada's salmon export trade takes place, and the product form that would compete directly with much of Australian production.

Australia

4.154 For a measure to be based on a risk assessment requires that the measure must be sufficiently supported or reasonably warranted by the risk assessment. There must be a rational relationship between the measures and the risk assessment.[55]

4.155 The structure of the 1999 IRA - hazard identification, risk assessment and risk management - makes clear the essential link between risk assessment and the risk management measures adopted. There is a rational relationship between the measures and the 1999 IRA. The measures are based on the 1999 IRA. This is confirmed by the experts advising the Panel.

4.156 The requirements relating to consumer-ready product address the conclusions of the exposure assessment on commercial processing of imported product. The 1999 IRA concludes that the probability and nature of exposure associated with household or hotel/restaurant consumption meets Australia's ALOP. However, risk associated with commercial processing of head-off eviscerated salmonid product do not.

4.157 Paragraph 5.2.2 of the 1999 IRA describes disease risks associated with commercial processing. The commercial processing of imported salmonids could generate a significant volume of solid or liquid waste at the premises' point of discharge. Continuous long-term release of untreated waste at the premises' point of discharge could result in infective material building up to a biologically significant level in the aquatic environment.

4.158 To control risk associated with commercial processing, AQIS applies controls over commercial plants processing imported salmonid products with regard to location, waste disposal and related matters. To ensure that imported salmonids were not commercially processed in non-approved premises, only consumer-ready product will be permitted to be released from quarantine. Consumer-ready product is product which is ready for consumption/use by the end-user, or product which if further processed would not generate significant quantities of waste products of quarantine concern.

4.159 The 1999 IRA identified that some disease agents are associated with skin. For skinless fillets, commercial processing for consumer sale would generate minimal waste. Skinless fillets of any weight would be "consumer-ready". For skin-on fillets of greater than 450 grams, commercial processing would generate significant quantities of waste, for example from processing into skinless fillets.

4.160 "Consumer ready" addresses two distinct issues: the scientific basis for risk management measures; and the practical effectiveness of a measure. "Consumer-ready" cannot be examined independently of the risk management measures applied to processing.

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[54] Canada's Exhibit A.
[55] *EC – Hormones* Appellate Body Report, paras. 186, 193.

4.161 In summary, the 1999 IRA identified as the primary concern the release of waste (skin, fins, flaps, bones, etc.) into the aquatic environment from commercial processing of imported product. Product with skin-on in pieces greater than a consumer-ready portion is likely to be subject to further commercial processing in Australia. This would produce significant concentrations and volumes of waste material that would present an unacceptable risk of biologically significant numbers of organisms capable of causing disease in salmon being released into the aquatic environment. Commercial processing must take place in approved premises that are required to dispose of wastes in a biosecure manner.

4.162 Therefore it can be concluded that the 19 July measures are based on the 1999 IRA which embodies a risk assessment. There is a rational relationship between the measures and the risk assessment.

4.163 With respect to certification for ISA, Australia's 1999 IRA on salmonids does not specify the exact meaning of the phrase "officially suspected" since it would not be practical to do so: administrative arrangements vary between countries, having regard to each competent authority's regulatory arrangements (e.g. for health surveillance and the provision of health certification). What constitutes "official suspicion" is normally agreed between the competent authorities of the exporting and importing countries in the course of finalising certification arrangements.

4.164 After finalising the risk analysis and in the course of consultations with Canada on health certification, Australia became aware of additional scientific information relevant to "officially suspected" and the provision and scope of this certification in practice. In light of new information of risk factors of ISA, AQIS proposed an amended form of certification. Canada raised no technical or scientific concerns on the amended form. The United States has also agreed to a similar certification statement.

G. ARTICLE 5.5

Canada

4.165 Even if Australia's new policies were implemented, all three elements for a violation of Article 5.5 of the SPS Agreement would still be present.

Australia

4.166 In the original dispute, the measures on fresh chilled or frozen salmon from Canada were found to be inconsistent with Article 5.5 specifically in relation to measures applying to whole frozen herring for use as bait and to live ornamental finfish. In order to implement the DSB recommendations, Australia undertook risk assessments that addressed all three product groups. The 1999 IRAs were conducted in parallel and on the basis of common methodology and risk assessment techniques. The mandate of an Article 21.5 panel is limited to an examination of the measures applying to these three product groups. It does not extend to comparisons with *other* products and *different* diseases.

1. Different appropriate levels of protection in different situations

Canada

4.167 According to this Panel and as confirmed by the Appellate Body, different situations can be compared under Article 5.5 if they involve either a risk of entry, establishment or spread of the same or a similar disease or a risk of the same or similar associated potential consequences.[56] There are at least two such comparable situations in the present case. One is the levels of protection reflected in

[56] *Australia – Salmon* Panel Report, para. 8.117; *Australia – Salmon* Appellate Body Report, para. 146.

Australia's treatment of imported, dead salmonids as compared to its treatment of imported, dead non-salmonids and live ornamental fish. The other is the levels of protection reflected in Australia's treatment of imported dead salmonids as compared to its treatment of dead domestic fish, both salmonids and non-salmonids.

4.168 The same or similar disease agents are VHSV, pilchard herpesvirus and other bacterial fish pathogens.[57] The same or similar associated biological or economic consequences are the consequences of a VHS outbreak for Australian fish, including salmonids, the consequences of other disease outbreaks caused by the introduction of other bacterial fish pathogens, and the consequences of the introduction of a disease outbreak affecting Australian pilchards, such as the huge pilchard die-off associated with what may have been an introduced herpesvirus and which has devastated Australia's domestic pilchard industry.[58] Thus, the first element for a violation of Article 5.5 is present.

Australia

4.169 The legal tests as stated by the Appellate Body are:

- Article 5.5 does not establish a legal obligation of consistency of appropriate levels of protection; nor is the goal absolute or perfect consistency. It is only arbitrary or unjustifiable inconsistencies that are to be avoided.[59]
- "Different situations" can only be compared if they involve *either* a risk of entry, establishment or spread of the same or similar disease *or* a risk of the same or similar associated potential biological or economic consequences.[60]
- "Different situations" can only be compared if they are *comparable*, i.e. they present some common elements sufficient to render them comparable. [61]

As demonstrated in the 1999 IRA's, Australia's response to Question 26 and the experts' comments on Question 10, it cannot be assumed that:

- *one disease* in common would translate to the *same risk*;
- the existence of *one disease* in common would warrant the *same measure*, either at disease or product level; and
- comparisons could be made on the basis of simplistic charts which list the totality of measures applied at *product level.*

4.170 Australia has provided evidence that will enable the Panel to go beyond the simplified comparisons of its original examination. The Panel is therefore in a position to conduct its examination on the basis of:

- those *diseases in common* referred to by Canada in relation to salmon, whole frozen herring for bait and live ornamental finfish;
- the *relative risks* to salmonids and other fish in Australia associated with those diseases, taking into account the risks associated with prevalence and end usage, balanced against the general principle that risk of transmission is greater within a species or group of fish;

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[57] Canada's First Supplementary Submission, paras. 18-19.

[58] See *ibid*., para. 23 and "Salmon producers demand disease guarantee," ABC News Online, PM – Tuesday, July 20, 1999 6:10, from http://abc.net.au/pm/s37811.htm (Canada's Exhibit A).

[59] *EC – Hormones* Appellate Body Report, para. 87.

[60] *Australia - Salmon* Appellate Body Report, para. 146.

[61] *EC – Hormones* Appellate Body Report, para. 217.

- the *individual* risk management measures determined against those diseases in common between the three product groups, including the assessments addressing the risk on an end usage basis ; and
- as *counterfactual elements,* the risk management measures determined for diseases of salmon which are not in common with the other two product groups.

2. Distinctions in levels of protection in different situations

Canada

4.171 According to the Panel Report, Australia has determined its appropriate level of protection to be a "high or 'very conservative' level of sanitary protection aimed at reducing risk to 'very low levels'".[62] It appears from Australia's statements and policies that what Australia considers "acceptably low" or "very conservative" for other products it does not consider low enough or conservative enough for imported salmonids.

4.172 There is a widespread scientific consensus that bait and feed fish and live fish are a higher quarantine risk than dead, eviscerated fish. This is because they have not undergone the many risk-reduction steps such as inspection and evisceration to which dead eviscerated fish for human consumption are subjected. In addition, the pathways for disease transmission are direct. Potentially infectious bait and feed fish are deposited directly into the environment for the purpose of being consumed by other fish. Live ornamental fish may also be deposited whole into the aquatic environment.[63] Thus, the experts consulted by the original Panel were able to say that products such as bait fish represented a higher quarantine risk than salmon products.

4.173 However, Australia will continue to permit the unrestricted entry of live ornamental fish and continued until December 1999 to permit the unrestricted entry of non-salmonids, including bait fish.[64] During this time, Australia strictly controlled the entry of dead, eviscerated salmonids for human consumption. As the Panel and the Appellate Body found, this indicates that there remains a "rather substantial" difference in Australia's appropriate level of protection for non-salmonid products such as bait fish and live ornamental finfish on the one hand, and dead, eviscerated salmonids on the other.[65]

4.174 Moreover, the volume of imported product is an extremely important component of risk.[66] Whereas Australia estimates in the 1999 Draft Report that it might import 5,000 tonnes of dead, eviscerated salmonids[67], in one year it imports approximately ten times as much bait.[68] Because the risks from bait fish are significantly higher than from eviscerated salmonid products, Australia's risk exposure under a "transition" period of even four months will be equivalent to significantly more than four years of salmonid imports.

4.175 During the "transition" period for live ornamental fish, Australia will have imported millions of live fish. Imports of live fish are a well-documented source of disease introductions. By contrast, there has never been a documented case of the introduction of disease from the importation of dead, eviscerated salmonids or any other dead, eviscerated fish. From this it can reasonably be inferred that

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[62] *Australia – Salmon* Panel Report, para. 8.107.
[63] *Ibid*., footnote 387.
[64] AQPM 1999/64.
[65] *Australia – Salmon* Appellate Body Report, para. 164.
[66] *Australia – Salmon* Panel Report, para. 4.141.
[67] 1999 Draft Report, sec. 1.6.2.2 (b).
[68] According to AQPM 1999/51 (p.2), in 1997-98, Australia imported approximately 47,000 tonnes of fish "for other purposes, particularly bait". In addition, it imported 6.5 million live ornamental fish and 56,000 tonnes of edible non-salmonid fish. Moreover, the 5,000 tonne estimate for salmonid imports is probably significantly overstated.

the risk Australia has chosen to accept during this "transition" period is equivalent to that posed by many years of eviscerated salmonid imports.

4.176 The "transition periods" therefore indicate, first, that Australia has not taken measures to comply with the recommendations and rulings of the DSB and second, that even if the policies Australia has announced somehow constitute "new measures", under those new measures Australia continues to apply different appropriate levels of protection to non-salmonid and live ornamental fish imports than to dead, eviscerated salmonids.

4.177 Australia asserts that: "The first element of Article 5.5 does not require that the measures must enter into effect on the same date".[69] Australia offers no basis for this. However, elsewhere in its First Submission, Australia argues that commercial and administrative factors such as shipping times, contractual arrangements and the need to amend QP 1998 entitle it to postpone implementation of its new policies for non-salmonid and live ornamental finfish.[70] These factors do no such thing. The arbitrator gave Australia until 6 July 1999 to comply with the DSB's recommendations and rulings. Australia's obligation to comply by 6 July included compliance with Article 5.5.

4.178 Immediate compliance, under Article 21.3 of the DSU, may be impracticable for reasons such as those Australia raises with this Panel. However, in Australia's case, the alternative, reasonable period of time, expired almost five months ago. Australia has blatantly disregarded the ruling of the arbitrator under Article 21.3 and has unilaterally accorded itself months or years of additional time to take the measures that it claims will bring it into compliance.

4.179 Moreover, in the course of the arbitration on the reasonable period of time for Australia's compliance, Australia did not raise the commercial factors it now cites for its delay. Its current position that its new policies for non-salmonids and live ornamental finfish require amendments to QP 1998 contradict its statements to the arbitrator that its measure could be brought into conformity without amending QP 1998.[71]

4.180 If Australia considered itself unable to comply by 6 July 1999, it could have entered into negotiations to compensate Canada until it could fully implement. Instead, Australia baldly asserted its compliance, forcing Canada to request the establishment of this Panel. If this Panel were to accept Australia's claims with respect to Article 5.5 and were to countenance Australia's delays, it would render Article 21.3 of the DSU a nullity and make a mockery of the requirement of prompt compliance in Article 21.1.

4.181 If and when the "transition periods" end, Australia's new measures will perpetuate a distinction in its appropriate levels of protection. Under AQPM 1999/51, only five of the eight pre-import requirements that will apply to salmonids will also apply to non-salmonids.[72] In addition, salmonids will have to satisfy all of these requirements *and* be processed to a consumer-ready state, but non-salmonids that satisfy the more limited pre-import requirements may be imported in non-"consumer-ready" forms.

4.182 Moreover, AQIS has left a major loophole in its restrictions on non-salmonids. Non-salmonids that neither meet the more limited processing, documentation and certification requirements nor are "consumer-ready" may nevertheless be imported under an import permit. That is, dead, non-salmonid marine finfish may be imported into Australia without evisceration, without heading and gilling, without inspection and grading, without health certification and without processing to a "consumer-ready" state.

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[69] Australia's First Submission, para. 129.
[70] *Ibid*., paras. 52-55.
[71] *Australia – Salmon* Arbitrator's Award, para. 6.
[72] See Canada's First Submission, Table 1.

4.183 The new policies grant the discretion to issue such permits to delegates of the Director of Quarantine if they conclude that "the proposed importation is consistent with Australia's appropriate level of protection (i.e. it presents an equivalent level of risk to certified, inspected, headless, eviscerated, washed fish)".[73] It is entirely unclear on what basis delegates would be able to make such assessments. For example, they will be assessing individual shipments, whereas risk, as already discussed, is a function of total import volumes. Thus, a one-tonne shipment of whole, uneviscerated fish for bait may indeed pose a low risk whereas 40,000 such shipments, if assessed cumulatively, may not. Moreover, these discretionary permits will be issued quickly. According to AQPM 1999/64, they will normally be issued within ten working days of receipt of the application and payment of a fee.[74]

4.184 Australia asserts that the "Comparative Table" of risk management measures annexed to its First Submission demonstrates that Australia has not adopted different appropriate levels of protection in different situations. It is important to note that Australia uses the term "risk management" to mean very different things for salmon and non-salmonids. For salmon, "risk management" means measures in addition to evisceration. For non-salmonids, "risk management" does not necessarily even mean evisceration.

4.185 In the case of live ornamental finfish, following the "transition period" Australia will marginally tighten its requirements for some fish but will weaken them for others. For example, whereas the minimum post-entry quarantine holding period has been fourteen days[75], according to AQPM 1999/51, the minimum quarantine period will be three weeks for goldfish but only one week for all other fish.[76]

4.186 In sum, Australia cannot be considered to have corrected the distinction in its appropriate levels of protection found by the Panel and the Appellate Body.

4.187 Dr. McVicar is not convinced that Australia's different treatment of salmon and pilchard imports reflects even a distinction in appropriate levels of protection. He argues that the disease agent VHSV, which pilchards share in common with salmon, is more readily transmitted to other pilchards and may be presumed to be more pathogenic to other pilchards than to salmon. He also argues that VHSV is the only disease agent of pilchards of current concern to Australia, whereas adult salmon may host more disease agents. He emphasizes that Australia has long experience in importing pilchards without a disease introduction, although by this we must assume him to mean a disease introduction to salmonids since pilchard imports are suspected of causing the recent mass pilchard mortalities in Australia.

4.188 Against these factors is the fact that pilchards are imported in vastly larger quantities than salmonids, and that pilchards are deposited directly into the aquatic environment. Dr. McVicar has noted that this practice often occurs in a marine environment, possibly away from salmonid farms. However, the 1999 Report also declares pilchards to be the most popular recreational bait fish. The 1999 Report makes this statement without distinction as to the type of aquatic environment, whether it is open ocean or trout streams, where pilchards are used. In addition, uneviscerated pilchards are used as bait for tuna long-lining all around the southern coast of Australia. Canada understands that every time a long-line is set, up to 3000 uneviscerated pilchards are deposited directly into the aquatic environment.

4.189 Salmon on the other hand would be imported only for human consumption, which would greatly restrict the amount of product that would enter the aquatic environment regardless of whether it hosted a pathogen. Any imported salmon will also be eviscerated, which Dr. McVicar states will

[73] AQPM 1999/51, Attachment 2.
[74] AQPM 1999/64, p. 2.
[75] *Australia – Salmon* Panel Report, para. 8.128.
[76] AQPM 1999/51, Attachment 3.

significantly reduce risk. Any imported salmon would also be subject to the numerous other primary processing measures that Canada has described such as washing, inspection and in the case of all farmed salmonids, including all Atlantic salmon, bleeding, which would reduce risk beyond evisceration alone.

4.190 Whereas pilchard imports are suspected in two disease outbreaks in Australia, trade in dead, eviscerated salmon products has never been demonstrated to cause, and is not currently suspected of causing, any disease establishments. This holds true even though there has been vastly more trade in salmon than in pilchards and salmon has been traded in all types of environments, including, prior to 1975, Australia. Dr. Winton advised the original Panel that there were even examples where fish that potentially contained high levels of an infectious agent had not resulted in transmission of disease if they were eviscerated.[77] As Dr. McVicar says, "considerable emphasis has to be placed on historical experience and the absence of a disease event is of considerable relevance".

4.191 Australia claims its appropriate level of protection is in all cases a "high or very conservative level of protection aimed at reducing risk to very low levels while not based on a zero-risk approach". If so, it is impossible to understand how Australia can tolerate the uncontrolled release of uneviscerated pilchards directly into its various aquatic environments, including those populated by salmon and trout. Yet it cannot tolerate the importation of far smaller volumes of salmon for human consumption that has been eviscerated, washed, inspected and in the case of farmed fish, bled. Either Australia maintains arbitrary and unjustifiable distinctions in its appropriate levels of protection in different situations, or its measures in respect of salmon are more trade restrictive than required to achieve its appropriate level of protection.

4.192 Dr. Winton told the original Panel that Pacific herring may "contain a significantly and quantifiably higher incidence and prevalence of infection than do Pacific salmon".[78] Despite Dr. McVicar's caveat that diseases of high pathogenicity are less likely to be transmitted between species, he commented in the 1999 Report that Atlantic herring is a possible source of ISAV in salmon.[79] According to AQPM 1999/79, AQIS is currently considering an application for the importation of whole round herring for use as fish feed or bait.

4.193 Even if that application, or others like it, are rejected, as a specified non-salmonid fish, whole round herring may still be imported into Australia for further processing. Once in Australia, herring imports may be headed and eviscerated at commercial processing facilities. Australia allows this, despite Dr. Winton's warning, despite the suspicion of herring as a source of ISAV and despite Australia's professed concern that wastes from processing facilities are the most likely pathway for the release of exotic pathogens into the environment.

4.194 By the standards of what Australia insists is its appropriate level of protection, when it comes to non-salmonid imports, Australia is still gambling. Dr. McVicar has commented that control measures must be based on proven cases, not possible risks. There are no proven cases, or even documented cases of disease transmission via dead eviscerated salmonids or any other fish. By contrast, as Canada's Exhibit GG shows clearly, fisheries scientists caution against feeding any fish species with raw marine fish. The experiments on which this advice was based demonstrated that marine VHS viruses are potentially pathogenic for rainbow trout even when the viruses come from unrelated species.

4.195 Dr. McVicar cautions that one should prefer real-life experience over experimental testing. But there are no real-life demonstrations of disease transmission via dead, eviscerated salmonids. On the basis of Australia's alleged appropriate level of protection, its professed concerns regarding disease transmission pathways and the known and suspected risks posed by herring and pilchards,

[77] *Australia – Salmon* Panel Report, para. 6.110.
[78] *Ibid*., para. 283.
[79] 1999 Report, Appendix 8, p. 512.

there is no possible justification for Australia to allow whole herring, but not salmon, to be processed in Australia and to allow whole pilchards and herring to be used as bait or feed.

4.196 Nor does Dr. McVicar address all the other diseases of concern to Australia that may be present in bait fish, namely aquabirnavirus, IPN, IHN, red sea bream iridovirus, *A. salmonicida* (typical and atypical), and *Photobacterium damsela piscicida*.

Australia

4.197 Canada seeks to widen the Panel's examination beyond its mandate. The Panel's mandate does not extend to an examination of the consistency of *all* measures applying to *all* non-viable salmonids; or to measures outside the scope of "measures taken to comply".

4.198 The bulk of Canada's evidence relates to herring bait and live ornamental finfish in respect of two diseases in common: *A. salmonicida* (atypical) and IHN. There is now new scientific data and new measures before the Panel. Canada's evidence does not constitute a hazard identification. Nor does Canada contest the science of the risk evidence.

4.199 Of the diseases in common with salmon, the 1999 IRA's examined risks on the basis of common methodology according to end use and the form in which imported. The 1999 IRA's then assigned risk management measures on a disease-by-disease basis and, where appropriate, with regard to specific host/disease combinations.

4.200 Dr. Brückner advises:

> "The scientific argument is that disease manifests differently in different species and in respect of products of such species. It is asserted that this difference should be taken into account when determining risk management measures. In none of the Articles mentioned in the Agreement, is it required that there should be "across the board" conformity of measures to meet an ALOP. The process that was followed in the 1999-IRA also supports the view of Australia although it could be reasoned that there are both advantages and disadvantages to this approach - especially if a measure is evaluated in terms of possible restrictions on trade that such a measure might impose. The approach of Australia appears not to be inconsistent with the Agreement and can thus not be opposed." (response to Question 10)

4.201 The use of host-disease lists (such as that provided by the Panel in its letter of 1 November 1999) must be treated with caution. Canada did not submit the lists into evidence to the Panel. Furthermore, Dr. McVicar cautions against the unreserved use of published host-disease lists, as numerous reports of disease occurrence are the result of experimental challenge or from samples taken from or in close association with infectious populations of the normal host in unnatural conditions (response to Question 10). Dr. McVicar also advises that *different strains* of the same disease agent may show marked differences in pathogenicity, infectiveness and therefore risk. Some atypical strains of *A, salmonicida* do not cause significant disease in salmonids when they come from non-salmonids.

4.202 There is better scientific evidence before the Panel in regard to the source and risk associated with the diseases in question (Australia's Exhibit A) than contained in the lists. The lists do not represent lists of species of fish that are commercially marketed or traded for human consumption, nor do they represent lists of species of fish imported by Australia for human consumption.

4.203 With regard to *A. salmonicida*, Canada's claims are based on assertions that thirty-three species are hosts of *A. salmonicida* (atypical), thirty-five species for *A. salmonicida* (typical), and that Australia imports *all* such species for human consumption. These claims are rejected by the facts. *A. salmonicida* has been reported in Canadian salmon, but mostly in the typical form. The typical form

has not been reported in herring. Among live ornamental fish allowed entry to Australia, it has been reported only in goldfish (*Carassius auratus*) and *Labrus bimaculatus* (a marine wrasse).

4.204 *A. salmonicida* (atypical) is the only disease in common to the three product groups. Non-viable fish for human consumption is traded in eviscerated or further processed form. Australia sources most of its imports of fresh chilled or frozen fish for human consumption in the form of frozen fillets, and principally from New Zealand, where both the disease and many of the species cited by Canada do not exist.

4.205 Risk management measures were warranted for salmon other than wild, ocean-caught Pacific salmon and for farmed non-salmonid marine fish. For salmon other than wild ocean-caught Pacific salmon, the measures applied are:

- the fish must be derived from a population subject to health surveillance and monitoring administered by a competent authority;
- the fish must not be derived from a population slaughtered as an official disease control measure;
- the fish must not be juvenile salmonids or spawners;
- the head and gills removed and internal and external surfaces thoroughly washed;
- the fish must be inspected and graded under supervision of a competent authority;
- the product for export must be free from visible lesions associated with infectious disease and be fit for human consumption;
- the fish must be processed in a premises approved by and under the control of a competent authority;
- consignments must be accompanied by official certification;
- only approved premises may commercially process imported salmonids in Australia; and
- only consumer-ready product will be released from quarantine.

For farmed non-salmonid marine finfish, the measures are listed in AQPM 1999/79. For live ornamental finfish and goldfish, the measures are listed in AQPM 1999/77. For *Labrus bimaculatus,* the measures are listed in AQPM 1999/77.

4.206 IHNV is one of the most significant diseases of salmon and the full suite of risk management measures apply for salmon with this disease. However, the risk of IHN being found in herring is negligible and it is not a disease of goldfish.

4.207 North American herring is a principal host of VHSV. Canada does not claim that pilchards are associated with transmission of VHS to salmonids. VHS is associated with colder water temperatures. This disease is also reported in pilchards as an exceptional occurrence in unusual environmental conditions in Canadian waters. Australia normally sources Pacific pilchards from warmer waters where VHSV is not reported. Most Australian water temperatures are higher than those where VHSV normally occurs. The 1999 IRA concluded that the risk associated with eviscerated salmonids met Australia's ALOP. Risk management measures were not warranted. For other fish products certain risk-management measures apply.

3. Diseases of imported salmonids versus domestic fish

Canada

4.208 As both the 1999 Draft Report and the Draft Ornamentals Report acknowledge, there are significant finfish diseases found in Australia that have a restricted or regional distribution. Almost all of these diseases are listed by the OIE. To prevent the spread of these diseases within Australia, interstate movement restrictions are enforced by state and territory governments. Strikingly however,

Australia admits that these restrictions apply only to live fish and their genetic material. No legislative restrictions relating to the spread of diseases of finfish currently apply to the movement, within Australia, of non-viable finfish products for human consumption.

4.209 Australia effectively has a double standard. Either Australia has different appropriate levels of protection for its domestic products as compared to imported ones or it believes that only imported dead fish are capable of spreading disease.

Australia

4.210 With respect to Canada's arguments, Australia observed that the following factual issues were relevant. Fish for human consumption is traded in eviscerated form at a minimum to prevent rapid product deterioration. Australia has a 9 million square kilometre fishing zone and a highly diverse climate zone, however, apart from salmonids, it has few of the cooler climate fish species found in Canada. VERV and epizootic haematopoietic necrosis virus (EHNV) have had minimal impact and would not be expected to have particularly significant consequences if spread. In most of the instances cited by Canada, the diseases are associated with a particular host and are only endemic in regions where there are significant host populations.

4.211 Differences in measures applying to imported salmon and non-salmon product does not constitute a *prima facie* case of the *same or similar risk*. Moreover, the Panel cannot examine the consistency of measures applying to the importation of all non-viable salmonids. Canada has not established a *prima facie* case.

4.212 Goldfish ulcer disease (GUD), VERV, EHNV, epizootic ulcerative syndrome (EUS) or herpes virus are not "new diseases". Further restrictions would not be warranted under the ALOP/risk management approach. Canada does not identify a particular species against a specified disease against a particular region. "Restricted or regional distribution" of a *disease* cannot form the basis of comparisons of "consequences"; the distribution of the host *species* is equally important. Canada seeks to evade examination of its claims under the first element of Article 5.5 by relegating its comparison-based arguments to the first sentence of Article 2.3 and the second element of Article 5.6

4.213 In the alternative, Australia provides the following rebuttal evidence. GUD is found in goldfish and carp in NSW and Victoria. There are interstate controls on the movement of live product for goldfish; there is no commercial trade in non-viable goldfish. Live carp imports are prohibited; it is an introduced species that has established in inland waterways; it has not been farmed and programmes are in place to attempt its eradication.

4.214 Contrary to Canada's assertions, there are no populations of turbot, grouper, halibut or sea bass in Australia, and only one species of jack (marketed as silver trevally). VERV has been reported only in barramundi in Australia, and only rarely in fish older than larvae and juvenile fish which are not normally harvested for human consumption. VERV in barramundi is considered endemic wherever wild populations of freshwater and saltwater estuarine species of barramundi are found in Australia. Appropriate hygienic and managerial practices instituted to deal with the virus have been so successful that few outbreaks of the disease have occurred since 1990/91.

4.215 Barramundi populations are distributed in the north of Australia from slightly south of the Tropic of Capricorn. It has been suggested that a virus group related to VERV may be endemic throughout the Pacific and associated water bodies. There are a number of viral agents that may lead to the condition known as VERV, which may be seriologically related, but not identical. VERV has not been reported in silver trevally.

4.216 The original Panel has detailed evidence on the hosts of EHNV and the spread of EHNV in different parts of Australia. The primary host is redfin perch, a wild recreational fish found in most regions where salmonids are located, including Tasmania. A recent New Zealand risk assessment on

salmonids from Australia concluded that infection of redfin perch was the most likely scenario for EHNV establishment in New Zealand, as rainbow trout are relatively resistant to infection. EHNV is not reported in salmon.

4.217 With respect to EUS, Canada does not identify the species or regional distribution of the disease in Australia. In Australia, EUS most commonly affects wild fish such as mullet, bream, and Australian whiting; it is found in New South Wales, Queensland, the Northern Territory and Western Australia.

4.218 Herpesvirus is highly host specific to pilchards (a wild ocean fish); it is not associated with salmonids. It is endemic to all marine waters where pilchards are found in Australia and appears unique to Australia and New Zealand. AQIS knows of no reports of herpes viruses in pilchards anywhere in the world apart from Australia and New Zealand.

4.219 The 1999 Report notes that there is limited information and little research on disease in "lower value" fish species such as herring. Wild populations of lower value fish such as herring are not normally the target of active health surveillance and monitoring; rather, information on disease in these populations is normally gathered passively and in the course of investigation of specific disease events. In the 1999 risk analysis, Dr. McVicar advised: "… it is only a few exceptional cases that epizootics of acute disease have been detected in wild marine fish populations" (page 26). The 1999 Report also notes that "in addition to the general lack of surveillance for disease in wild fish, the accuracy of information on the prevalence of disease agents is further confounded by uncertainty as to the extent to which populations commingle or overlap within geographic regions" (page 26).

4.220 The best studied disease agent of herring is viral haemorrhagic septicaemia virus (VHSV) which is considered to be endemic in and to have caused significant mortality events in wild herring. The 1999 Report concluded that VHS is the only disease of herring for which specific risk management measures are warranted. This conclusion is based on the paucity of scientific evidence on significant pathogens in wild herring and the fact that VHSV is known to be endemic, sometimes at high prevalence, in the wild herring populations of the world.

4.221 Australia notes that the only practical OIE recommendation in relation to herring product is evisceration to address risks associated with VHSV. (Australia understands that most countries could not meet the alternative recommendation of the OIE, i.e. provision of certification attesting to country or zone freedom from VHS. In considering risk management, the 1999 Report notes: "… as VHSV usually localises in the viscera, evisceration would significantly reduce risk". Accordingly, key risk management measures for herring in respect of VHS include evisceration, removal of the head and gills, inspection and processing in approved premises and certification that the product is free from visible lesions associated with infectious disease (page 367).

4.222 The 1999 Report goes on to state:

> "AQIS has been unable to identify *pre-export* risk management measures that would reduce the risk of establishment to the extent required to meet Australia's ALOP. Accordingly, the importation of whole, round finfish of susceptible species will not generally be permitted."

4.223 In noting that the use of imported herring for bait purposes will not generally be allowed in Australia, the 1999 Report acknowledges that such proposals will be considered on a case-by-case basis, taking into account the specific circumstances, to ensure that there is an acceptably low probability of VHS establishing in Australia. Such circumstances could, for example, include the provision by an exporting country of an official statement certifying the freedom of specific populations from VHSV. In keeping with the arrangements for salmonids, Australia would expect that such certification would be supported by an appropriate system for surveillance and monitoring of the health of wild herring.

4.224 The 1999 Report concludes that the quarantine risks associated with the importation of salmon primarily relate to six serious diseases of salmon, five of which are endemic in Canadian salmonids. All five could have serious consequences if they were to become established in Australia. Most commercial salmonid populations are the subject of active surveillance and monitoring for significant disease agents, the occurrence of which would normally be the subject of official notification. Based on analysis of relevant scientific information, the 1999 Report concludes that certain risk management measures, based on official salmonid health surveillance and monitoring, are warranted for eviscerated salmonid product.

4.225 For herring, the 1999 Report concludes that there is only one disease agent in relation to which specific risk management is warranted and that this agent is endemic in the major herring populations of the world. Most countries do not practise active health surveillance and monitoring of populations of "lower value" wild fish, including herring. The risk management measures appropriate to this species/disease agent combination are based on product processing and certification (comparable with the measures for salmonid product). In light of the requirement to adopt the least trade restrictive conditions and recognising that official surveillance and monitoring of herring health would not significantly reduce quarantine risk, the 1999 Report did not identify a need for measures supported by official health surveillance and monitoring.

4.226 The measures applying - or scheduled to apply - between fresh chilled and frozen salmon and imported fish having diseases in common - or between imported and domestic fish not having diseases in common - do not constitute differences in levels of protection. They are fully justifiable by the scientific risk assessment. The measures applying from 1 December 1999 on non-viable non-salmonids, and that being progressively introduced from 1 December 1999 on ornamental finfish, will eliminate any differences in levels of protection. Canada has not explained how the additional arrangements could be applied more rapidly in practice, given that they cannot be applied retrospectively (e.g. the requirement for countries to maintain health testing records for a 2-year period for goldfish). The different situations applying between imported salmon and domestic fish having different diseases are not rationally comparable.

4. Arbitrary and unjustifiable distinctions

Canada

4.227 There is no tenable explanation for Australia's decision to impose lesser restrictions on non-salmonids and on live ornamentals than on imported salmonids. Nor is there any tenable explanation why Australia would insist on controlling imported dead fish to prevent the spread of disease but would forego such controls entirely on its domestic fish products in the face of serious diseases of restricted or regional distribution.

4.228 Dr. McVicar's comments that Australia's quarantine measures for live ornamental finfish "will not necessarily detect and remove covertly infected fish" with atypical *A. salmonicida* is an important acknowledgement. Australia's measures do not appear to impose any post-quarantine controls on how live ornamental finfish are handled. Such fish probably will come directly into contact with other fish when in the care of wholesalers, retailers and consumers and may well be released directly into the environment.

4.229 In the case of bait and feed fish, even the 1999 [Draft] Report acknowledges that fish which are imported for use as bait and aquatic animal feed obviously present a greater probability of introducing disease agents (if present in the fish) into the aquatic environment than that associated with imported product for human consumption.[80]

[80] 1999 Draft Report, sec. 8.1.2.

4.230 As the original Panel noted with respect to herring used as bait and live ornamental finfish, the risk posed by imports of dead, eviscerated salmon for human consumption cannot be said to be higher than that posed by pilchard imports. On the contrary, all evidence suggests that pilchard imports pose the higher risk of the entry, establishment and spread of exotic diseases. The volume of pilchard imports is vastly higher than that of any anticipated salmon imports, pilchards are not subjected to anything approaching the rigorous inspection and grading of salmon for human consumption, they are not eviscerated and they are deposited directly into the aquatic environment.

4.231 Faced with the knowledge that significant pathogens, including the same disease agents that it uses to justify restrictions on salmonids, are found in non-salmonids, including bait and feed fish, Australia nevertheless maintains less restrictive measures on the latter.

4.232 The only partial explanation Australia offers for this distinction in its appropriate levels of protection is that there is an established history of importation of non-viable non-salmonid marine fish into Australia and there are no substantiated reports to indicate that this practice has resulted in the establishment of disease. It relies on an Australian state/industry council report which determined, on this basis that the risk of introducing an exotic disease that is capable of producing a large scale fish kill is either very low or does not exist at all.[81]

4.233 Throughout the original Panel process, Australia was adamant that the fact that something had not happened offered no evidence that it could not happen or was unlikely to happen. Thus, the fact that there has never been a documented case of disease transmission via imports of dead, eviscerated fish was, in Australia's view, meaningless.[82] Now, Australia uses the same type of data as evidence that the risks posed by baitfish imports are extremely low.

4.234 If the absence of disease transmission involving mere thousands of tonnes of product from a few species in a small area is relevant to suggest very low to non-existent risk, then it stands to reason that the absence of disease transmission from billions of tonnes of dead, eviscerated fish of all species moving all around the world for decades is even stronger evidence that the risk from such product is vanishingly small. Moreover, as the 1995 Draft Report acknowledged, prior to 1975 and for many years, Australia imported thousands of tonnes of uncooked salmon product.[83] Dr. Wooldridge considers Canada's assertion to be logical in the absence of acceptable evidence to the contrary. Australia has offered no such evidence.

4.235 The type of data that Australia relies on to downplay the risks posed by baitfish imports merely reinforces the arbitrary and unjustifiable nature of Australia's restrictions on dead, eviscerated salmonid imports.

Australia

4.236 In the event of a Panel finding that Australia has adopted distinctions in levels of protection in different situations, those levels of protection do not exhibit arbitrary or unjustifiable distinctions. The evidentiary basis for the original Panel findings has ceased to exist. The Panel now has before it different *measures* and comprehensive *scientific evidence* in the form of risk assessments.

4.237 Canada's arguments rest on an assertion that "The type of data that Australia relies on to downplay the risks posed by baitfish import merely reinforces the arbitrary and unjustifiable nature of Australia's restrictions on dead, eviscerated salmonid imports". This is rejected on the facts. Nowhere can Canada point to any "downplaying" by Australia of the risks that might be attached to baitfish imports in the evaluation of risks in the 1999 IRA's. For VHS, the risk evaluation demonstrates precisely the *opposite.* Canada does not submit any evidence on live ornamental

[81] *Ibid*., citing the WAFIC Report.
[82] *Australia – Salmon* Panel Report, paras. 4.45 and 4.80.
[83] 1995 Draft Report, p. i. See also Appendix 5, p. 269.

fish. Canada does not examine the relevant conclusions based on the uncontested scientific evidence and evaluations in the 1999 IRA's. Dr. McVicar did not agree that the risk of transmission of a disease in common from bait fish to salmon would always be higher than from salmon for human consumption. While transmission across the species barrier was not impossible, the risk of transmission was generally higher *within* a species. Dr. McVicar advised that consideration should be given to different *strains* of a disease, e.g. VHS. If cod was fed to turbot, the risk of transmission would be very low. The same was true for rainbow trout.

4.238 In relation to ornamental finfish, the 1999 Report sets out the basis for the measures applicable to live ornamental finfish and salmonid product. These commodities differ markedly in respect of quarantine risk and intended end-use in Australia. The risk assessments consider *inter alia* the likelihood and consequences of disease agents entering and becoming established in Australia on a disease-by-disease basis.

4.239 To address risks associated with *A. salmonicida* in goldfish, the fish must be certified as originating from a source free of *A. salmonicida* and must undergo a 21-day period of post-arrival quarantine, during which they are observed for signs of disease. The application of similar conditions to imported salmonid product would effectively halt importation because the disease agent is endemic in most commercial salmon populations and the required certification could not be provided. The imposition of 21-day post-arrival quarantine detention would be highly trade restrictive, given the perishable nature of the commodity, and would not add significantly to quarantine security.

4.240 In terms of technical and practical feasibility, it cannot be presumed that measures applied to live ornamental finfish are equally appropriate for non-viable product. For example, evisceration and de-heading is not an option for product whose commercial value is in the live form. Similarly, quarantine witholding periods would not be a practical or effective measure for non-viable product. For live ornamental finfish, certification and permit systems make a significant contribution to risk management, as well as other measures such as quarantine witholding periods and visual inspection. It is not scientifically valid to make simplistic comparisons of measures applied between live ornamental finfish and non-viable fish product.

4.241 In conclusion, Canada's evidence does not constitute a *prima facie* case. Australia has submitted detailed scientific and factual evidence - based on risk assessments whose science is not contested by Canada - that there are no arbitrary or unjustifiable distinctions in levels of protection. The evidentiary basis for the original Panel's findings have ceased to exist.

5. Discrimination or a disguised restriction on international trade

Canada

4.242 The arbitrary and unjustified distinctions in Australia's appropriate levels of protection result in discrimination or a disguised restriction on international trade. In *EC – Hormones*, the Appellate Body relied on certain indicators that an arbitrary or unjustifiable distinction in a Member's appropriate levels of protection may result in discrimination or a disguised restriction on international trade. The original Panel in this case took the same approach, and was upheld by the Appellate Body.[84]

4.243 The only one of these factors that no longer fully applies is the change in conclusion between the 1995 Draft Report and the 1996 Final Report. However, there remain significant inexplicable differences between the recommendations of the 1995 Draft Report and the policies set out in AQPM 1999/51. The most striking of these is that the 1995 Draft Report would have permitted the importation of whole fish with the viscera, head, fins and tail removed as well as fillets and steaks of

[84] *Australia – Salmon* Panel Report, para. 8.159, *Australia – Salmon* Appellate Body Report, para. 177.

any weight, with or without the skin. That is, the 1995 Draft Report recommended allowing imports of product for the HRI trade as well as what Australia now calls "consumer-ready" product.

4.244 Despite those findings, Australia's new policies would exclude whole fish with the viscera, head, fins and tail removed and would also exclude skin-on fillets and steaks of 450 grams or more. This might be understandable if there was any new evidence that these products would generate waste of significant quarantine concern. On the contrary, the evidence reviewed in the 1999 Draft Report confirms that waste from such products would be of negligible quarantine significance.[85] Nor do the new policies impose these product form limitations on non-salmonid imports. The unavoidable inference is that the new restrictions on salmonids have a non-quarantine motive, such as making imported product less attractive to Australian consumers and to hotel, retail and institutional purchasers.

4.245 Accordingly, there are ample factors, both old and new, that cumulatively lead to the conclusion that the distinctions in Australia's appropriate levels of protection in different situations result in discrimination or a disguised restriction on international trade

4.246 Australia's pilchard requirements are a glaring example of its discriminatory treatment of salmonid imports. By virtue of Australia's decision, imports of whole, uneviscerated pilchards will be eligible for import permits subject only to cursory information and certification requirements. In reaching this decision, Australia has ignored the preponderance of evidence that the risks posed by importations of uneviscerated pilchards are, if anything, greater than those posed by the importation of eviscerated salmonids for human consumption.

4.247 According to the 1999 Draft Report:

> "The importation of pilchards for use as fish feed by the tuna industry is a particular case where scientists have raised concerns that exotic disease (pilchard herpesvirus) may have become established by this route."[86]

4.248 In 1995 and again in 1998, Australian pilchard stocks were devastated by outbreaks of a disease caused by what are believed to be herpesviruses. The 1995 episode has been described in a published article by Australian and New Zealand scientists as "the largest mortality event ever recorded in any fish species in terms of both numbers affected and geographic range".[87] The same scientists conclude that the characteristics of the 1995 outbreak are consistent with the theory that it was "due to an infectious disease agent that was not present before in Australian pilchard stocks".[88] Moreover, they suggest that the importation of feed or baitfish was a possible mechanism for the introduction of such pathogens. The article notes that Australia imports over 10,000 tonnes per year of species including pilchards and herring for tuna feed, that frozen herring bait is a potential source for the dissemination of VHSV, and that bacterial pathogens are also known to survive in frozen clupeoids.[89]

4.249 In the light of its professed "highly conservative" approach, Australia's response to the suspicion that pilchard imports may be responsible for such outbreaks borders on wilful blindness. The 1999 Draft Report states that it is not clear whether the virus responsible for the 1995 and 1998 outbreaks is endemic or exotic, and, if exotic, how it was introduced. Nor is it clear, according to the

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[85] 1999 Draft Report, sec. 5.2.2.3.

[86] *Ibid.*, sec. 8.1.2.

[87] R.J. Whittington et al., "Epizootic mortality in the pilchard *Sardinops sagax neopilchardus* in Australia and New Zealand in 1995. I. Pathology and epizootiology," (1997) *28 Diseases of Aquatic Organisms* 1, (hereinafter "Whittington"), p. 2.

[88] *Ibid.*, p. 14.

[89] *Ibid.*, pp. 14-15.

Report, whether the "herpes-like virus apparently responsible for the 1995 mortality event is the same as the one apparently responsible for the 1998 event".[90]

4.250 Australia's approach appears to be (a) because it does not apply controls on the virus (or viruses), it does not need to consider the risk of not doing so; and (b) because some sort of herpesvirus is now in Australia, possibly due to pilchard imports, there is no need to impose quarantine restrictions on pilchard imports to prevent the introduction of other disease agents.

4.251 Little is known about the diseases of clupeoids generally, and diseases of pilchards are poorly documented.[91] What is known is that pilchard imports are a principal suspect in two recent disease outbreaks in Australia, one of which was the largest ever recorded. The 1999 Draft Report also recognizes pilchards as a confirmed host of VHSV.[92] Although the 1999 Draft Report does not prescribe additional requirements for salmonids to address VHSV, another new AQIS Policy Memorandum (AQPM 1999/66, 23 September 1999) sets out draft revised heat-treatment policies for salmonid products such as smoked salmon, ostensibly to address disease agents including VHSV.[93]

4.252 Nevertheless, Australia will continue to permit the importation of uneviscerated pilchards that will be deposited directly into the aquatic environment. At 10,000 tonnes, Australia's imports of one such species alone, *Sardinops sagax*, are already twice Australia's own estimate of the maximum possible volume of eviscerated salmonids for human consumption.[94] Moreover, Australia expects pilchard import volumes to increase because the reduction in domestic pilchard catch, as a consequence of the pilchard mortality, has created a high demand for imported pilchards to sustain the operation of domestic industries.[95]

4.253 Australia's cavalier approach to pilchard imports stands in stark contrast to its "highly conservative" approach to imports of eviscerated salmonids for human consumption. The unavoidable inference is that Australia applies its "highly conservative" approach to quarantine to products that compete with its domestic industries but not to products on which its domestic industries rely. Canada's suspicions on this point were confirmed in recent testimony to Australia's Senate by Mr. Brian Jeffriess, President of the Tuna Boat Owners Association of Australia. Mr. Jeffriess testified that Australia should logically ban bait imports because of the same concerns about the same diseases, but that the tuna farming industry, which is three times the size of the salmon industry, depends 90 per cent on imported bait. Thus, the resulting discrimination or disguised restriction on international trade can be inferred from Australia applying its "highly conservative" approach to quarantine to imported products that compete with its domestic products but not to imported products on which its domestic industries rely.[96]

4.254 Australia's categorical statement that "[t]he 1999 IRA notes that the pilchard herpes virus was endemic in Australian pilchards" stands in contradiction to the 1999 Report which reports the chair of the Joint Pilchard Scientific Working Group as advising that the Working Group is still coordinating a national research programme on pilchard mortality to determine whether the virus is endemic or exotic, and if exotic, the source of the virus.[97] It therefore appears that the Panel's experts are not the only ones not convinced that the virus is endemic.

4.255 However, the 1999 Report seems to ignore the advice of the chair of the Joint Pilchard Scientific Working Group. It states that the virus "is considered endemic to Australia and there is no

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[90] 1999 Draft Report, sec. 8.1.2.
[91] Whittington, p. 12.
[92] 1999 Draft Report, sec. 6.2.1.
[93] AQPM 1999/66, p. 5.
[94] 1999 Draft Report, sec. 1.6.2.2(b).
[95] *Ibid*., sec. 8.1.2.
[96] Canada's First Supplementary Submission, para. 24.
[97] 1999 Report, sec. 8.1, pp. 347-348.

evidence to suggest that there are exotic strains of the virus overseas. Thus, the implementation of quarantine measures against this agent is not warranted".[98]

4.256 Australia's conclusion suggests that if the virus is exotic to Australia - as it might well be - the implementation of quarantine measures would be warranted. Given the scientific uncertainty surrounding the virus, its proven ability to devastate Australia's commercially important domestic pilchard fishery and Australia's purported "high or very conservative" appropriate level of protection, one would expect Australia to take interim measures, such as under Article 5.7 of the SPS Agreement, while continuing to gather the additional information necessary for a more objective assessment of risk. Under the circumstances, it is antithetical to a "high or very conservative appropriate level of protection" for Australia to discount or dismiss the views of the Joint Pilchard Scientific Working Group and to declare quarantine measures unwarranted.

4.257 When one compares Australia's actions, or lack of actions, in this regard to Australia's highly trade restrictive approach to eviscerated salmon for human consumption - a product which has never been implicated in disease introduction anywhere - it is apparent that Australia maintains arbitrary or unjustifiable distinctions in its appropriate levels of protection in different situations resulting in discrimination or a disguised restriction on international trade.

4.258 With regard to New Zealand's disease status, it is unclear what Australia's expression "more favourable disease status overall" necessarily means. Although fewer of the salmonid disease agents in question have been found in New Zealand, New Zealand's disease status is not necessarily "more favourable" than Canada's given the presence of *Myxobolus cerebralis* (the causative agent of whirling disease) in New Zealand but not in Canada.

4.259 Moreover, the mere fact that certain diseases have been detected in a particular country is of limited relevance when a long and elaborate succession of events must occur before a disease agent present in one country may become established in another country by means of imported fish product.

4.260 Regardless of New Zealand's "disease status", there are a range of explanations for why Australia would impose less restrictive measures on salmon from New Zealand. For example, Australian government officials have testified before the Australian Senate that the Australian salmon industry is interested in exporting whole salmon - that is, with head on and gills in - to New Zealand.[99] New Zealand may well consider it a *quid pro quo* that its salmon be permitted into Australia in the same form.

4.261 It also may be that because New Zealand is a much smaller producer of salmon products than countries such as Canada, the United States or Norway, New Zealand salmon is not considered by Australia to pose the same competitive threat to Australia as salmon product from countries such as Canada. In addition, New Zealand produces only one species of Pacific salmon (chinook) and no Atlantic salmon at all.

4.262 Thus, contrary to Australia's assertion, its decision to impose lesser requirements on New Zealand salmon is not "overwhelming evidence" that its measures do not result in a disguised restriction on trade. There are far less exculpatory explanations than Australia suggests for why it would impose less restrictive requirements on imports of salmon from New Zealand than from countries such as Canada.

4.263 Australia also suggests in its rebuttal submission that, with regard to the third element under Article 5.5, if any of the cumulative warning signals or additional factors ceased to exist, the Panel

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[98] *Ibid.*, p. 348.

[99] Australia, Senate, Rural and Regional Affairs and Transport Legislation Committee, *Proof Committee Hansard*, Reference: Importation of salmon products into Australia (11 November 1999), p. 358 (testimony of Stephen Deady, Assistant Secretary, WTO Branch, Department of Foreign Affairs and Trade).

could not make a finding of inconsistency with Article 5.5.[100] Australia's argument is entirely unwarranted.

4.264 It is evident from the Appellate Body's own analysis that the word "cumulatively" could not possibly mean that the absence of one warning signal or additional factor would eliminate the basis for finding Australia in violation of its Article 5.5 obligations. If Australia were correct, then the Appellate Body itself could not have made the finding it did, having excluded from consideration one of the "additional factors" on which the Panel relied.

Australia

4.265 In the event of adverse findings by the Panel under the first two elements of Article 5.5, the measures applied to fresh chilled or frozen salmon from Canada do not result in discrimination or a disguised restriction on international trade. The original Panel findings, as modified by the Appellate Body, concluded that the measures then in existence resulted in disguised restriction on international trade on the basis of three "warning signals" and two "additional factors", considered cumulatively. If one or more of these ceased to exist, the Panel cannot make a finding of inconsistency with Article 5.5. A "warning signal" is not as such "evidence" of a disguised restriction on international trade.[101]

4.266 The Panel now has before it substantially different scientific and factual evidence. The architecture and structure of the measures is completely different. In regard to the three "warning signals", Australia has submitted positive evidence in regard to comparative risks and introduced new measures supported by risk assessments on the three groups of product.

4.267 In regard to the "additional factors", Canada agrees that the first factor is no longer applicable. On the second factor, Australia has submitted new evidence under the first element of Article 5.5, identifying any risk to salmon as negligible. The only "new factor" which Canada relies on is an inference that the new trade-liberalising restrictions on salmonids have a non-quarantine motive. This is rejected on the facts, including the scientific superiority of the 1999 IRA as a risk assessment. Canada has not claimed that the 1995 draft recommendations are based on a risk assessment within the meaning of Article 5.1. New Zealand is the most commercially competitive supplier to the Australian market, yet whole eviscerated product can be imported from New Zealand. Account must also be taken of the substantial domestic criticisms following the announcement of the 19 July measures.

4.268 In terms of Australia's market for fresh chilled or frozen salmon, Australia provides the following evidence. Around 98 per cent of whole fresh Canadian salmon is exported to the United States market. There are good market opportunities for headless product; whole fish sold at the wholesale level is normally cut up into cutlets and fillets for sale to retail establishments (including the HRI sector) and private consumers. The ABARE report considers that the lower value end of the market (including high volume catering establishments such as hotels and clubs) would require product in consumer ready form. In assessing measures that achieve Australia's ALOP, AQIS considered matters such as practicality and ease of implementation, cost of compliance, cost-effectiveness and impact on trade, subject to the overriding requirement that measures reliably contribute towards achieving Australia's ALOP. AQIS closely consulted with the importers association to ensure that commercial trade would be feasible.

4.269 Australia has addressed all of the matters identified by the original Panel as the basis for its findings of inconsistency with Article 5.5. The evidentiary basis of the original Panel findings has ceased to exist. Canada has not established that any "new" factors have arisen. The measures taken to comply do not result in discrimination or a disguised restriction on international trade.

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[100] Australia's Rebuttal Submission, para. 133.
[101] *Australia – Salmon* Appellate Body Report, para. 162.

H. ARTICLE 5.6

Canada

4.270 All three elements for a violation of Article 5.6 are present in this case. Less trade restrictive alternatives include not requiring that salmon be processed to "consumer-ready" form in order to be released from quarantine. This alternative is reasonably available, would not (according to the experts) have any bearing on Australia's appropriate level of protection, and would be significantly less trade restrictive in that it would permit the importation and sale in the Australian market of salmon product forms that are currently prohibited.

4.271 Similarly, it would appear that measures such as evisceration plus the exclusion of juvenile and spawning salmonids along with inspection, grading and washing could reduce risk to levels acceptable to Australia according to its matrix. Such measures are reasonably available; they are taken in the ordinary course by countries that export salmon for human consumption. They are also significantly less trade restrictive in that they would permit the importation and sale of product forms such as whole, eviscerated head-on products that are currently prohibited.

Australia

4.272 Australia was faced with two separate claims by Canada: (a) the claims in its first submission and (b) the claims in paragraph 82 of its oral submission.

4.273 In the context of a WTO Member's ALOP, a Panel or Appellate Body cannot substitute its own reasoning about the implied level of protection for that expressed consistently by a Member.[102] It is the ALOP which determines the SPS measures to be introduced or maintained, not the SPS measure which determines the ALOP.[103] The ALOP may only be implied from the level of protection reflected in the SPS measure where it was not determined by the Member or expressed with sufficient precision.[104]

1. Alternative measures reasonably available, taking into account technical and economic feasibility

Canada

4.274 There are alternative, technically and economically feasible measures reasonably available. Australia contends, without any scientific evidence or evaluation of probability, that a long succession of trade restrictive requirements must all be satisfied before imported salmon products may enter Australia. It is not at all clear from the 1999 Report why any one, or several of these measures, such as evisceration, inspection and grading, or restriction of imports to non-spawning adults, might not suffice. Individually, each of the measures required by Australia can be presumed to be reasonably available, taking into account technical and economic feasibility.

Australia

4.275 Canada has not identified that there are alternative measures reasonably available, taking into account technical and economic feasibility. Canada's claim is based on an assertion that: "Individually, each of the measures required by Australia can be presumed to be reasonably available, taking into account technical and economic feasibility". Canada does not provide any evidence on the reasonable availability and technical and economic feasibility of alternative measures. Nor does it address the science of the risk assessment on which the measures are based.

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[102] *Ibid.*, para. 199.
[103] *Ibid.*, para. 203.
[104] *Ibid.*, para. 207.

4.276 The feasibility of one measure may be dependent on the existence of another. It cannot be presumed that individual measures or sets of measures are technically and economically feasible in practice. The measures are not applied on the assumption that all Canadian salmon potentially hosts all of the six diseases of concern to Australia's ALOP. The 1999 IRA on non-viable salmonids was *conducted* on a disease-by-disease basis in terms of hazard identification, risk evaluation and risk management. The risk management measures are *applied* on a disease-by-disease basis. The different risks associated with different salmon (e.g. Pacific/Atlantic/wild/farmed/juveniles/spawners) are directly reflected in the specific risk management measures applied. For example, the risk management measures for *A. salmonicida* do not apply to wild, ocean-caught Pacific salmon. The specific measures also reflect disease risk at the sub-regional level. Canada does not provide any evidence that alternative measures *are in fact* reasonably available, taking into account technical and economic feasibility.

4.277 In paragraph 82 of its Oral Statement, Canada appears to be suggesting that a less trade restrictive approach would be to (a) allow the unrestricted importation of all salmon product *in any form* for further processing, and (b) *simply ensure* that such imported product is only treated in fish processing facilities that do not discharge untreated fish waste. Canada has not provided evidence supporting its assertions on less trade restrictive and technical and economic feasibility. Nor has it addressed the third element of the legal test set out by the original Panel (Panel Report, paragraph 8.167) that the measures would meet Australia's ALOP, or provided any documented evidence on the market behaviour of the HRI sector. Neither has Canada rebutted the factual evidence submitted by Australia on Australia's market for fresh chilled or frozen salmon.

4.278 The approach proposed by Canada would involve imports being treated in either of two ways: (a) identification at the border of product intended to be processed and ensuring that it was not diverted to plants not using approved waste processing methods. This would require an additional monitoring system involving significant additional administrative cost; or (b) a requirement that all plants in Australia that could *conceivably* process imported product use approved waste processing methods. It would not be feasible for Australia to monitor *all possible processing sites* to ensure that no unapproved processing took place.

2. Alternative measures that would achieve Australia's ALOP

Canada

4.279 Australia’s appropriate level of protection for salmonids is, it claims, a "high or very conservative level of protection aimed at reducing risk to very low levels while not based on a zero-risk approach". Australia has concluded that evisceration alone would not achieve this appropriate level of protection and that all of the additional, more trade-restrictive measures it imposes on salmon imports are necessary to achieve its appropriate level of protection. However, Australia has no basis for this assertion, having failed, in the 1999 Report, to evaluate the probability of the entry, establishment or spread of the disease agents of concern to it according to the measures which might be applied or which it does apply.

4.280 Some sense of Australia’s "very conservative" appropriate level of protection can be inferred from the 1995 Draft Report, from the "risk evaluation matrix" in section 1.2.4 of the 1999 Draft Report and from the measures that Australia applies to prevent the transmission of fish diseases domestically.

4.281 According to the 1995 Draft Report, the imposition of certain import conditions set out in Appendix 6 achieved Australia’s appropriate level of protection.[105] During the original Panel process, Australia confirmed that its appropriate level of protection had not changed since the 1995 Draft

[105] 1995 Draft Report, p. 223.

Report was released.[106] Australia has offered no indication that its appropriate level of protection for salmonids has changed since the Panel process.

4.282 According to the 1995 Draft Report, Australia achieved its appropriate level of protection without several of the documentation requirements imposed under its new policies, without prohibiting the importation of whole fish with the viscera, head, fins and tail removed and without prohibiting the importation of skin-on fillets and steaks of 450 grams or more. In the absence of any new evidence of risk, it is therefore clear that Australia's appropriate level of protection can be achieved by no more than the conditions set out in the 1995 Draft Report.

4.283 It is also possible that even if the conditions in the 1995 Draft Report achieve Australia's appropriate level of protection, they too are more trade restrictive than required to do so. For example, Australia has contended that the lack of importation of juvenile non-salmonids is sufficient to reduce to negligible the likelihood of even the *entry* of VERV via the importation of 56,000 tonnes of non-salmonids for human consumption.[107] One would therefore reasonably expect a restriction on juveniles and spawning adults to reduce the likelihood of the *establishment* of pathogens such as *A. salmonicida*, *R. salmoninarum* and IHNV to similarly low levels via the importation of a fraction of the amount of eviscerated salmonids. Even if such a measure did not achieve "negligible" risk of disease establishment, by merely achieving "extremely low" risk, according to Australia's "risk evaluation matrix", the exclusion of juveniles and spawners would satisfy Australia's appropriate level of protection for all of the salmonid diseases of concern to it.

4.284 Similarly, Australia has not considered the effect of freezing on the levels of any pathogens present in salmonids for human consumption. There are quantified data to indicate that freezing reduces pathogen loads for many of the salmonid disease agents of concern to Australia, including A. salmonicida, R. salmoninarum and IHNV. For example, the 1999 Report states that a single freeze-thaw cycle reduced the titre of IHNV by four orders of magnitude (i.e. 10,000 times).[108] The 1999 Report states that freezing reduces the titre of A. salmonicida by 99 per cent.[109] The 1995 Draft IRA states that freezing reduces the viability of R. salmoninarum by 77.5 per cent.[110] Australia has offered no explanation for why it has failed to take this information into account or to apply less stringent measures to frozen salmonid product than to fresh or chilled product.

4.285 Another way of assessing which alternative might achieve Australia's appropriate level of protection is to consider, in the context of Australia's "risk evaluation matrix", the measures that it applies domestically. As Australia has acknowledged, the measures it applies domestically to achieve the objective of preventing the spread of regional diseases within Australia are limited to restrictions on live fish. The diseases that it manages in this way include EHNV, an OIE notifiable disease, and VERV and EUS, both OIE "other significant diseases".[111] Australia has no legislative restrictions at all on the domestic movement of any dead fish, eviscerated or uneviscerated, salmonid or non-salmonid, for any diseases.

4.286 Given their OIE status and Australia's own description of these diseases as "significant"[112], it can reasonably be assumed that these diseases would have consequences in at least the "low" to "moderate" range according to the scale used in Australia's matrix. According to the matrix, this means that even without risk management measures, Australia considers that the risk of disease establishment from the movement of uneviscerated dead fish products, including products known to

[106] *Australia – Salmon* Panel Report, para. 4.175.
[107] 1999 Draft Report, secs. 8.1 and 8.3.2.
[108] 1999 Report, sec. 4.2.1, p. 100.
[109] *Ibid.*, Appendix 7, p. 505.
[110] 1995 Draft Report, sec. 4.2.7, p. 73.
[111] Draft Ornamentals Report, sec. 2.2.1.
[112] 1999 Draft Report, sec. 1.4.4; Draft Ornamentals Report, sec. 1.4.4.

host these three OIE diseases, is no higher than "low" to "very low", or additional risk management measures would be required.

4.287 The necessary implication is that the risk of disease establishment from the movement of eviscerated product would be even lower. A measure that required evisceration and excluded juvenile and sexually-mature fish would reduce the risk of disease establishment lower still. These two measures, plus inspection and grading, would reduce the risk of disease establishment yet lower.

4.288 If these three requirements merely reduced risk one step in the matrix from "very low" to "extremely low", according to the matrix, it would achieve Australia's appropriate level of protection for all of the salmonid diseases of concern to it. Recalling the state/industry council study cited by Australia, the absence of documented disease establishments as a result of thousands of tonnes of bait fish imports in Western Australia indicates that the risk from such imports is somewhere between very low and non-existent.[113] This would seem to confirm that the risk from eviscerated product is at least extremely low, given the absence of documented disease establishments as a result of the movement of billions of tonnes of dead eviscerated fish all around the world.

Australia

4.289 Taking into account technical and economic feasibility, there are no alternative measures identified that would achieve Australia's ALOP. Canada cannot substitute its own reasoning about Australia's ALOP for that expressed consistently by Australia to be a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach.

4.290 Canada has not claimed that the 1995 Draft Report constitutes a proper risk assessment. Nor has Canada addressed Australia's ALOP in the context of the limited product coverage of the 1995 Draft Report - fresh chilled or frozen adult, wild, ocean-caught Pacific salmon from Canada and the United States.

4.291 The risk evaluation matrix is part of the risk assessment evaluation. It was not developed as a mechanism to articulate Australia's ALOP. Canada seeks to infer inconsistency in Australia's ALOP in relation to the negligible risk associated with entry of VERV in relation to non-juvenile marine fish other than salmonids. VERV is an endemic disease of non-salmonids. It is outside the scope of the risk assessment's disease evaluation of non-salmonids.

4.292 Australia's ALOP cannot be inferred from the measures applying to prevent the spread of regionally endemic diseases associated with the internal movement of non-viable domestic fish. Fish for human consumption are eviscerated at the point of harvest, and it is not commercial practice to harvest juvenile fish. The risk management of disease transmission associated with spawning fish populations within Australia is best targeted at live fish. There is scientific justification for applying a different set of measures for different products imported into Australia

4.293 Canada asserts that evisceration, inspection and grading, and restriction to imports to non-spawning adults, would meet Australia's ALOP. These measures in fact mirror Canadian commercial production practices. The 1999 IRA demonstrates that these commercial practices, individually or in combination, would not achieve Australia's ALOP.

4.294 The 1999 IRA identified diseases requiring risk management to meet Australia's ALOP for salmon. The risk management measures necessary to achieve Australia's ALOP were determined on a disease-by-disease basis (Chapter 5). For each disease agent identified as requiring specific risk management, AQIS summarised the key risk factors associated with that agent.

[113] *Ibid.*, sec. 8.1.2, citing the WAFIC Report.

4.295 AQIS then evaluated each risk management measure to determine the degree to which it would address the key risk factors. From this analysis, a measure or a combination of measures was determined as necessary to reduce the risk posed by that disease agent to meet Australia's ALOP. Only those measures determined to be necessary in each case to address the key risk factors were included. It was found that for none of these disease agents was a single measure sufficient to reduce the risk to the ALOP. Chapters 4 and 5 of the 1999 IRA concluded that for specific diseases, implementation of the measures singly would reduce risk, but not to the extent required to meet Australia's ALOP. Accordingly, a combination of measures (not identical in all cases but based on the risk factors for the particular agent) were implemented that would meet the ALOP.

4.296 The measures must address all of the risk factors of all of the diseases for which Canadian salmon is host to. Given the conclusions of the 1999 IRA, it is scientifically invalid to assume that one or more, but not all, of the measures would achieve Australia's ALOP for the diseases of concern in relation to salmon.

4.297 With respect to the claims in paragraph 82 of Canada's Oral Statement, paragraph 5.2.2 of the 1999 IRA describes disease risks associated with commercial processing. The commercial processing of imported salmonids could generate a significant volume of solid or liquid waste at the premises' point of discharge. Continuous long-term release of untreated waste at the premises' point of discharge could result in infective material building up to a biologically significant level in the aquatic environment.

4.298 To control risk associated with commercial processing, AQIS applies controls over commercial plants processing imported salmonid products with regard to location, waste disposal and related matters. To ensure that imported salmonids were not commercially processed in non-approved premises, only consumer-ready product will be permitted to be released from quarantine. Consumer-ready product is product which is ready for consumption/use by the end-user, or product which if further processed would not generate significant quantities of waste products of quarantine concern.

4.299 The 1999 IRA identified that some disease agents are associated with skin. For skinless fillets, commercial processing for consumer sale would generate minimal waste. Skinless fillets of any weight would be "consumer-ready". For skin-on fillets of greater than 450 grams, commercial processing would generate significant quantities of waste, for example from processing into skinless fillets.

4.300 "Consumer ready" addresses two distinct issues: the scientific basis for risk management measures; and the practical effectiveness of a measure. "Consumer-ready" cannot be examined independently of the risk management measures applied to processing.

4.301 In summary, the 1999 IRA identified as the primary concern the release of waste (skin, fins, flaps, bones, etc.) into the aquatic environment from commercial processing of imported product. Product with skin-on in pieces greater than a consumer-ready portion is likely to be subject to further commercial processing in Australia. This would produce significant concentrations and volumes of waste material that would present an unacceptable risk of biologically significant numbers of organisms capable of causing disease in salmon being released into the aquatic environment. Commercial processing must take place in approved premises that are required to dispose of wastes in a biosecure manner.

4.302 It would not be feasible for Australia to prevent the diversion of imported product "in any form" to commercial processing in non-approved premises. Accordingly, the cut-off point of 450 grams was not determined in any arbitrary way but in the light of advice from commercial sources about the size of salmon portions likely to be commercially processed. This is the least trade-restrictive way of managing waste processing risk.

4.303 The experts advising the Panel accepted that this explanation was plausible and could not find evidence on which to dismiss it. The experts agreed that Australia's measure could logically be connected with risk factors arising from proper consideration of exposure pathways. Canada has not put forward scientific evidence to refute Australia's contention that the consumer-ready requirement is based on genuine disease concerns. Canada's proposal would significantly increase the volume of waste identified in the risk analysis as being of higher disease risk. It would not meet Australia's ALOP. Nor has any third party suggested an alternative measure that would address waste processing risk. The European Communities, in fact, agreed that the 450 gram measure was justifiable.

4.304 Adoption of New Zealand's definition of "consumer-ready" would not be appropriate to Australia and would not achieve Australia's ALOP. This is explained in its answer to the Panel's question 32.

3. Alternative measures significantly less restrictive to trade

Canada

4.305 The alternative measures are significantly less restrictive to trade. First, although Australia concluded that evisceration alone is insufficient to achieve its appropriate level of protection, all salmon exported for human consumption is subject to far more primary processing than just evisceration. As Canada has already noted, product is thoroughly washed both inside and out, to remove residual tissues and mucus on the skin. In addition, it is required by law to be carefully inspected and graded.

4.306 The evidence shows that these procedures can reasonably be expected to reduce risk beyond that achieved by evisceration alone. In addition to evisceration, washing, inspection and grading, all Canadian farmed salmon, which includes all Atlantic salmon, and some wild salmon is bled thoroughly when it is killed. If the removal of blood-rich viscera can be expected to significantly reduce risk, then the removal of the blood itself can be expected to reduce risk even more. In addition, the gills may be removed in the course of primary processing.

4.307 All of these alternative measures are subsets of the measure that Australia would impose under its new policies. The alternative measures unquestionably would be less burdensome and would allow the importation of forms of eviscerated product that would still be prohibited by Australia’s new policies. The alternative measures are therefore clearly significantly less restrictive to trade than Australia’s new measures.

4.308 Based on the 1999 Report, Australia’s quarantine concern seems to be directed mostly, if not exclusively at a single pathway: untreated waste discharges from fish processing plants. If this is in fact the case, it is impossible to understand why Australia has chosen to restrict the product form in which imported salmon may reach the retail or hotel, restaurant and institutional (HRI) trade. It would obviously be significantly less trade restrictive, and technically and economically feasible, to simply ensure that imported salmon product imported in any form for further processing is only processed in facilities that do not discharge untreated waste.

4.309 This alternative would necessarily meet Australia’s appropriate level of protection. If the pathway that does not meet Australia’s appropriate level of protection involves untreated waste, there is no reason for Australia to prohibit the importation of head-on or any other form of product for processing provided that processors treat their waste. Nor is there any reason to deny access to consumers and the HRI trade to product that is not "consumer-ready" because the 1999 Report does not consider the waste generated by those consumers and the HRI trade to pose a significant risk.

4.310 In fact, if Australia is really concerned about substantial concentrations of waste materials such as skin from commercial processing, its measures are irrational. Thus, the measures that

Australia has chosen would not appear to meet its appropriate level of protection whereas the measures suggested by Canada would.

4.311 Second, this alternative is reasonably available, taking into account technical and economic feasibility. Under Australia's current measures, Australia is prepared to establish an approvals process for such facilities and, presumably, to enforce it. There is no reason why it would be any less technically or economically feasible to enforce a requirement that commercial processing facilities that process salmon do not discharge untreated waste.

4.312 Canada presumes that Australia already inspects and monitors its fish processing facilities for a variety of purposes, including cleanliness and safety and compliance with environmental regulations. Canada fails to see why the same sort of inspections could not feasibly ensure that only facilities that treat their waste process large quantities of salmon. Such monitoring could be undertaken in conjunction with deterrent-level penalties for non-compliance.

4.313 Canada's alternative also would be significantly less trade restrictive. Australia contends that, "the Panel cannot assume to itself that the HRI sector will only purchase whole salmon or that whole salmon is more attractive to the HRI sector than consumer-ready salmon". At no point has Canada said that the HRI sector "will only purchase whole salmon". The relative attractiveness of various salmon products depends on the uses to which they will be put. Canada has simply pointed out that there is a market for product other than in "consumer-ready" form and that Canadian product is excluded from that market by Australia's measures. Canada has quoted Graham Kerr that the preferred product in the HRI sector is whole head-on or head-off product. Canada has cited, among other evidence, the ABARE Report which states that around half of farmed salmon in Australia is sold as whole fresh, gutted and gilled fish. Canada has indicated that its principal salmon exports are whole, eviscerated salmon often head-on and often gills-in. Canada has also cited, twice, Mr. Vaile's admission that the AQIS requirements may make Canadian exports unviable and uncompetitive. Australia has not refuted any of this.

4.314 Thus, there is ample evidence before the Panel that Australia continues to ban product forms for which there is a demand and in which Canada trades. Any measures that would allow trade in these product forms would be significantly less trade-restrictive than Australia's current measures. The alternative to which Canada referred in paragraph 82 of its Oral Statement would allow trade in these product forms and would therefore be significantly less trade-restrictive than Australia's current measures.

4.315 Australia asks why Canada has accepted New Zealand's measures but not Australia's. Canada has not accepted New Zealand's measures. In the light of the alternative measures, Canada considers that New Zealand's packaging requirements would still be more trade-restrictive than required but would nevertheless be significantly less trade restrictive than Australia's current measures.

4.316 Furthermore, pursuant to AQPMs 1999/51, 1999/64, 1999/69 and 1999/79, Australia also imposes more onerous documentation requirements on salmonids than those it imposes on non-salmonids. According to the OIE Code, no documentation or certification related to fish health is required of imports of dead, eviscerated fish for human consumption. Canada therefore considers that Australia's extensive and detailed documentation and certification requirements as they relate to salmonid fish health are burdensome and unnecessary, particularly as Australia has failed to demonstrate how its specific documentation and certification requirements achieve its appropriate level of protection.

4.317 The most burdensome and unnecessary requirements are those that Australia imposes on dead, eviscerated salmonids for human consumption but does not impose on non-salmonids including uneviscerated fish imported for bait or feed. A measure that does not require, for example, a health

certificate, is by definition "reasonably available". It is also less costly, less time-consuming and less labour intensive and is therefore less trade-restrictive.

Australia

4.318 There is no other significantly less trade restrictive measure reasonably available, taking into account technical and economic feasibility. Canada's evidence is limited to a bare assertion that "all of the alternative measures are subsets of the measure that Australia would impose under its new policies. The alternative measures unquestionably would be less administratively burdensome and would allow the importation of forms of eviscerated product that would still be prohibited by Australia's new policies".

4.319 The alternative measures must be significantly less trade restrictive, and not merely less trade restrictive. Canada has not demonstrated in what way the alternative measures are less trade restrictive. Nor has it shown that the difference in treatment between the 1999 IRA measures and the alternative measures was significant. "Administratively burdensome" does not equate to "significantly less trade restrictive".

4.320 The 1999 IRA resulted in the application of the minimum (i.e. least trade restrictive) measures which achieve its ALOP. Only measures determined to be necessary for each disease to address the key risk factors are applied.

4.321 In terms of its claims in paragraph 82 of Canada's Oral Statement, Canada's proposal would involve replacing pre-arrival quarantine conditions with more administratively burdensome and complex post-arrival quarantine conditions. In accordance with cost-recovery, the additional costs of such arrangements would be reflected in the wholesale and retail price of imported product.

4.322 Canada has also not explained how such arrangements might generate significantly more demand for fresh, chilled or frozen salmon from Canada. It has not demonstrated in what way its proposal is "significantly less trade restrictive". Australia has provided evidence - in the form of company product lists - from commercial producers of salmon in Australia and the Pacific that there are good market opportunities for headless product. Canada has claimed that the preferred product in the "commercially important HRI sector is whole head-on or head-off product" (paragraph 23 of its first submission). Canada provides no documentation to substantiate this assertion.

4.323 While commercial traders are generally unwilling to provide details of their own market surveys, advice from traders and end-users in the Australian market indicates that whole salmon is normally used only as a ceremonial centrepiece. Traders have also advised that whole fish sold at the wholesale level is normally cut up into cutlets and fillets for sale to retail establishments (including restaurants) and private consumers. The ABARE report-in-progress found that, provided Canada was commercially-competitive, it could take advantage of the potential market growth opportunities identified for consumer-ready product.

4.324 The 1999 IRA identified specific key risk factors for each disease. For each risk factor, AQIS identified a range of risk management measures. These were based on normal commercial procedures (e.g. evisceration, de-heading), the operations of competent authorities and their interactions with industry (e.g. surveillance , monitoring and inspection) and common procedures in the international trade for animals and animal products (e.g. health certification, testing treatment and quarantine). In assessing the measures that would achieve Australia's ALOP, AQIS considered matters such as practicality and ease of implementation, cost of compliance, cost-effectiveness and impact on trade, subject to the overriding requirement that measures reliably contribute towards achieving Australia's ALOP. The importers association was also closely consulted on commercial practice and consumption to ensure that commercial trade would be feasible.

4.325 In his response to Question 20, Dr. McVicar advises: "In general, it appears that Australia has identified the minimum risk reduction measures which can be implemented to safeguard local stocks from the identified diseases of concern.".

4.326 In its third party submission, the United States claims:

> "Although our exporters are pleased with the market access that we have been promised we remain concerned about the size limitation particularly as no processing facilities have yet to be certified or licensed to be able to conduct the further processing required." (paragraph 6)
>
> "Limiting imports of salmon with skin or bones to 450 grams denies to US exporters the opportunity they have around the world, including the EU and Japan, to sell salmon whole to those importers who then cut or process the fish to the specifications of the market ..." (paragraph 7)

The United States presents analysis that purports to show that the United States can effectively service only one quarter of the Australian market for salmon products under the conditions Australia has set (paragraph 8).

4.327 Australian authorities await any request for approval of processing facilities in Australia. Such approval will be considered against the criteria that have been published. No request has yet been received.

4.328 Paragraph 7 is clearly misleading. The United States acknowledged in paragraph 6 that the opportunity to export headless, eviscerated salmon exists under the conditions Australia has established. Paragraph 8 is incorrect. The United States can serve all of the Australian market except for the small proportion of demand for whole (i.e. head-on) fish. This may be by exporting consumer-ready product, or by exporting head-off, gilled and eviscerated fish to approved processing plants in Australia.

I. ARTICLE 2.3

Canada

4.329 Australia's measure arbitrarily or unjustifiably discriminates between Australia and Canada, contrary to Article 2.3, first sentence, of the SPS Agreement. By imposing stringent restrictions on dead, imported finfish purportedly to prevent the spread of disease while imposing no restrictions whatsoever on the domestic movement of dead finfish, Australia's measure arbitrarily or unjustifiably discriminates between Australia and Canada, to Canada's detriment.

4.330 As previously discussed, there are a number of what Australia describes as "significant finfish diseases" that have a restricted or regional distribution in Australia. In all cases, the only internal restrictions that Australia applies to prevent the spread of these diseases are on live fish and their genetic material. No legislative restrictions relating to the spread of diseases of finfish currently apply to the movement, within Australia, of non-viable finfish for human consumption.[114]

4.331 Among the diseases that Australia addresses domestically without any restrictions on the movement of dead finfish are GUD, EHNV (an OIE notifiable disease) and VERV and EUS (both OIE "other significant diseases").[115]

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[114] 1999 Draft Report, sec. 1.4.4; Draft Ornamentals Report, sec. 1.4.4.
[115] 1999 Draft Report, sec. 1.3.2.

4.332 According to the 1999 Draft Report, VERV "causes epizootic disease characterized by high mortality rates in larvae and juvenile fish of several marine species".[116] These include turbot, jack, grouper, halibut, sea bass and barramundi. In fact, VERV is also known as "barramundi nodavirus". Nevertheless, Australia imposes no internal restrictions on the movement of susceptible species, including non-viable barramundi or their products.[117]

4.333 According to the 1999 Draft Report, EHNV is an iridovirus that causes seasonal outbreaks of disease, including occasionally in rainbow trout. The 1999 Draft Report is silent as to the impact of EHNV on farmed species,[118] but it does state that iridoviruses generally "can cause significant pathological effects on cultured fish".[119] The Report also states that the establishment of iridoviruses could have an effect on farmed tuna; that they could limit the prospects of developing mariculture industries; and that many of the species that could be susceptible to iridoviruses are economically significant in commercial and recreational fisheries in Australia.[120]

4.334 According to the 1999 Draft Report, EUS is a "serious disease of wild and farmed fish", affecting over 100 freshwater and several brackish water species.[121]

4.335 Thus, Australia imposes no controls whatsoever on domestic non-viable finfish to control the spread within Australia of serious diseases of proven pathogenicity to commercially significant species. This absence of controls extends even to susceptible species such as barramundi and rainbow trout.

4.336 Yet under its new policies, Australia will impose controls on imported non-viable finfish generally, will impose more stringent controls on imported barramundi and other specified species[122], and already maintains particularly restrictive controls on imports of salmonids. In the case of non-salmonids, controls will apply regardless of whether the imported species are known to host diseases of significance to wild or cultured fish species in Australia.

4.337 By imposing these controls on non-viable imported fish products without imposing equivalent controls - or in fact any controls on non-viable domestic fish products of acknowledged susceptibility to commercially significant diseases, Australia's measures arbitrarily and unjustifiably discriminate against other Members, including Canada, contrary to Article 2.3, first sentence, of the SPS Agreement.

4.338 Dr. McVicar has indicated his uncertainty as to whether Australia should appropriately restrict the movement of dead finfish internally in the absence of "detailed knowledge of the vulnerability of the fish populations in different parts of Australia to the diseases listed in the question". However, one can assume that Australia considers its fish populations in different parts of Australia to be vulnerable to the listed diseases because it has imposed restrictions on the domestic movement of live fish.[123]

4.339 It therefore is apparent that the concern Australia professes regarding the quarantine risk posed by dead fish or fish products extends only to imported fish. Australia does not seem to consider that once dead, its own fish present a significant risk of disease transmission, even when they may host significant diseases that may pose severe pathological dangers to known susceptible and commercially important fish populations.

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[116] *Ibid.*, sec. 6.2.1.
[117] *Ibid.*, sec. 8.3.2.
[118] *Ibid.*, sec. 7.4.2.2.
[119] *Ibid.*, sec. 7.4.2.1.
[120] *Ibid.*
[121] *Ibid.*, sec. 6.2.3.
[122] AQPM 1999/64.
[123] 1999 Report, pp. 87, 257 and 470.

Australia

4.340 The Appellate Body stated that: "In the context of an examination under Article 2.3, first sentence, it would first of all be necessary to determine the risk to Australia's salmonid population resulting from diseases, such as EHNV, which are endemic to some parts of Australia but exotic to others".[124] The Panel's mandate is limited to measures taken to comply, i.e. the measures applying to fresh chilled or frozen salmon. It is not the function of the Panel to reopen the original findings in respect of facts and evidence in existence at the time of the original findings. Canada has not adduced any new facts or other evidence in regard to EHNV, the only disease associated with salmonids.

4.341 The "identical or similar conditions" to be compared are the risk to salmonids and other fish arising from imported fresh chilled or frozen salmon from Canada with the risk to salmonids and other fish arising from endemic diseases - with a restricted or regional distribution - of non-viable fish of domestic origin.

4.342 There are no "identical or similar conditions" prevailing between Canada and Australia in respect of the measures taken to comply. Canada identifies the following diseases which are endemic to Australia: GUD, EHNV, VERV, EUS and herpesvirus. Only one of these diseases is associated with salmonids (EHNV in rainbow trout). Canada's claim is not based on a comparison of risks, but "equivalency" on the basis of measures, i.e. that Australia does not impose controls on the domestic movement of non-viable fish "equivalent" to the measures applied to imported finfish identified with exotic diseases.

4.343 Canada's comparisons also go beyond the Panel's mandate of measures applying to fresh chilled or frozen salmon from Canada. It refers instead to "dead, imported finfish".

4.344 Canada's evidence is rejected on the science and on the facts. Australia does not apply risk management measures to imported products in respect of the diseases identified by Canada. Fish for human consumption are, at a minimum, traded in eviscerated form to maintain shelf life. Australia does not have domestic populations of many of the species listed by Canada as disease hosts. There is no commercial trade in the non-viable form of some of the host species, e.g. there is no trade in dead goldfish. Some host species have a limited population distribution or correspond precisely with disease distribution. Some of the diseases are highly host-specific. Some of the diseases have been reported only rarely in fish older than larvae and juvenile fish, which are not normally commercially traded for human consumption. Australia has developed and applied technically feasible control programmes.

4.345 Australia concludes that the comparisons raised by Canada are outside the Panel's terms of reference. The comparisons are also invalid in the legal context of Article 2.3, first sentence. Canada has not demonstrated that there are "identical or similar conditions" prevailing. Much of its evidence is in the realm of assertion, factually incorrect or without any scientific basis. The factual and scientific evidence submitted by Australia rebuts any prima facie presumption by Canada.

4.346 Even if the Panel were to find that there were "identical or similar conditions" there is no evidence that the measures taken to comply arbitrarily or unjustifiably discriminate between Canada and Australia. Canada does not seek to address the second element. The sole basis of its claims is that there must be absolute equivalency of measures in risk management of all exotic finfish diseases and endemic diseases which are not widespread.

4.347 This is rejected by the risk assessment sections of the 1999 IRA's, as well as the Appellate Body's statement in EC - Hormones[125], and the experts', including Dr. Wooldridge's, response to Question 10. To the extent that "equivalence" is relevant, the 1999 IRA's addressed this in disease

[124] *Australia – Salmon* Appellate Body Report, para. 255.
[125] *EC - Hormones* Appellate Body Report, para. 78.

surveillance by exporting countries and in the recognition of subnational regionalisation of diseases in exporting countries.

4.348 Canada has the burden of proof to establish a prima facie presumption that different measures arbitrarily or unjustifiably discriminate between Australia and Canada in respect of the measures taken to comply. It has not put forward any evidence in this regard. Article 2.3 first sentence does not impose a requirement of equivalence in measures. Australia's evidence rebuts any presumption that the measures taken to comply do not take account of relevant "equivalence". The measures taken to comply do not arbitrarily or unjustifiably discriminate between Australia and Canada in any prevailing identical or similar conditions.

J. ARTICLE 8 AND ANNEX C

Canada

4.349 Australia's measures impose information requirements that are not limited to what is necessary for appropriate control, inspection and approval procedures, contrary to Article 8 and Annex C.1(c) of the SPS Agreement. Australia's certification requirement is part of a procedure to check and ensure the fulfilment of sanitary measures within the meaning of Annex C. More precisely, it falls under paragraph 1(c) of Annex C as an information requirement for control, inspection and approval procedures. The requirement that consignments of salmonid product must be accompanied by official certification confirming that the exported fish fully meet Australia's import conditions is a procedure to ensure the fulfillment of Australia's sanitary measures, within the meaning of paragraph 1 of Annex C.

4.350 To the extent that the information required in the certificate relates to the fulfillment of certain conditions, those conditions may themselves be measures, or parts of measures. However, the information that must be provided regarding the fulfilment of those conditions or measures may also fall within Article 8 and paragraph 1(c) of Annex C. The official certification requirement for salmonids in turn imposes certain information requirements. Australia's information requirements are not limited to what is necessary for appropriate control, inspection and approval procedures, contrary to paragraph 1"(c)of Annex C and, by extension, Article 8, of the SPS Agreement.

4.351 There are three reasons for this. First, consignments of non-salmonids that are not in "consumer-ready" form do not have to fulfil any of these three information requirements. Moreover, consignments of non-salmonids that are in "consumer-ready" form do not have to fulfil any information or certification requirements at all. There is no rational reason for this distinction. For example, as Canada has shown, Australia's determination that imports of non-salmonids pose an acceptable risk with respect to the disease agent VERV is predicated on those imports not being juvenile fish. Yet Australia does not require information that non-salmonid imports are not juveniles.

4.352 Second, these information requirements find no support in international standards as reflected in the OIE Code. Section 1.3.2 of the 1999 Draft Report leaves the impression that exporting countries should be prepared to supply importing countries with information of the sort required by AQPM 1999/51 in accordance with the OIE Code. The Report fails to explain that the OIE Code recommends the provision of this information for exports of live fish or their gametes only. The OIE Code also contains a model international fish health certificate for dead, uneviscerated fish.[126] However, the OIE Code prescribes no documentation or certification for dead, eviscerated fish products because such products are considered to pose a minimal risk of disease establishment.[127]

[126] *Ibid.*, p. 179.

[127] The OIE Code provides model international health certificates for live fish and gametes, dead uneviscerated fish, live molluscs and live crustaceans, but does not provide one for dead eviscerated fish (OIE Code, pp. 175-183, 187).

4.353 Third, the certification and information requirements for salmonids in AQPM 1999/51 are part of measures that are themselves inconsistent with Articles 2.2, 2.3, 5.1, 5.5 and 5.6 of the SPS Agreement. The certification and information requirements, therefore, cannot be considered necessary for appropriate control, inspection and approval procedures.

4.354 Australia seems to imply in its rebuttal submission that the obligations in subparagraph (c) of Annex C, paragraph 1 are limited to information requirements for additives or contaminants in food, beverages or feedstuffs.[128] Clearly, the wording of subparagraph (c) is illustrative rather than exclusive. Subparagraph (c) requires that information requirements be limited to what is necessary, "including" for the approval of additives or the establishment of tolerances for contaminants. There is no basis for Australia's contention that subparagraph (c) does not apply to approval procedures in the present case.

Australia

4.355 In the present dispute, the information requirements of certification not only implement but also directly reflect the risk management measures identified in the 1999 IRA. In these circumstances, Annex C.1(c) does not attach any additional requirements to the substantive provisions of the Agreement. Canada must establish that the underlying risk management measures are not appropriate control, inspection and approval procedures.

4.356 Canada identifies three "information requirements" allegedly of concern to it in regard to certification: (a) that the fish are derived from a population for which there is a documented system of health monitoring and surveillance; (b) that the fish are not juveniles or sexually-mature adults; and (c) that the fish are not derived from a population slaughtered as an official disease control measure. Canada advises that it does not export juvenile or sexually-mature salmonids for human consumption; and that it does not process for human consumption fish slaughtered for disease control purposes. Canada therefore cannot claim that conditions (b) or (c) impose any constraint on its commercial opportunities in the Australian market.

4.357 In relation to condition (a), Canada found no difficulty in certification for its salmon. The 1999 IRA also states that for countries with an established history of exporting animals, fish and animal products to Australia, AQIS recognises the appropriate government agencies in relation to fish health (monitoring and surveillance) and the approval and control of fish processing plants (provision of export certification).

4.358 As one of the very few OIE member countries with exceptional fish health status, Australia is justified to extend the general principles of the OIE while at the same time meeting WTO obligations.

V. SUMMARY OF THIRD PARTY SUBMISSIONS

A. EUROPEAN COMMUNITIES

5.1 The European Communities indicated that it was limiting its comments to legal issues which in its view were of systemic importance for the interpretation and proper functioning of the DSU and the SPS Agreement.

Appropriateness of Article 21.5 proceeding

5.2 The European Communities welcomed that the parties had agreed that this dispute about compliance with DSB rulings and recommendations should be resolved by recourse to Article 21.5

[128] Australia's Rebuttal Submission, para. 267.

instead of Article 22.6 of the DSU. The European Communities considered that this approach was the correct application of the legal requirements of the DSU.

Terms of reference and scope of the Panel

5.3 The European Communities considered that there was merit in Australia's arguments that the Panel's mandate was restricted to examining the existence or consistency with a covered agreement of measures "taken to comply with the recommendation and rulings" of the DSB in this case. The European Communities deemed that there were important systemic reasons[129] to confine the mandate of an Article 21.5 panel to examining the measures taken to comply on matters for which the DSB had made recommendations and rulings, excluding any claims about other measures.

5.4 The European Communities made a distinction between, on the one hand, old and new facts and evidence, i.e. those that existed at the time the original Panel decided the case, as opposed to those resulting from the implementation measures; and, on the other hand, old and new claims and arguments, i.e. those that existed (but failed to be invoked by Canada) at the time the original Panel decided the case, as opposed to those resulting directly from the implementation measures. The European Communities argued that claims Canada made based on old facts and evidence should be outside the scope of this Panel. Similarly, old claims on which neither the Panel nor the Appellate Body had made legal findings in the original proceeding were also outside the scope of this Panel. It followed that Canada could only advance claims directly related to the measures taken by Australia to comply with the legal findings and recommendations of the DSB in this case.

Rights of third parties

5.5 The European Communities noted that the Panel request had not been preceded by Article 4 DSU consultations. The EC warned against the development of such a practice, which was not in conformity with the DSU and which might, in certain cases, affect rights of defence and the rights of interested third parties.

Nature of implementing measures

5.6 The European Communities agreed with Australia that implementation might require legal and/or administrative action, depending on the circumstances of each specific case. The European Communities argued that the findings of panels addressed specific measures and, consequently, implementation should correct the aspects of those measures found to be inconsistent. The term “measure” had a wide meaning in the SPS context. Accordingly, the implementing measures should be decided on a case by case basis taking into account the constitutional and legislative requirements of the Member concerned. What was legally important in terms of implementation and compliance, however, was to satisfy in legal terms the rationale of the findings and recommendations of the DSB. How this was to be achieved technically was a matter for the complying Member.

Nature and results of risk assessment

5.7 The European Communities agreed with Australia that Canada could not fault Australia’s risk assessment methodology by simply arguing that another approach, for example a quantitative approach, would have been more correct and legally acceptable. In addition, the European Communities argued that Canada could not fault Australia’s new risk assessment by simply comparing its findings with those of the previous risk assessments (e.g. of 1995) which had been found to be inconsistent with Article 5. The essential point to keep in mind was whether Canada’s claims put into question the accuracy of the scientific basis of Australia’s new risk assessment or

[129] The systemic reasons include the accelerated nature of the procedure which restricts several procedural rights, due process and proper examination of scientific evidence, the lack of a reasonable period to comply with new legal findings, etc.

whether they simply pointed out alternative plausible scientific conclusions which might have been drawn from the same scientific evidence. In the view of the European Communities, Canada had not fulfilled its burden of proof to show that there was no rational relationship between Australia's implementation measures and the scientific basis of its risk assessment.

5.8 The European Communities agreed with Australia that, in principle, the chosen level of protection indicated the nature of the necessary measures, not the other way round. The European Communities also agreed with both parties that setting this level of protection was an autonomous right or a prerogative. Yet, in view of Australia's still somewhat unclear level of protection, the European Communities was not sure that Australia had demonstrated that there was a rational relationship between provisions on "consumer-ready form" (particularly the skin-off and weight requirements) and the risk assessment. In the absence of the relevant documentation, the European Communities was not in a position to express a clear and definitive view, although the latest explanations provided by Australia appeared to indicate that this requirement might be scientifically justified.

Nature of the measure necessary to achieve the appropriate level of protection

5.9 In the view of the European Communities, this case raised an important question on the relationship between risk, appropriate level of protection, and the nature of a measure that was not more trade restrictive than required. Both parties, but mainly Australia, discussed individual types of fish and illnesses, but then generalized their conclusions by applying them to more or all types of fish and diseases. The European Communities argued that this was not very helpful in the exercise of identifying alternative, less trade restrictive measures, in the sense of Article 5.6.

B. NORWAY

5.10 According to Norway, the question before the Panel was whether Australia had brought its measure into conformity with its obligations under the Agreement. In Norway's view, AQPM 1999/51 went a long way towards remedying the inconsistencies with the SPS Agreement, but in practice constituted a continued discrimination of imported salmon.

The requirements of a risk assessment

5.11 Norway agreed with Canada that Australia employed vague notions of the likelihood of entry of the different diseases, using qualitative terms such as "high" and "low". Furthermore, Australia scarcely quantified the consequences of disease introduction and used vague terms regarding what measures might achieve its desired level of protection, their effect on disease introduction and their relative effectiveness. This vagueness made it exceedingly difficult to judge whether there really was a risk of disease introduction through importation of eviscerated salmon and if any of the additional measures would noticeably reduce risk.

5.12 Norway recalled the Appellate Body's statement regarding the precision with which a level of protection must be established. Although a Member may use qualitative terms, the Appellate Body stated that:

> "[…] This does not mean, however, that an importing Member is free to determine its level of protection with such vagueness or equivocation that the application of the relevant provisions of the *SPS Agreement*, such as Article 5.6, becomes impossible. It would obviously be wrong to interpret the *SPS Agreement* in a way that would render nugatory entire articles or paragraphs of articles of this Agreement and allow Members to escape from their obligation under this Agreement." [130].

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

5.13 Norway argued that this requirement of precision also applied to the other elements of the risk assessment process that a Panel must be able to judge or evaluate in order to establish whether a Member had fulfilled its obligation under the Agreement. Norway concluded that Australia had failed to meet the requirements for a risk assessment in Article 5.1.

5.14 In Norway's view, the scientific studies undertaken in many countries and relevant OIE recommendations showed that the Australian measures went beyond what was necessary. Furthermore, Norway found it difficult to understand that none of these studies allowed Australia to make its risk assessment more quantitative.

The requirement that a measure be based on a risk assessment, be based on scientific principles and not be maintained without sufficient scientific evidence

5.15 Norway considered that Article 5.1, which required that measures be based on a risk assessment, should be read in conjunction with the basic obligation in Article 2.2, which required that all measures be based on scientific principles and not be maintained without sufficient scientific evidence. Norway noted that the documents referred to in AQPM 1999/51 were all marked "drafts". Thus the first element of this requirement, that there actually exist a risk assessment, was somewhat doubtful.

5.16 Assuming that a risk assessment existed, Norway did not dispute that Australia's measures were mentioned in the 1999 IRA. However, Article 5.1 read in conjunction with Article 2.2 required that there be a scientific foundation for establishing that a given measure would reduce the risk. The effectiveness of the measures evaluated by Australia in the 1999 IRA was only described in very general terms. This was also the case for the evaluation of the relative effectiveness of the different measures. Thus in Norway's view, the scientific underpinning for choosing a cocktail of measures with respect to salmon did not seem to meet this requirement.

The requirement that a measure be necessary and not more trade restrictive than required

5.17 Norway submitted that the level of protection must satisfy not only the requirement that it be precise enough to allow a meaningful comparison of measures, but *also* the basic requirement that it relate to a specific risk. It should be clear that the level of protection must relate to the risk of introduction of a disease, as it was the consequences (biological and economic) of such disease introduction against which a country wanted to protect itself. Norway welcomed the fact that Australia used disease-based risk assessment and disease-based risk management. However, Australia's level of protection did not apply to a particular disease, but to all salmon. While Australia's theoretical approach was correct – relating the risk to disease introduction – it did not seem to apply this approach in practice.

5.18 Norway argued that it was not clear that there was a need for different measures against other finfish imported *inter alia* for human consumption and containing the same diseases as salmonids. Taking *A. salmonicida* as an example, the pattern for disease introduction from non-viable salmonids and other non-viable finfish would in both cases be through waste introduced into the aquatic environment. The consequences for Australian salmon growers would be identical regardless where the bacteria came from. The likelihood of these bacteria being in imported fish did not seem to differ radically between salmon and other finfish, which were also imported in much larger quantities without evisceration, and so generally represented a much greater risk. According to Norway, Australia did not substantiate that the likelihood of disease spreading was different for one type of fish-waste as opposed to waste from other fish once it contained the bacteria. On the contrary, the 1999 IRA noted explicitly that infection could be transmitted horizontally. Yet, the conclusions in the 1999 IRA were radically different for the two kinds of fish, and the measures chosen were much more burdensome for salmon. Whether or not the intent was to protect Australian salmon farmers from competition, this was clearly the effect.

5.19 Norway emphasized one element of the Australian measure which seemed unrelated to the risk reduction purportedly desired by Australia. Norway found it difficult to see how a requirement that fish and fillets be "not more than 450 grams" and "pan size" had a relevant bearing on the risk, and found that Australia gave no rational explanation in the 1999 IRA. Since restaurants and hotels normally required fish and fillets of greater size, Norway argued that this requirement served only to protect this market for Australian product, and thus violated Articles 2.2 and 5.6.

5.20 In response to a question from Australia regarding alternatives to the 450 gram requirement, Norway argued that further processing in Australia would presumably include smoking or canning. With respect to smoking, the problem of waste did not necessarily arise, as smoked salmon in whole sides was often traded with skin on. Furthermore, if Australia instead required that all domestically smoked salmon fulfil the same requirements as imports of smoked salmon, the problem could not arise. (Norway did not advocate such restrictions on smoking, however). Australia had not substantiated that waste (e.g. skin, bones, gills) from normally traded eviscerated fish represented a quarantine risk that required such a restriction. Furthermore, if processing facilities were a problem, strict controls of these installations would achieve the same result with less restrictions on trade.

5.21 Norway noted that food preparation in restaurants – which always demanded large fillets of more than 450 grams, could not be deemed as further processing. A normal portion of skin-on fish fillet for one person would be between 250 and 300 grams. Under the Australian requirement, it was impossible for a family of two or more persons to prepare a salmon dinner without buying several portions instead of one larger piece. The 450 gram requirement therefore seemed irrational and could only be considered completely arbitrary.

C. UNITED STATES

5.22 The United States first addressed the procedural issue of the relationship between Articles 21.5 and 22 of the DSU. The United States argued that the Panel need not and should not rule on this issue, since it had been left to the ongoing negotiating process to resolve, consistent with Article 3.2 of the DSU.

5.23 A second procedural issue concerned the broad and inclusive approach taken by the Panel in defining the scope of the proceeding, with which the United States agreed. The United States considered the Panel's approach to be the only one consistent with the purpose of the WTO dispute settlement system as reflected in Articles 3 and 21 of the DSU: the prompt settlement of disputes.

5.24 The United States welcomed the progress in the implementation of the DSB rulings and recommendations Australia had made since July 1999, which allowed importation of salmon fillets or cutlets in "consumer-ready" form. The United States reported that Australia and the United States had agreed in November 1999 upon the terms for certification of US salmonid products to be exported to Australia. However, this certification would still not permit the importation of fresh or frozen salmon with skin or bones in a portion greater than 450 grams unless they were to be further processed in quarantine to a consumer-ready form at a certified Australian processing facility. The United States remained concerned about this size limitation, particularly as no processing facilities had as yet been certified to be able to conduct the further processing required.

5.25 Australia's 450 gram limitation denied US exporters the opportunity they had elsewhere around the world to sell salmon whole to importers, who then cut or process the fish to the specifications of the market. Headed, eviscerated and gilled Pacific and Atlantic salmon, either cultured or wild, weighed from 2 to 20 kg, with the average typically in the 2 to 10 kg range. Boneless fillets from the average fish would range from 800 to 4000 grams According to the ABARE report, *Salmon Imports into Australia* (Australia's exhibit U), whole fresh fish which was gilled and gutted constituted half of the Australian market for salmon, while salmon for smoking, which used whole fish as well, constituted between 20 and 25 per cent of domestic production. The balance – approximately a quarter of the market – was sold primarily as fillets and steaks (including bulk packs

of these), which was the lower end of the market. Thus, US salmon exports were relegated to serving less than a quarter of the market – and even there, they could not compete with domestic fillets or steaks exceeding 450 grams.

5.26 The United States agreed with Canada that there was no scientific basis for this significant restriction on trade. The United States argued that a July 1999 regulation could not be based on a risk analysis that had only been completed in November 1999. (Earlier versions of the 1999 IRA were labelled "draft"). Government limitation on the size of imported product could not be expected to change the overall risk of pathogen introduction, if such a risk existed.

5.27 The United States cited the quantitative risk assessment prepared by New Zealand (Stone et al., 1997), which estimated that the risk of introducing *Aeromonas salmonicida* into New Zealand in a whole, eviscerated fish, with a 99 per cent confidence interval, conservatively would be less than one in a million per tonne of imported fish. This assessment was based on the import of cultured or wild salmonids from anywhere in the world. If considering only wild Pacific salmon, the estimated odds of introduction of *Aeromonas salmonicida*, with a 95 per cent confidence interval, was a hundred times less likely, or one in a billion per tonne imported. The quantitative risk assessment performed by New Zealand, and clinical data gathered by United States and Canadian researchers, indicated that the bacteria and viruses of concern to Australia were very unlikely to be introduced in headed, gilled and eviscerated salmon products *of any size*.

5.28 The pathogen screening by United States and Canadian researchers was based on whole fish, and the quantitative assessment conducted by New Zealand was based on head-on eviscerated fish, both of which presented a higher likelihood of harbouring pathogens than the fillets in question. Accordingly, the likelihood of importing pathogens in a skin-on fillet of any weight was even smaller than the New Zealand statistic provided for the fish in the studies mentioned above, of one in a billion per tonne imported. Given the relatively lower projected volumes of import (the entire Australian market being less than 10,000 tonnes) the risk of introducing a salmonid pathogen into Australia for all practical purposes approached zero.

5.29 According to the United States, this conclusion was bolstered even further by the fact that all of the studies mentioned were conducted on fish that had not been frozen. The risk of introduction of exotic pathogens into Australia would be further minimized by the freezing of salmon or salmon products prior to export. Most pathogens were significantly reduced by freezing, while cooking would kill all pathogens.

5.30 In response to a question from Australia regarding whether New Zealand's risk assessment constituted a basis for risk management by Australia, the United States explained that it had referenced the New Zealand risk assessment in the context of supporting United States and Canadian researchers who noted the similarity of pathogen-free findings in whole fish. The United States agreed with Canada that although the New Zealand packaging requirements were unnecessary and trade restrictive, they were less trade restrictive than the regulations Australia had implemented.

5.31 In response to a second question from Australia regarding alternatives to the 450 gram limitation, the United States noted that the burden of proof was on the complaining party to identify a measure that satisfied the requirements of Article 5.6, and any alternative identified by the United States would not be relevant to the Panel's findings. Since some salmon greater than 450 grams would not be further processed in Australia, but consumed directly by the end user, Australia's measure was more trade-restrictive than required, since it restricted trade in product that did not pose the alleged risk.

5.32 The United States explained that it sought the opportunity to sell salmon that was not only in fillet form, but salmon that was headed, gilled and gutted. Even in the case of fillets, it was commercially preferable to sell fillets skin-on, as the skin helped to maintain the physical integrity of the salmon, reduce moisture loss and increase storage life of the product. Fillets of salmon produced

in the United States typically weighed between 800 and 1500 grams, although King salmon fillets could weigh as much as 4000 grams. Typical European requests were for 800 to 1200 gram and 1200 to 1600 gram fillets. Furthermore, fillets purchased by the consumer would be cooked skin-on, which would kill pathogens found on or in the skin. Headed and gutted product would also frequently be cooked as it was, thereby killing any pathogens if they were present.

5.33 With regard to Australia's concern over commercial wastes, the United States concurred with Canada that processing facilities in an environment with a conservative level of protection would require treatment of waste products for any fisheries products.

5.34 The United States proposed that a less trade restrictive measure would allow the direct importation of any salmon product, regardless of weight, for direct consumer consumption and purchase by the retail sector, distributors and institutional users. With respect to salmon destined for further processing, the United States did not believe there was any risk from the importation of headed and gutted product or the resultant waste from processing commercial volumes of fish. However, any response to alleged risks from processing should not be dealt with through size or volume restrictions on imports, but rather through requirements that the processing facility dispose of its wastes through a municipal sewage system or by heat-treating the wastes at a rendering facility.

VI. PANEL CONSULTATION WITH SCIENTIFIC EXPERTS

A. PANEL PROCEDURES WITH REGARD TO SCIENTIFIC EXPERTISE

6.1 The Panel recalled that paragraph 2 of Article 11 of the SPS Agreement provided that:

> "In a dispute under this Agreement involving scientific or technical issues, a panel should seek advice from experts chosen by the panel in consultation with the parties to the dispute. To this end, the panel may, when it deems it appropriate, establish an advisory technical experts group, or consult the relevant international organizations, at the request of either party to the dispute or on its own initiative."

Noting that this dispute involved scientific or technical issues, the Panel consulted with the parties regarding the need for expert advice. The Panel noted how valuable such expert advice had been during its previous examination of this matter, and further that the evidence submitted to it included several new risk analysis reports. The Panel decided to seek scientific and technical advice as foreseen in paragraphs 1 and 2, first sentence, of Article 13 of the DSU, and pursuant to paragraph 2, first sentence, of Article 11 of the SPS Agreement.

6.2 The Panel initially considered seeking advice from two of the four experts which had advised the panel in the original dispute, as well as from a third expert with experience in the area of the application of sanitary measures. The parties were invited to comment on this suggestion by the Panel and in particular to state any compelling objections they might have with regard to any individual, or to suggest other experts. The Panel than selected three individuals taking into account the comments of the parties and the need for expertise in a number of areas. These experts were requested to serve, in their personal capacities, as individual advisers to the Panel.

6.3 The Panel, in consultation with the parties, prepared specific questions which it submitted to each expert individually. The experts were requested to provide their responses, in writing, to those questions they felt qualified to address. The parties agreed that their written submissions to the Panel, including the written versions of their oral statements, be provided to each of the selected experts. The written responses of the experts were provided to the parties, and the parties were given the opportunity to comment on these.

6.4 The experts were invited to meet with the Panel and the parties to discuss their written responses to the questions and to provide further information. A summary of the written responses provided by the experts is presented below.[131]

6.5 The experts selected to advise the Panel were:

Dr. Gideon Brückner, Director, Food Safety and Veterniary Public Health, South Africa;

Dr. Alasdair McVicar, Principle Scientific Officer, Aberdeen Marine Laboratory, Scotland, United Kingdom;

Dr. Marion Wooldridge, Department of Risk Research, Veterinary Laboratories Agency, United Kingdom

B. QUESTIONS TO THE EXPERTS - COMPILED RESPONSES

Question 1. Does the 1999 Import Risk Analysis on non-viable salmonids and non-salmonid marine finfish (1999 Report), in particular in so far as it relates to salmonids,

(a) evaluate the likelihood, i.e. probability, of entry, establishment or spread of the diseases of concern to Australia identified in the report?;

(b) evaluate the likelihood, i.e. probability, of the potential biological and economic consequences associated to these diseases?;

(c) evaluate the likelihood, i.e. probability, of entry, establishment or spread of the diseases of concern according to the sanitary measures which might be applied?

6.6 **Dr. Brückner** agreed that the 1999 IRA submitted by Australia was a qualitative assessment for the reasons outlined by Australia in the 1999 IRA and in their first submission (paragraphs 104 – 106). He further considered that the 1999 IRA was conducted in accordance with the OIE guidelines for import risk assessments and in accordance with the requirements of Article 5.2, 5.3 and Annex A(4) of the SPS Agreement. He observed that one of the main arguments Canada raised against the 1999 IRA was that it did not evaluate likelihood, because the IRA was qualitative and probabilities were not expressed in quantitative terms but in alleged subjective terms such as "low", "moderate", etc. A quantitative assessment was not required by the SPS Agreement. The fact that other quantitative IRAs existed (assessment by Vose on *A. salmonicida* and *R. salmoninarum*), did not put Australia under any obligation to do the same for an assessment of the same products or commodities concerned. Even if a quantitative assessment were possible, Dr. Brückner questioned whether a quantitative assessment for the same purpose and of the same magnitude as the 1999 IRA, would have produced a different outcome in terms of the evaluation of the likelihoods identified in the question. He noted that no evidence had been submitted to prove the contrary.

6.7 Dr. Brückner further noted that Canada had raised questions about the use of alleged subjective and vague indicators ("low", "moderate", etc). However, no alternative terminology had been suggested to be used in the context of a qualitative assessment or to enable an explicit indication of probability that the risk did not exist. The use of these terms should be evaluated in the context of the IRA in general and in respect of the process and methodology used to come to these conclusions. The use of these terms should also be judged as a way of expressing the outcome of a structured evaluation of several factors - i.e. to determine if risk management interventions needed to be considered or not. He noted that the conclusions in the New Zealand IRA of 1997 were also expressed in a similar qualitative manner.

[131] A transcript of the meeting with the experts is attached as Annex 1 of this document.

6.8 Dr. Brückner considered that the crucial question was whether the use of these qualitative terms would make the evaluation of the likelihood, i.e. the probability, of entry, establishment or spread of the diseases of concern according to the sanitary measures which may be applied, impossible or questionable. Judged on the process and methodology applied – especially in respect of the assessment and risk management factors for the diseases concerned – he believed that the 1999 IRA succeeded in evaluating the likelihood of entry, establishment or spread of diseases, as well as the potential consequences, and this on the basis of the measures which might be applied.

6.9 With regard to the probability of entry, **Dr. McVicar** observed that there was international recognition, incorporated into legislation, that removal of viscera from fish carcasses reduced the risk of disease transfer. The 1999 IRA identified the two main areas of remaining risk which were of particular significance - firstly, that blood and residual blood rich organs are a major focus in the body of fish of important viral and bacterial diseases and secondly that viscera and other inedible parts of the fish body are of low value and may be disposed of either by safe legal or unsafe means. The risk associated with both of these areas was addressed and the level of viable infectious agents likely to be remaining in gutted carcasses in the parts usually removed and disposed of before human consumption was considered by Australia to warrant additional safeguards. The qualitative risk analysis undertaken was transparent in the criteria used to establish which diseases were of concern to Australia and in the identification of areas where risk management measures could be used to reduce the probability of entry of the pathogen. The analysis provided a well-reasoned argument why the measures proposed differed from these previously used in international trade in similar products

6.10 In terms of the probability of establishment or spread, Dr. McVicar noted that the IRA took into account the available published information on mechanisms of transmission of the diseases of concern and made a valid assessment of the probability of the establishment or spread of each in Australia.

6.11 With regard to evaluation of the likelihood of potential consequences, the diseases identified as of concern by Australia were all internationally recognised as serious diseases of salmonids with significant biological and economic consequences. There was no reason to consider that if established in Australia they would not have similar consequences in that country in susceptible species. Possible effects on other species, where there was no previous information available, were speculative.

6.12 In terms of evaluation of probabilities according to the measures which might be applied, the 1999 IRA recognised that even in eviscerated product which may contain some viable infection, there was a level of risk which was related to the extent containment measures could be implemented during further processing in Australia and to the proportion of the import which was rejected and subsequently disposed of. This risk was progressively reduced the more the product was processed and there was less potentially infectious material being discharged with effluent or rejected. The residual risk remaining after gutting and washing was considered by Australia to exceed their ALOP and this concern was addressed by introducing measures to limit the amount of non-consumer ready product being imported and, where further processing may occur, by controlling plants involved in this activity.

6.13 The level of infective agent in the source material at the point of origin critically influenced the level of the agent which risk reduction measures sought to manage at different steps through the chain of events leading to the final risk associated with imported salmonid product. As the levels of fish disease in both farmed and wild populations of fish were subject to substantial fluctuations, a key element in the reduction of risk from fish diseases was the regular maintenance of a good awareness of the level of the diseases of concern in the fish population providing the product. Appropriate data could only be obtained through a satisfactory system of regular inspection and monitoring, as required by Australia. Similarly, the use of inspection procedures, which were a normal part of quality assurance mechanisms in fish processing factories, to screen out clinically diseased fish would have a marked positive effect in risk reduction.

6.14 **Dr. Wooldridge** noted that Chapter 4 of the 1999 IRA, entitled "Risk Assessment: salmonids", was where the evaluation of the risk from each of the diseases should logically be found. The chapter contained a section, 4.2, entitled "Risk Assessments for High Priority Diseases", within which sections 4.2.1 to 4.2.15 each considered a specific disease. This was defined (section 4.1.3) as being an unrestricted risk estimate; that is, no safeguards had been considered in the assessment presented at that point. In addition, for each disease, this unrestricted risk estimate was compared with Australia's 'appropriate level of protection' (ALOP), which automatically lead to a decision on whether any risk management measures were warranted. Section 4.3 was a summary of the import risk assessment for salmonids.

6.15 With respect to the evaluation of the probability of entry, establishment of spread of diseases, for each disease considered, there was a section entitled Release Assessment, and one entitled Exposure Assessment. For each section, information was given, then an estimate of the probability of occurrence was given in qualitative terms, ranging from negligible to high (definitions: page 17). In addition, these findings were summarised in boxes at the end of each disease, along with a summary of Probability of Disease Establishment. On initial examination, it therefore appeared that the probability of entry, establishment and spread had been evaluated qualitatively.

6.16 Whether this was the case, however, in fact depended upon whether the information available had been utilised in an appropriate manner, and this in turn depended upon: the following issues:

6.17 whether or not any conclusion based upon primary information given was reasonable (relevant especially to Release Assessment and Exposure Assessment);

- whether or not any overall conclusion based upon sequential previously made conclusions followed logically from that sequence (relevant especially to Probability of Disease Establishment);
- whether all available appropriate pieces of information had been taken into account (relevant here especially to Exposure Assessment and Probability of Disease Establishment); and
- whether the definitions of the qualitative terms were reasonable definitions, and whether those terms were used reasonably (which Dr. Wooldridge addressed in her response to Question 2).

6.18 Looking first at the Release Assessment sections, Dr. Wooldridge indicated that the conclusions given for probability of "Release" in general, based upon the information given, were reasonable. However this would have been much easier to ascertain with certainty if the information presented, and the conclusions reached, had been separated into sections corresponding to probability of infection of fish and, given infection, probable titre levels by tissue. Presenting the information in this format would maximise transparency of a risk assessment. Currently, the arguments were presented as an amalgam of these two issues. In addition, Dr. Wooldridge expressed her opinion that some specific arguments were highly likely to lead to bias which, given the subjective nature of qualitative risk assessments, might inadvertently lead to unsafe conclusions. She gave the following example:

> Section 4.2.1, IHNV.
>
> *Page 101, Information provided: Key findings, second paragraph.*
>
> "In apparently healthy, eviscerated adult salmonids, the titre of virus, if any were present, would be extremely low (probably undetected by traditional methods)".

Page 106: Box 4.1 Risk assessment; Release assessment (R).

"The probability of .... (IHNV) entering Australia as a consequence of the unrestricted importation of eviscerated salmonids would be low."

"Because IHNV is primarily clinically expressed in juvenile salmonids, and there is a greater probability of a significant viral titre in juvenile salmonids and sexually mature salmonids, the probability associated with the unrestricted importation of these lifecycle stages would be moderate."

6.19 Did the risk conclusion follow reasonably from all the information? There appeared to be a difference in the probability of virus being present in different salmonid lifecycle stages. The overall release probability was given as low. The release probability for certain groups was given as moderate. This implied that there were groups for whom the release probability was less than low (as the implication was that low was an average for all groups). Groups where the release probability was lower than low were not mentioned in the release assessment, however, one example of such a group was (it would appear) identified in the key findings as having an "exceptionally low" titre (i.e. adults). If juveniles were being mentioned specifically in the release assessment, Dr. Wooldridge thought it would be logical to also mention this group of adults in the release assessment, in order specifically to reduce the likelihood of perception bias. Given the subjectivity involved in qualitative risk assessments, perception bias might well affect assessment and must be reduced wherever possible. This difficulty in interpretation of information to ensure logical conclusions would be much more obvious (and concurrently reduced) by differentiating, as suggested above, between probability of infection, and probable titre of pathogen given infection.

6.20 Dr. Wooldridge expressed the view that some significant information had been systematically left out of the sections entitled Exposure Assessment for each disease considered. For thirteen of the 15 diseases considered, an exposure assessment was given (for the remaining two, it was not applicable as the risk of release was considered negligible). This assessment comprised: seven diseases at Very Low; five at Low; and one at Low/extremely low. These outcomes appeared to be based only on the information given in the specific disease sections.

6.21 However, section 1.7 also dealt with Exposure Assessment in general terms, and in particular on page 34 there was a diagram of the assumed exposure pathways, with what appeared to be an indication of the proportion of total imported product likely to pass along each of those pathways, indicated by thickness of line. From this, it would appear that the probability of the product itself getting into the aquatic environment was likely to be exceptional by most pathways (five of seven). The two remaining pathways were the Domestic Sewerage system (annotated as heavily diluted, and itself not a highly probable pathway), and the Use as Bait pathway which, judging from the text (for example, section 1.2, page 5), was a route with a much higher probability of applicability to the non-salmonid group of fish which may sometimes be imported specifically as bait. One might therefore reasonably conclude that the Bait pathway for salmonids for human consumption was an exceptional route. In addition, the 1999 IRA on page 35 described the "extremely low probability of imported product following rare or exceptional pathways ...".

6.22 Dr. Wooldridge stated that in her opinion this section of information and the conclusions drawn from it did not appear to have been taken into account in the individual exposure assessments for specific diseases in salmonids. Taking this into account alongside a thorough re-examination of the disease specific information might well lead to the conclusion that for each disease the overall probability of aquatic exposure to salmonid product was exceptionally low, at the highest.

6.23 With regard to the sections entitled Probability of Disease Establishment, taking only the disease sections as they stand, each appeared to be internally consistent. However, if the additional information regarding exposure assessment detailed above was taken into account, then she believed it was highly probable that different conclusions would be reached, with the probability of

establishment being lower in all cases. In summary, therefore, Dr. Wooldridge indicated that in general the probability of disease entry had been evaluated (but with reservations, including those expressed in her response to Question 2). However, she did not believe that the probability of the establishment or spread of disease had been evaluated.

6.24 In terms of the evaluation of the probability of the potential consequences, for each disease considered there was a section entitled Consequence Assessment, and an estimate of the probability of the consequences considered had been given in qualitative terms, ranging from negligible to catastrophic (definitions, page 19). In addition, these findings hade been summarised in boxes at the end of each disease. On initial examination, it therefore appeared that the probability of the consequences considered had been evaluated qualitatively. Further, Dr. Wooldridge opined that, in general, the arguments were internally consistent within each disease section, and the consequences of the disease, if it became established in Australia, had been assessed according to the definitions given (box 1.6, page 19). However whether those terms were then used reasonably to compare one disease with another, and to assess the necessity for risk management procedures was a separate issue which Dr. Wooldridge addressed in her response to Question 2.

6.25 Regarding the third part of the question, on the evaluation of the probabilities according to measures, Dr. Wooldridge observed that Chapter 5, entitled "Risk Management: Salmonids", was where the evaluation of the effect of safeguard measures for each disease should logically be found. Section 5.2 of the chapter described available safeguard measures, and sections 5.3 to 5.6 dealt with the application of these safeguard measures. Whether a particular disease in a particular stratum of the fish population required safeguards was based upon whether it met Australia's ALOP. If, in section 4, it was concluded that this ALOP was met by the unrestricted risk assessment, then no risk management measures were considered necessary. If the unrestricted risk assessment exceeded Australia's ALOP, then the implementation of risk management measures was considered warranted.

6.26 Dr. Wooldridge indicated that there were two issues here. The first concerned the derivation of the ALOP criteria, and this she addressed in her response to Question 2. The second was whether the probability of entry, establishment or spread of the disease had been evaluated according to the sanitary measures which might be applied. For each disease which did not meet the ALOP criteria, risk factors had been identified, and a list of possible risk management measures described. In addition, the particular risk factor which each measure would address was indicated. However, Dr. Wooldridge noted that she was unable to find any indication that the probability of any individual (or indeed any combination) of measures had actually been assessed specifically with regard to the likelihood of bringing the assessed risk below Australia's ALOP. Therefore, in her opinion, the probability of entry, establishment or spread had not been evaluated according to the sanitary measures which might be applied.

Question 2. Do you for any other reason consider that the 1999 Report is not a proper risk assessment? If so, why?

6.27 **Dr. Brückner** recalled his view that the 1999-Report was conducted in accordance with the guidelines of the OIE for import risk analysis. Furthermore, the 1999 Report fulfilled the requirements of Article 5.1, 5.2 and 5.3 of the SPS Agreement without hindering the application of other relevant provisions of the SPS Agreement. He believed the 1999 Report could therefore be considered as a proper risk assessment.

6.28 **Dr. McVicar** stated that the 1999 Report fulfilled the OIE-outlined requirements of a qualitative risk assessment by identifying the hazards of concern, the possibility of their transfer to Australia, the possible consequences of transfer and the management steps which could be taken to reduce risk to an acceptable level. The underlying principle that quantitative risk analysis be developed as soon as possible by accumulating numerical data on the main risk areas was severely constrained with fish diseases in general due to the lack of adequate data in key areas. In both

quantitative and qualitative risk assessment, there were inevitable difficulties and differences of opinion in deciding exactly what constituted an acceptable level of risk. Science could not provide definitive answers to this essentially social or political problem.

6.29 **Dr. Wooldridge** replied that the 1999 Report was set out in an appropriate manner, and contained the appropriate information, in order that it might be described as a risk analysis report containing within it a risk assessment. However, Dr. Wooldridge believed that the risk assessment was flawed and therefore may be considered not to be a proper risk assessment. She indicated that it did not use appropriate methods to properly assess the risks.

6.30 With respect to terminology, the terms used to describe the probability of an event occurring (Box 1.4, page 17) were, in themselves, acceptable qualitative terms. However, given the unavoidably subjective nature of such terms, Dr. Wooldridge did not believe that it was possible, in qualitative assessments, to easily grade probabilities with discriminations as fine as "low", "very low" and "extremely low" except as comparisons *within the considerations of one specific disease*, when for example a safeguard measure had been put in place which might be considered to reduce a probability from perhaps "low" to "very low". She certainly did not believe that one could with any accuracy discriminate as finely as this when comparing across diseases, unless a quantitative value range was assigned to each description. And if a quantitative value range were assigned, then in order to assign the qualitative designator correctly according to one's own definition, one MUST have performed a quantitative assessment to know in which range it fell.

6.31 Looking at the definitions given for these terms, she observed that "low" was defined as unlikely, that "very low" was defined as rare, and that "extremely low" was defined as very rare. In her view, this was merely changing one set of subjective words for another. To attempt to discriminate so finely, and to be certain that the assigned probability when applied to one disease indicated precisely the same level (or range levels) of risk as it did when applied to another disease, quantification must be undertaken. This use of these qualitative terms was therefore misleading in its implication of a level of precision which could not be achieved by qualitative methods.

6.32 With respect to the use of the risk evaluation matrix and the ALOP criteria., in the formulation of this matrix, a similar level of unachievable precision appeared to be assigned to the consequence assessment terminology. This, in conjunction with the implied, but unachievable, precision assumed in the estimation of disease establishment was combined to produce a matrix used for decisions on whether each unrestricted risk for each specified disease fell above or below Australia's ALOP. Thus the decision on whether further measures were required was based on *finely* categorized but highly imprecise and subjective discrimination techniques. A slight subjective shift in terminology could completely unintentionally quite easily move a specific disease from "yes" to "no" and *vice versa.* While a matrix such as this could reasonably be used as a guide as to which were the diseases of greatest concern, Dr. Wooldridge opined that this methodology was not appropriate for the highly "precise" use to which it was being put, and lead to unsafe conclusions. Such precision in discrimination could only be obtained by utilising quantitative methods.

6.33 In general, Dr. Wooldridge noted that her concerns over the methodology used thus far to assess the risks, and in particular the area dealing with exposure, had resulted in a lack of confidence in the final level of risk attached to the establishment of disease. This in turn made it very difficult for her to answer a number of subsequent questions based on the outcomes of the evaluation of these risks, in particular those concerning the management actions, for example Questions 4, 9, 17 and 20. When considering parts of some of these questions, she initially tried to compare different sections from the various risk analysis documents, to see if the necessity for, and level of, safeguards applied to one fish product in one situation was consistent with the estimated level of risk when compared with the safeguards and estimated levels of risk for another product in another situation. However, conclusions from this type of exercise meant assuming that the estimated levels of risks were reliable, and since in her opinion they were not, she came to no useful conclusions from this type of exercise.

Question 3. When carrying out a qualitative risk analysis, should consideration be given to volumes of imported commodities and to time periods?

6.34 **Dr. Brückner** responded that the historical events preceding the introduction of an SPS measure (i.e. whether diseases have been recorded or have been introduced in the absence, during the time-period, of a new proposed measure), could be of some value in making a qualitative judgement of the likelihood of a disease being introduced with or without the implementation of a new measure. However, the relative weight allocated to available historical information in respect of volumes imported over a certain time period should be applied with caution. The fact of the non-occurrence of diseases as result of unrestricted imports of non-viable salmonids prior to 1975, was for example weighted relatively heavy in the 1995 Draft Report of Australia; the same was not done in the 1999 IRA. This could be attributed to the fact that the 1999 IRA was conducted as a more structured way of assessment based on scientific facts to reach a decision on the feasibility of applying risk management procedures.

6.35 In the 1997 New Zealand IRA, where the authors explain the relative value of qualitative assessment, it is also rightfully stated that "… *the risk will not vary from tonne to tonne or from year to year as result of an earlier result i.e. no disease introduction during importation of 1,000 tonnes of product does not increase the probability of introduction with the next 1,000 tonnes imported*".

6.36 **Dr. McVicar** observed that qualitative risk assessment relied heavily on previous experiences, and a lack of previous episodes lead to an increasing perception of low risk. However, the consequence of an incident happening specifically as a result of an activity would immediately and completely change the perceived risk. To use a practical example from personal experience, as ISA had not occurred in salmon farming in Scotland during 20+ years of existence, with trade controls in place, the risk from this disease was considered to be low for over 10 years after its discovery in Norway. This was despite the proximity of the two countries. However, the appearance of the disease in eastern Canada in 1996-97, with no apparent transfer links, indicated a much higher risk of a similar outbreak in Scotland. Similarly, the first outbreak of a fish disease in Australia associated with an imported product would elevate what may have been considered a low risk to high risk status.

6.37 Irrespective of the disease level in the source of the commodity, each import episode would carry the same level of risk of the disease agent being present, with potentially the same consequences arising from its establishment. As the risk was repeated on each occasion as if the previous risk had not occurred, the frequency and time span that the commodity had been imported was not relevant. This assumed that the risk level did not change. However, within an individual import, the number of fish would have a bearing on the risk level, particularly if a disease is present at low levels. This was illustrated by the practice during disease surveillance when a probability table was used to determine confidence level of the presence or absence of disease. For example, a sample of 150 fish from a population of 100,000 or over would give a 95 per cent confidence that at least one infected fish would be detected if the disease prevalence level was equal to or greater than 2 per cent. For a 95 per cent confidence of detecting a 5 per cent level of disease from the same population, 60 fish needed to be sampled. Thus in a commodity with a disease level of 10 per cent, at least one in 60 fish would carry the disease, and for 2 per cent, one in 150.

6.38 The concept of a minimum infective dose was frequently used in the fish disease field. This suggested that if there were large single challenges or an accumulation of infective agents to reach these high "critical" levels of challenge, frequent and/or large volumes of import could be significant in initiating establishment of disease in an available susceptible population. However, this was a concept which was poorly understood, even in experimental conditions, and Dr. McVicar was not aware of any fish disease case where this had been properly addressed or quantified for field situations.

6.39 He also be noted that the absence of disease incidents associated with frequent large volume commodity imports did not indicate that this material posed no risk. The absence of previously associated disease problems only indicated that the import had a low risk in relation to the specific materials and conditions where that importation had previously occurred (locality, access to susceptible fish etc), not that the practice was safe under all conditions. Conclusions made from the absence of recorded incidents were only valid if appropriate monitoring had been in place to detect any problems which might have occurred. Dr. McVicar also drew attention to his response to Question 12.

6.40 **Dr. Wooldridge** indicated that if a given quantity (a specified unit) of product imported carried with it a certain assessed risk, then more of that product carried a larger total risk. This fact should be borne in mind whatever the type of risk assessment, as a guide to eventual decision making. In addition, if information on volumes of import was available, it made practical and methodological sense to collect it along with all other relevant information.

6.41 If the import risk per unit had been assessed as negligible (using the definition 'Chance of event so small it can be ignored in practical terms'; box 1.4, page 17), then this approximated to zero (it was not actually zero, of course), and any number of multiples of it might reasonably be considered also to approximate to zero. Therefore it could reasonably be argued that there was no necessity to consider time periods or volumes. Conversely, if the import risk per unit had been assessed as high, or probably even moderate, one would probably not contemplate the import of the product as it stands, therefore consideration of time periods or volumes was probably irrelevant at that point. The problem of multiples of a given quantity was only likely to occur when the risk was assessed as somewhere between moderate and negligible (with or without safeguards) per unit, when the amount per year might theoretically alter the risk from a level which a specific country was prepared to accept, to a level which that country was not prepared to accept.

6.42 However, a qualitative risk assessment was not generally undertaken with the kind of precision necessary to assess the risk in terms of units in any situation other than that of negligible risk, and if a per-unit risk estimate was required it would generally be necessary to undertake a quantitative risk assessment. To summarize, consideration to volumes and time periods should be considered in a qualitative assessment, but its significance was situation-dependent.

Question 4. Was any new scientific evidence referred to in the 1999 Report other than that used in the 1995 Draft Report? If so, was it of such importance that it warranted different quarantine measures than those proposed in the 1995 report?

6.43 **Dr. Brückner** responded that the approach and presentation of the scientific information in the 1999 Report differed substantially from that in the 1995 Draft Report. The information on some of the diseases that were presented in the Draft 1995 Report was essentially the same. However, the scope had been expanded to also incorporate non-salmonid marine finfish. The evaluation of scientific data was also structured to clearly distinguish between the assessment factors and the rational relationship thereof with the risk management factors. It could be reasonably accepted that the way in which the scientific facts were presented differently merited a re-evaluation of the quarantine measures to assess their justification in terms of Article 2.2 of the SPS Agreement. The different quarantine measures proposed were scientifically justifiable in view of the above.

6.44 **Dr. McVicar** indicated that much new information was included in the 1999 Report, reflecting the fact that research on fish disease was highly active and new data were continually becoming available. He had previously advised (to New Zealand) that Import Risk Assessment on fish diseases should be a continuously dynamic process and it was therefore appropriate that Australia had made good use of an extensive volume of relevant new scientific information which had become available during the last few years. For example, in 1995 ISA was not a recognised disease in Canadian or Scottish waters and this was properly addressed in the 1999 IRA.

6.45 **Dr. Wooldridge** noted that the date of some references was after 1995, therefore additional scientific information was referred to, but it had not been demonstrated to her that it was of such importance as to warrant different quarantine measures. However, in her opinion, it could not in any event be so demonstrated until the flaws which she had identified in the baseline assessment of the risk were addressed.

Question 5. Is the criticism in Canada's first submission, paras. 49-68, that "Australia's evaluation of likelihood is highly subjective" (paragraph 52) justified in particular when it comes to applying the terms "low", "moderate", … to event probabilities (critique in paras. 49-61); assigning relative probabilities to different disease agents (critique in paras. 62-66); and consequences of disease establishment (critique in paragraph 67)? Please assess the specific inconsistencies raised by Canada, but with a focus on the report in general.

6.46 **Dr. Brückner** observed that Canada's critique related in essence to the relative value attached to conclusions and probability expressions used in qualitative versus quantitative risk assessments. Although specific examples related to specific diseases were quoted to illustrate the alleged unacceptability of the terms "low", "moderate", their use must also be judged in relation to the report as a whole and the fact that the Report must not be assessed as a quantitative risk assessment. The specific examples quoted for *A. salmonicida*, IPNV, ISAV VERV and *Vibrio anguillarum* were used to illustrate the same argument. Dr. Brückner agreed that one of the dangers of a qualitative risk assessment was the possibility that the manner in which an outcome of an assessment was semantically expressed could be subject to a difference of opinion depending on the perception and opinion of the scientific evaluator. He drew attention also to his response to Question 1.

6.47 **Dr. McVicar** replied that, because of the lack of good available data, both the New Zealand Risk Analysis on *Aeromonas salmonicida* and the Vose Report had to make many general assumptions on biological aspects of disease and on aspects of transmission. Some of these in critical areas were highly subjective and were open to dispute. When in-depth studies had been undertaken on fish diseases, it had been demonstrated that there were a high number of interactive determinant factors which could influence transmission of infection and contribute to the subsequent variations in the level and effects of fish disease. For the diseases considered to be of potential significance to Australia, there was in general insufficient information available to conduct such detailed analyses, and it was appropriate that Australia chose a qualitative approach.

6.48 In any risk analysis (whether quantitative or qualitative) there was likely to be dispute between what was an acceptable level of risk and what was unacceptable, with the proponents of relaxation wishing higher levels than those desiring a more precautionary approach. Science sat uncomfortably with the relative subjectivity of the two stances.

6.49 With respect to *Aeromonas salmonicida* , the main risk of import of this agent was not from furuncules (which as indicated should be removed by inspection) but from the occurrence of infection in tissues in covertly infected fish. For this disease, it was frequent that fish were acutely infected and even died without showing clinical signs of the disease and heavily infected fish harvested from these populations were likely to be missed during inspection. Such fish could be expected to harbour high levels of bacteria in their blood and tissues which would remain after evisceration and washing. There was therefore justification in the assessment level of risk of entry as "moderate", taking into account the level of risk of establishment through potential pathways as agreed by both countries.

6.50 With respect to the relative probabilities assigned to IPNV and ISA, it would appear that there was a range of risk levels possible within one category and that several different factors could contribute to the assigning of a disease to any one category. For example, it was known that ISA more easily transmitted horizontally than IPNV, balancing out its more restricted known host range. It should be noted that there were reports in the scientific literature of ISA also infecting rainbow trout (*Onchorhynchus mykiss*) and sea trout (*Salmo trutta*). Recently there has also been a press notice

from the Scottish Executive that ISA virus had also been found in eel *Anguilla anguilla*. IPNV also had greater stability than ISAV in the environment.

6.51 VERV could be treated differently in Australia from other important viral diseases (listed by OIE) because this virus already occurred in Australia, different strains had different host ranges and the virus was usually associated with juvenile fish which would not be imported. Dr. McVicar did not agree with the statement made in the First Submission by Canada (paragraph 65) that, *A salmonicida* and *R salmoninarum* were rarely reported in older fish. This had not been the case in his personal experience so he did consider this stated discrepancy to be valid.

6.52 The belief by Canada that Australia overstated the potential damage which could occur to its disease and chemical residue free image as a consequence of *A salmonicida* introduction, had some substance. Unless fish were farmed in quarantine-like conditions, it was inevitable that local diseases occurred, some of which required treatment. Australia was, and would continue to be, no exception.

6.53 **Dr. Wooldridge** indicated that she had replied to this question in her answer to Questions 1 and 2. In her view, Canada's criticisms as described in this question were justified in any event on methodological grounds. Furthermore, she did not understand why there had been no attempt to undertake a quantitative assessment (Canada's first submission, paragraph 49) as, although it was not specifically required by the SPS Agreement, it would have simplified and clarified the issues.

Question 6. Is Canada's critique justified that the 1999 Report does not in any substantial way evaluate the relative effectiveness of the risk reduction measures in reducing the overall disease risk linked to imports of Canadian salmon (first submission, paras. 69-79)? Please assess the specific inconsistencies raised by Canada, but with a focus on the report in general.

6.54 **Dr. Brückner** indicated that the risk reduction measures (risk management measures) as stated by Australia were a set of measures in accordance with the ALOP set by Australia in terms of their sovereign right to do so. This was done to accommodate a combination of measures to allow one set of requirements for the imports of salmon. The alternative would be to have several sets of requirements to be applied on a case-by-case basis depending on the disease presence or absence in the exporting country concerned. His opinion was that the measures developed did not place an undue trade restriction on the commodity concerned, with the exception of the requirements for "consumer ready" and "not consumer ready" products. His views on were contained in the response to Question 7 below in respect of the requirement for skin-on products.

6.55 Dr. Brückner agreed with the statement in paragraph 72 of the Canadian submission that the addition of one or two additional risk mitigation measures relative to the risk posed by a specific disease (i.e. presence of disease only in juveniles and non-spawning adults), might have a different outcome in terms of the overall risk reduction measures in respect of a *specific disease*. It would, however, restrict the purpose and scientific value of the 1999 IRA if the risk assessment of specific diseases were only to focus on certain age groups within a species (e.g. only adults) and ignore the risk posed by age groups not considered. In the import conditions outlined in AQPM 1999/51, the eight primary risk reduction measures reflected the outcome of a *total evaluation*. This approach incorporated the common and individual risks of the diseases concerned and not only of one particular disease (i.e. requirement 3 in respect of the exclusion of juveniles and spawners). The end result was the setting of requirements higher than the acceptable international standard (evisceration) only when scientifically justified by the 1999 IRA. This method of setting a combination of import requirements common to several diseases was not uncommon practice in respect of other animal food commodities.

6.56 **Dr. McVicar** replied that there were few cases of disease outbreaks occurring as a consequence of movement of processed fish for human consumption, that of whirling disease (*Myxobolus cerebralis)* being the most quoted example of a fish disease which had probably been spread with frozen fish and fish products. Australia identified practical options available for risk

reduction associated with salmonid products. There was but limited relevant, quantified data available of the decrease in the level of pathogen present in the commodity after preparation to a consumer-ready state, supporting the logic that removal of inedible or low value parts would reduce (but not eliminate) the risk of this material coming into contact with waters containing susceptible fish. On this basis Australia made a judgement on their likely effectiveness in reducing this risk which was both transparent and logical.

6.57 Regarding the inconsistencies raised by Canada, Dr. McVicar recalled his comments on the occurrence of furunculosis and BKD in market-sized salmon (response to Question 5) and indicated that it was commonly reported that IHN-infected broodfish represented an important source of infection to the next generation. For all infectious diseases of salmonids, there was a close relationship between the severity of a disease and stress in the general sense and it was likely that any disease persisting in a population through from juvenile to adult to sexually mature fish could erupt under adverse conditions for the host. It was too simplistic to take the generalisation that diseases could be most prevalent in juveniles or sexually mature fish as indicating these were the only areas of risk, although for many diseases they did represent the highest period of risk.

6.58 **Dr. Wooldridge** drew attention to her reply to Question 1, part (c). In her opinion Canada's critique was justified.

Question 7. What risk is avoided by the removal of skin from Canadian salmon? And what risk is avoided by the requirement that skin-on product weigh less than 450 grams? Would the risk related to imports of Canadian salmon be any greater without these requirements? If so, would the higher risk be such that it exceeds Australia's acceptable level of risk, namely "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach" (Australia's first submission, paragraph 147)?

6.59 **Dr. Brückner** stated that no rational scientific justification could be found in the 1999 IRA for the specific requirements for "consumer ready" products (i.e. skin-on for less than 450 grams and skin-off for more than 450 grams). The only reference made in respect of this requirement (Australia submission paragraphs 66–67) was not a convincing scientific opinion. Mention was made of the preferences of the trade for specific products (Exhibit H). Trade preferences should however, not blur scientific judgement on risk.

6.60 It was also unclear why products greater than 450g should be processed at pre-release facilities within Australia. No reason was given why this could not be done in the country of origin in AQIS-approved facilities. Both the requirements for "consumer-ready" and products other than "consumer-ready" could be interpreted as trade restrictive measures in terms of Articles 2.2, 2.3 (second sentence) and 5.6 of the SPS Agreement.

6.61 **Dr. McVicar** replied that, with respect to skin, two questions should be considered. The first was whether fish skin contained infection at levels sufficient to provide a risk of transmission of disease agents. Recent information on the occurrence of disease agents such as *Aeromonas salmonicida* and ISA indicated that infection levels were high on the surface of skin and gills in live fish and that for ISA virus, blood, mucus and body fluids adhering to surfaces were important carriers of infection (e.g. on contaminated equipment) capable of transmitting this disease. Washing of carcasses was a requirement to decrease surface levels of infection in product, and this would undoubtedly remove much of the mucus with associated infection. However, the extent to which this reduction was achieved under normal factory conditions had not been quantified. As salmonid skin was not a blood rich organ and its actual tissues were not recognised as a significant site of infection of the diseases of concern to Australia, it was unlikely that salmonid skin or washed skin surfaces were important areas of infection risk in gutted carcasses.

6.62 The second question to consider was what was the risk of skin containing viable infection coming into contact with susceptible fish? Skin was a low value waste component which might be discarded in uncontrolled ways with the risk that any associated infectious agents present would be transferred to open environment. The removal of skin on non-consumer ready products before entry into Australia would undoubtedly remove this particular risk.

6.63 With regard to **skin-on product less than 450 grams**, Dr. McVicar noted that product less than 450 grams may be considered to be portion size and in a form which was acceptable for direct cooking without further processing. The risk associated with discarded low value parts of product was therefore again reduced by requiring imports of salmon to be in a consumer ready form.

6.64 In his view, based on current knowledge on the diseases of concern to Australia, the removal of skin from Canadian salmon was unlikely to make a significant contribution to risk reduction.

6.65 **Dr. Wooldridge** indicated that she was not competent to answer whether any particular pathogenic agent was likely to be highly localised to the skin, nor whether any such agents (if they existed) were likely to be found in Canadian salmon. However, if agent was not localised to the skin, then in her opinion removal of the skin would not affect the risk in any meaningful way. If it was, then removal of the skin prior to entry to Australia, provided that the skin did not also enter Australia, would reduce the risk of pathogen entering Australia. If, however, the skin was removed in Australia, then the total risk would be the same as if it were not removed, unless additional safeguards on skin disposal were put into place at the same time which reduced the aquatic exposure risk from skin. This would only be necessary if the total risk was unacceptable.

6.66 If the pathogen was skin-localised, then that pathogen was presumably also in the skin of skin-on products weighing less than 450 grams, which may also be derived from the same sources. Looking simply at the risk-releasing capability of the product therefore, the requirement to ensure a weight lower than 450 grams would not affect the risk.

6.67 However, Australia's argument (1999 Report, 5.2.2, page 199) appeared to be based on exposure pathways, and assumptions regarding human behaviour patterns, namely that consumers having purchased human food grade salmon products were more likely to use them as fish food or bait if they had skin attached and weighed more than 450 grams. Given the availability of (presumably) cheaper products for these purposes, it seemed unlikely that this would be a common occurrence, however a psychologist or home economics expert might be more appropriate to estimate this probability. There would probably be a differential effect depending upon the price difference between the products. Either way, it seemed unlikely that this use would constitute a large proportion of the total imported fish volume sold for human consumption.

6.68 The important point from a methodological point of view was that release and exposure pathways had already been considered (on a total imports basis) within the risk assessment part of the report. Exposure had been assessed as (at the maximum) low (and Dr. Wooldridge had already explained why she believed they should probably be even lower). Given what appeared to be the probable amounts (and their probable release potential) which would be disposed of by the specific exposure pathway postulated above, in her opinion it seemed highly unlikely that the total pathogen concentration in a particular area would vary significantly from the baseline assessment. An appropriate quantitative assessment would greatly help to clarify this issue.

Question 8. Please give your views on the assertion by Norway (in its third party submission, paragraph 21) that "[i]t is difficult to see how a requirement that fish and fillets be 'not more than 450 grams' and 'pan size' has a relevant bearing on the risk, no rational explanation has been given by Australia in 1999-IRA". See also EC third party submission, paragraph 11.

6.69 **Dr. Brückner** replied that he supported in full the opinions expressed by both Norway and the EC, as outlined in his respnse to Question 7.

6.70 **Dr. McVicar** responded that the cut-off point of 450 grams did not reflect any known significant difference in the infection pattern of salmonids. As he had indicated in response to Question 7, a possible reason was that 450 grams was considered to be a maximum individual portion size, above which further processing, with the associated risks from disposal of effluent and unwanted waste, was likely to increase.

6.71 **Dr. Wooldridge** also recalled her answer to Question 7. There might be a highly unlikely theoretical potential justification but its necessity in practice remained totally unproven.

Question 9. Please give your views on Australia's assertion that "[t]he disease-based risk evaluation process destroyed once and for all assumptions that risk consistent with an ALOP could only be managed by applying the same measures to all products. The IRA's demonstrated that a comparison of risks between different products on the basis of measures applying to diseases in common is totally unscientific …" (paragraph 12 of its first submission) and that "[g]eneralisations about the relative effectiveness of controls on the internal movement of fish and fish products as part of risk management, as well as of the economic consequences are alarmingly unscientific" (paragraph 71). Please do the same in respect of the three points raised in Australia's submission at paragraph 124.

6.72 **Dr. Brückner** indicated that Articles 3.3, 5.3, 5.4, 5.6 of the SPS Agreement had a special bearing on the assertions of Australia. The general sentiment of all these relevant Articles in the Agreement was to not use an ALOP as a trade restrictive measure, consistency and the need to apply it only as far as protection of animal, human and plant life or health was concerned. Article 5.5 referred to ALOP in *different situations*, which could also be interpreted as "for different products". The question at stake was if an ALOP could be achieved better or in the same way if the measures were not generalised and applied differently to different products. Australia's assertion in paragraph 12 apparently warned against the generalisation of measures and formed the core of their argument for applying a disease-based risk assessment and management process (paragraph 10). The scientific argument was that disease manifested differently in different species and in respect of products of such species. It was asserted that this difference should be taken into account when determining risk management measures. In none of the Articles mentioned in the Agreement, was it required that there should be "across the board" conformity of measures to meet an ALOP. The process that was followed in the 1999 IRA also supported the view of Australia, although it could be reasoned that there were both advantages and disadvantages to this approach – especially if a measure was evaluated in terms of possible restrictions on trade that such a measure might impose. The approach of Australia appeared not to be inconsistent with the Agreement and could thus not be opposed.

6.73 The assertions of Australia in paragraph 71 were supported in the sense that they apparently did not oppose the need to bring national standards in conformity with international standards, but they added some perspective on the rationale for internal control under specific circumstances. They based their argument on the total assessment of risk, i.e. the risk posed by imports relative to the national situation and controls. It could be accepted that if an inland disease occurred in a localised manner (i.e. not endemic) but still posed a disease and economic risk, equal or non-discriminatory risk mitigation measures would apply. However, the mere fact that a disease was present within the national territory without taking the feasibility of risk mitigation measures into account in relation to the epidemiology of the disease, could be regarded as unscientific.

6.74 With respect to paragraph 124, first bullet, the 1999 IRA supported this assumption The general perception would be that fish for bait and live fish would pose a higher risk, however it must be evaluated against the release and consequence factors for the relevant diseases and in respect of the product concerned, and interpreted on scientific grounds and not from a subjective generalised perspective (i.e. "would always be higher").

6.75 In terms of paragraph 124, second bullet, Dr. Brückner noted that **t**he setting of an ALOP was not explicitly required in terms of the SPS Agreement and it could be said that the ALOP could be deducted from the measures applied. However, it did not imply that the ALOP was determined by the measure. In the normal practice of setting the ALOP (which was the prerogative of the Member), the ALOP was first determined (i.e. by risk assessment) and then followed by the measures necessary to meet the ALOP.

6.76 Paragraph 124, third bullet, raised the question of "same measure" for "one disease in common", which also related to Question 9. For the same reasons, Dr. Brückner concurred with this assertion.

6.77 **Dr. McVicar** replied that different diseases had different distributions, levels and locations of infection, and different survival capabilities and it was fully appropriate that each should be considered separately. For example, the risk management measures which could be applied for *Gyrodactylus salaris* (e.g. 2+ days without access to a live susceptible host species) were completely different from those appropriate for ISA virus (e.g. low pH) and completely different again from IPNV (e.g. high pH). It was true that the same methods could be effective in addressing risk for several different diseases, but the assumption could not be made that a limited suite of measures would be useful for all the diseases of concern. Dr. McVicar therefore supported the approach taken by Australia to evaluate the risks, consequences and appropriate measures to be taken on a disease-by-disease basis. Considering the three points raised in Australia's submission at paragraph 124, he recalled that the comparative risk from the 'one disease in common' between different types of product was addressed in his response to Question 10. The ALOP determined the measures required for each disease and each type of product, and, as indicated already in his response to this question, one measure might effectively achieve the ALOP for more than one disease of concern, but not necessarily for all.

6.78 **Dr. Wooldridge** responded that as she believed that the risk evaluation process described by Australia in the 1999 report was seriously flawed, she not believe one could base any further generalisations upon its results. In her opinion it could not be said to have destroyed (or upheld) any assumptions regarding risk management, or to have demonstrated anything regarding risks between different products (paragraph 12 of the first submission). Using the same rationale, in her opinion, the results of the 1999 risk assessments had not confirmed the scientific validity or invalidity of the assumptions described in paragraph 124.

Question 10. In your view, would the Australian measures now imposed on imports of non-viable salmonids and those that will be imposed on other non-viable marine finfish (in particular herring for use as bait) and live ornamental fish, result in a similar level of protection, namely "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach" (Australia's first submission, paragraph 147)? If not, is there any scientific justification for such differentiation?

6.79 **Dr. Brückner** expressed his view that the measures imposed were in accordance with the ALOP set by Australia and would result in a similar level of protection.

6.80 **Dr. McVicar** noted that it had been shown on numerous occasions that live fish presented the highest risk of diseases being moved between areas. Neither ungutted fish nor gutted carcasses had been conclusively linked to extensive transfer of infection between areas, although it was recognised that viscera (with blood rich organs and low disposal value) posed a sufficiently high risk for international agreement that removal was necessary to achieve sufficient reduction in the level of associated risk. As pointed out by the 1999 Report, all infection was not removed with viscera, because of remaining blood in carcasses and the location of infection in other parts of the body. The difference in risk between gutted and ungutted fish was therefore a matter of degree and, in the

absence of quantitative studies on the extent of reduction of infectious agent present, a value judgement.

6.81 To consider whether or not there was scientific justification for a differentiation between the measures being imposed on non-viable salmonids, those on non-viable marine fish and live ornamental fish, Dr. McVicar indicated that three areas should be considered:

(a) Some caution was required in the unreserved use of published host-disease lists. Numerous reports of disease occurrence in fish species were the result of experimental challenge or from samples taken from or in close association with infected populations of the normal host in unnatural conditions, e.g. farms. Because of the possible occurrence of infective carrier status, it was logical to exercise strict controls on ornamental fish which had been in contact with diseases of other fish, particularly in the abnormal conditions of farms. However, under natural conditions, the process of infection might be more difficult or even impossible in some cases due to the existence of a range of biological or physical barriers. This finding was reflected in international fish disease control regulations which did not usually recognise host species as susceptible to a particular disease agent when the challenge had been abnormal (e.g. experimentally) and natural occurrence of the infection had not been demonstrated. Thus, for example, many of the "host" listings of IHN might not be considered "valid".

(b) The existence of strains of the same infective agent of fish which showed marked differences in pathogenicity and infectiveness (and therefore risk) was well known. This might occur within one host species but was relatively common when infections of the "same" species were found in several types of fish. When it was known that these differences were due to inherent characteristics of the infectious agent, not the host or environment, but the different "strains", these could not be separated by currently approved diagnostic methods (probably due to the inadequacy of the methods) and this caused a difficulty in how legislative controls could logically function. To address this problem, a large research programme was currently in progress in Europe in an attempt to refine diagnostic methods of VHS/marine rhabdoviruses from different host species. Similarly, it was apparent that some atypical strains of Aeromonas salmonicida did not cause significant disease in salmonids when they came from non-salmonids. As a generalisation, it could be concluded that infections which caused disease in one species of fish would present the highest level of risk to stocks of the same, or closely related species, in the importing area and less of a risk to other species. These considerations were evident in some fish disease control regulations (e.g. within the EU) where controlled trade in live ornamental fish was permitted between zones under different status levels for controlled salmonid diseases, while trade in salmonids was more tightly controlled.

(c) The risk from dispersion of identified diseases of concern from imported fish or product and availability of susceptible fish were also relevant. A substantial level of infectious agent ("minimum infectious dose") was required before many infections could become established in a new individual fish or fish population. Dr. McVicar recalled the uncertainties about the concept of minimum infective dose for fish diseases expressed in his response to Question 3. It was self-evident that the extent of dilution by the aquatic environment at the point of release could be of critical importance. Thus four types of aquatic environments, in order of increasing dilution capability (or decreasing risk), were fish farm ponds, rivers, lakes and the open sea.

6.82 Dr. McVicar further noted that Australia intended to continue the import of **live ornamental fish** and Canada raised the question essentially whether the import of live ornamental fish, some capable of carrying certain of the salmonid diseases of concern, posed a risk which negated the effects of the controls being placed on salmonid products (first submission by Canada, paragraphs 92-95). Diseases of concern which were common between ornamental fish and salmonids were IPNV and

Aeromonas salmonicida. For the former, the measures required for salmonid products were relatively undemanding in the level of risk they accepted. For the latter, there was a recognition that non-salmonid fish in fresh water were more likely to be infected with atypical strains than with the typical strain of *A salmonicida* and that these as a whole had no significant effect on the natural environment.

6.83 With regard to non-viable marine finfish, the same consideration of differences in the biological "strain" of the one infective agent common between different host species could be made. There was increasing evidence that there was a group of marine rhabdoviruses (all identified as VHS by current diagnostic methods) occurring in marine fish species which had a much lower infectivity and pathogenicity than the "classic" VHS as found in fresh water rainbow trout farms. Thus current diagnostic test methods could not differentiate between strains which had major biological differences and might be grouping markedly different infectious agents under a common name. Further research was ongoing in this area in an attempt to resolve this difficulty.

6.84 The finding of IHN virus in Pacific herring was cited by Canada as an uncontrolled risk associated with the import of herring into Australia for bait, but it was worth noting that the records of infection were from experimental challenge and from fish caught in the same general locality as infected farmed salmon populations.

6.85 It was Dr. McVicar's view that there was scientific justification for a different set of measures for different products being imported into Australia because of variations in the nature of known infections which might be present in the source material and because of variations in the actual and probable risk of release of these into the environment in Australia. There was precedent in the regulations in other areas. Host-disease lists found in the scientific literature should not be used without careful evaluation as evidence of susceptibility of a fish species to an infection (and therefore risk in the product from naturally occurring infections). Dr. McVicar concluded that a very low level of risk could be achieved by the measures Australia would now impose on non-viable marine finfish and live ornamental fish.

6.86 **Dr. Wooldridge** stated that the definition of level of protection as a "high or very conservative level of protection aimed at reducing risk to very low levels" suffered from the same problems with regard to subjectivity inherent in the words "high" and "very low" which she had referred to earlier. Australia had stated that it required a "high or very conservative level of protection aimed at reducing risk to very low levels", and if it was prepared to accept non-viable salmonids, herring-bait and live finfish under certain conditions, then the associated risks must, by definition, be reduced to at least what Australia would define as "very low levels". The question, in her view, was whether the restrictions put on non-viable salmonids actually took the risks to an (unnecessarily) lower level that this.

6.87 This was not a simple question to answer without benefit of a risk assessment laid out specifically to address this issue. There might be genuine differences in the overall risk of disease establishment associated with different fish species (requiring different safeguards) even when exposure pathways were the same. Suppose that fish species F1 had an extremely low prevalence of disease X, but exposure pathways which gave a high probability of exposure (for example fish intended as bait). Overall the risk of establishment of X would be assessed as extremely low (or lower) due to the extremely low prevalence. It might be that no (or minimal) safeguards were considered necessary to ensure risk was below acceptable levels.

6.88 Now suppose fish species F2 had a higher level of prevalence of disease X than did fish species F1, and exposure pathways which gave a lower probability of exposure than for F1 (for example fish intended for human consumption). Was the overall risk of establishment higher or lower, or the same? This of course depended upon exactly how much higher the prevalence was, and how much lower the probability of exposure. It was possible that overall the risk of establishment was higher despite the lower probability of exposure. In this case, more stringent safeguards might be

required for the fish intended for human consumption, with regard to disease X in order to give the same level of protection as that for the other fish product.

6.89 Although an intuitive argument, it could not therefore be assumed that a less probable exposure pathway would automatically always lead to a lower level of safeguard required *for a specific disease.* However, if the same disease was present at the same prevalence level in two species of fish (for example a salmonid and a non-salmonid), and the probability of exposure for one was lower than the other, then clearly that with the lower probability of exposure would give a lower total risk (for the same quantity of product, and all else being equal).

6.90 Some information could be obtained by looking at the risk assessment for the same diseases in two groups of fish (for example, salmonids and non-salmonids) and comparing risk outcomes with management required. However since she believed that the assessments themselves were flawed, without a re-assessment first she saw no point in this comparison. In Dr. Wooldridge's opinion one other way to clarify this complex issue would be to attempt to quantify the risks either for the same disease in different fish categories, and/or for the disease considered qualitatively to have the highest risk for each category of import, in order to ascertain whether there were differences of order in the risks and likely safeguard levels required, compared with safeguards required.

Question 11. Is it possible to verify in an objective manner on the basis of the 1999 Report and/or other evidence before the Panel whether the difference referred to in question 10 exists and, if so, whether it is justified?

6.91 **Dr. Brückner** replied that the 1999 IRA supported the rationale of the measure to achieve the same level of protection.

6.92 **Dr. McVicar** drew attention to his comments included in his response to Question 10.

6.93 **Dr. Wooldridge** also replied that her answer to Question 10 answered this question.

Question 12. Section 8.1 of the 1999 Report (section 8.1.2 in the Draft 1999 Report) states, at paragraph 345, that fish used for purposes such as fish feed and bait is obviously more likely to introduce disease agents (if present in the fish) into the aquatic environment than product imported for human consumption. The same section notes, at paras. 346-47, that the use of thousands of tonnes of imported pilchards, blue mackerel and herring as lobster bait over several decades has not caused any detectable adverse effect on fish health or the aquatic environment. The conclusion cited is that the risk of such imports introducing an exotic disease that is capable of producing a large-scale fish kill is either very low or does not exist at all.

At paragraph 115 of its first submission, Canada states, with reference to the foregoing, that if the absence of disease transmission involving mere thousands of tonnes of product from a few species in a small area is relevant to suggest very low to non-existent risk, then it stands to reason, (according to Canada), that the absence of disease transmission from billions of tonnes of dead, eviscerated fish of all species moving all around the world is even stronger evidence that the risk from such product is negligibly small. Please comment on Canada's assertion.

6.94 **Dr. Brückner** observed that this question also related to Question 3 above (consideration of volumes and time periods). The question could also imply perceived discrimination between non-viable salmonids relative to non-viable non-salmonids. The acceptance of the opinion expressed by Canada could also imply acceptance of the historical facts as a reliable and scientifically justifiable qualitative observation to defend a lower risk management measure. It was, however, in contradiction to the earlier insistence of Canada (paragraph 49) for a quantitative approach. Acceptance of the assertion in paragraph 115 would nullify the need for a science-based risk assessment. It did not say

that the evaluator should not take cognizance of the historical facts, but these should be tested and evaluated as was done in the 1999 IRA. In AQPM 1999/51, Australia did not impose any restrictions on non-salmonid marine finfish, but the restrictions imposed were in accordance with the outcome of the conclusions made in the 1999 IRA.

6.95 **Dr. McVicar** indicated that the absence of clinical disease associated with large amounts of fish imported as fish feed or bait might be taken as evidence that no significant disease problems occurred associated with this product. However, some caution should be used in directly accepting this conclusion at its face value. The imported fish were being used as feed in highly specific circumstances (tuna cages and as bait) mainly in the open sea. The lack of associated infectious disease problems was relevant to these circumstances, but not necessarily to others such as in and around salmon farming. The almost exclusive use of processed diets in salmon farming internationally partly reflected the risk to salmon farms associated with fresh or frozen whole fish diets. Australia was taking similar risks with their tuna farms.

6.96 Dr. McVicar further noted that fish kills were difficult to observe in the open sea. For example, there had been a major herring kill (estimated as 30 per cent + of the standing stock) due to *Ichthyophonus* in the North Sea and Kattagat in the early 1990s, but dead fish were only evident in the latter, relatively confined, area. It was probable that many major fish kills in the sea had gone unnoticed.

6.97 **Dr. Wooldridge** replied that in her opinion, Canada's assertion was a logical deduction, and in the absence of acceptable evidence to the contrary it was a statement which she would be prepared to accept.

Question 13. In paragraph 28-(a)(ii) of Australia's first submission, it notes that imports are permitted subject, *inter alia*, to certification that "the fish must be derived from a population for which there is a documented system of health monitoring and surveillance administered by the competent authority." To what extent can this be done for wild, ocean-caught salmon? If this requirement is considered necessary with respect to risks associated with Canadian salmon, should similar requirements not be necessary for non-salmonids?

6.98 **Dr. Brückner** indicated that he was not an expert on these management systems and did not comment.

6.99 **Dr. McVicar** replied that, ass indicated in his response to Question 1, a knowledge of the level of infection in the source population of the product was beneficial in determining the extent that risk reduction measures needed to be applied during the import process. This could be easily achieved in farmed populations (salmonids and non-salmonids) and would be of most value there as infected sick fish could have a prolonged survival in the absence of predation, and a proportion passed through processing lines without being detected. However, as sick fish did not usually survive long in the wild (largely because of predation pressures), the level of serious disease in wild fish populations was typically low, and few fish which were heavily infected with important diseases were therefore likely to be caught An exception occurred during epidemics when large numbers of heavily infected fish could appear. Current data available indicated that such events were relatively rare, were typically of short duration and were highly visible, particularly during any processing. With wild fish populations, an accurate health monitoring programme was difficult to implement, as extensive and complex monitoring studies were required to determine the range of diseases occurring, or even the incidence of any specific disease present. He noted that the level of health monitoring and surveillance on wild fish populations was not specified by Australia.

6.100 The risk of disease being released from imported farmed non-salmonid marine finfish or non-salmonid wild marine finfish into a marine environment at concentrations where local susceptible stocks would be placed at risk was lower than with salmonids (farmed and wild) because of the high

dilution factor of the marine environment in comparison to inland water with actual or potential susceptible fish species. The relative levels of diseases risk between different host species for the 'same' disease, as indicated in his response to Question 10, was also relevant to this discussion.

6.101 The comparison of the level of risk between wild and farmed fish of the same species and between different species from the farmed and wild environments raised many difficult problems. Fish diseases, when they occurred, often tended to be at higher levels in farmed populations but the identification of which diseases were there and at what level could be easily determined. Most existing fish disease data had been derived from captive fish populations. Lower levels of significant disease were normally found in wild populations so there was a lower chance of dangerous levels of pathogen being imported with product. However, the prevalence of a disease in a natural population did not directly indicate its incidence. It was difficult to determine the range and level of infections in wild populations, particularly in the extensive marine environment. It was a matter of judgement at what level the inspection was required to meet the ALOP on these different types of product.

6.102 **Dr. Wooldridge** replied that she was not competent to answer the first part of this question. Given that for non-salmonids, the exposure pathways might (generally, due to alternative use patterns) appear to present greater risks, then (again, generally) it might be reasonably assumed that one would wish to be at least (if not more) confident that the prevalence was lower for any given pathogen from any given source. Given this, one would expect similar requirements (at least) to be necessary for non-salmonids as for salmonids (but she recalled her Question 10, that especially for a specific disease this might not necessarily be the case).

Question 14. Australia observes in is first submission, paragraph 38, with respect to live ornamental finfish that "Diseases may be localised, in many instances at premises level, and disease status may alter rapidly". This is presumably one of the reasons why the new measures require, *inter alia*, certification of the health status of the premises [of export]. Is it not also the case that farmed salmon diseases may be localised, in many instances at premises level, and that disease status may alter rapidly? Should not certification of the health status of farmed salmon premises be comparably important, and effective, for risk management?

6.103 **Dr. Brückner** recalled that in paragraph 71 of Australia's first submission it was stated that: "In respect of hatchery-sourced fish (including recreational trout) the most effective means of risk management will usually be hatchery-based". It was not stated if the risk management referred to included participation in a national disease surveillance scheme for farmed salmon diseases. However, in Appendix 6 of the 1999 IRA details were given of the surveillance and monitoring of fish health in Australia. Dr. Brückner agreed that an official health certification of farmed salmon premises should be carried out to support the inland disease risk management.

6.104 **Dr. McVicar** that it was appropriate that certification of fish from aquaculture establishments (whether salmonid or non-salmonid) providing high risk exports be subject to certification that either they were located in a zone free of the diseases of concern or that the farm was equivalent to an approved farm in a non-approved zone (relevant for live fish or eggs). Where the risk was considered to be lower (e.g. for non-viable product), it was appropriate that the farm populations were subject to certification. The same situation pertained to both salmonid and non-salmonid farms and there would be no scientific reason to have such a requirement for one and not the other. In the case of live ornamental fish, however, there was an increased risk if stocks had been collected from several farms or wild areas prior to export and there would be logic that this was specifically controlled by adequate certification of the farm of export.

6.105 **Dr. Wooldridge** indicated that she was not competent to answer this question.

Question 15. Please give your views on the assertions by Norway in its third party submission, paras. 24-25 (e.g. "That there should be a need for different measures against other finfish imported i.a. for human consumption and containing the same diseases, is … far from clear").

6.106 **Dr. Brückner** responded that the measures proposed in AQPM 1999/51 for non-viable salmonids and non-salmonid marine fish, respectively, did differ in respect of monitoring required, age restriction and requirements for the nature of the product once imported (consumer–ready, further processing in approved plants post-arrival). It was unclear why there were differences for human consumption in respect of consumer-ready and the need for post arrival processing of salmonids if greater than 450 grams same questions were raised in respect of the scientific justification for skin-on/skin-off relative to the weight in terms of the risk created/not created. Dr. Brückner agreed that the first four requirements for other finfish did establish acceptable risk mitigation measures supported by the release and consequence assessment conclusions in the 1999 IRA. However, he failed to find convincing evidence for the reasons to pose further restrictions on size and processing on salmonids but not on other finfish.

6.107 **Dr. McVicar** replied that the views of Norway regarding the more burdensome measures to be imposed on salmon imports would only be valid if there were homogeneity in the distribution of the different diseases of concern and pathogenic strains (e.g. strains of *A salmonicida)* throughout the different source populations of fish species from which product was being imported. This was not the case. Taking *Aeromonas salmonicida* as an example, the typical strain causing classic furunculosis was commonly a serious disease in salmonids throughout many parts of the world (excluding Australia) whereas several atypical strains were widespread and caused ulcer disease in a wide variety of other fish species. These atypical strains only caused serious disease in salmonids in relatively few areas (eg Iceland, Japan). It was his interpretation that the proposed Australian measures were specifically targeted against salmonids because of the risk from specifically salmonid diseases such as typical strains of *A salmonicida*, and that infections occurring in non-salmonids represented a lower level of risk to this species. To this extent the differences in the measures being applied to different products could be justified. He also drew attention to his response to Question 10.

6.108 **Dr. Wooldridge** agreed that the need for different (or any specific) measures was far from clear.

Question 16. Is the difference in measures applied to New Zealand and Canadian salmon justified on scientific grounds, in particular the disease status of New Zealand?

6.109 **Dr. Brückner** stated that, considering the disease status of New Zealand as outlined in the 1997-IRA of New Zealand, he would not contest a change in the status quo. However, it could reasonably be asked why Australia did not apply the same measures for import as New Zealand for non-viable salmonids, since the New Zealand measures are considerably less restrictive than those put in force in Australia.

6.110 **Dr. McVicar** indicated that the import measures applied by New Zealand were essentially similar to those of Australia. Because of their geographical proximity, similar history regarding the occurrence of non-indigenous salmonids and similar disease profiles (except for Whirling Disease), both areas might be exposed to similar risks from imports of salmonid products. A degree of similarity in risk reduction measures between the two countries would be expected**.** From a scientific point of view, there was recognition of the concept of more relaxed trading between zones of comparable fish health status than when trade wass from zones of lower fish health status to zones of higher health status. This was the basis for the EU Directive 91/67/EEC. On the same scientific principle, it was therefore not illogical to have a similar relationship between Australia and New Zealand.

6.111 **Dr. Wooldridge** noted that it was more appropriate for a fish expert to answer this question.

Question 17. In view of the similar disease agents that may be present in salmonids and non-salmonids, please comment on the validity of the distinction made by Australia between salmonids, which may not be imported or released from quarantine unless processed to "consumer-ready" form, and non-salmonids, which are not required to be processed to consumer-ready form.

6.112 **Dr. Brückner** observed that this question related to a similar question posed by Norway (Question 15). He failed to see the reasons and scientific justification for a distinction at this level as outlined in his response to Question 15.

6.113 **Dr. McVicar** also recalled his response to Question 15.

6.114 **Dr. Wooldridge** indicated that her answers to Questions 7 and 10 in part answered this question. In summary, if the same disease in two different species was present at the same prevalence, and if the exposure pathways were the same and of the same probability, then there would be no justification for differences. This identical situation was unlikely to arise, and the overall risk depended upon both. There may therefore be justification for treating two different products in different ways. However, the justification for this particular safeguard for salmonids was, in her opinion, unproven and unlikely so to be.

Question 18. Please give your views on paras. 15-24 of Canada's submission of 30 September 1999, in particular on the question of whether Australia's measures on imports of salmon and those on imports of whole, uneviscerated pilchards, including for use as bait, result in two (substantially) different levels of sanitary protection in these two areas and, if so, whether there is any scientific justification for such differentiation?

6.115 **Dr. Brückner** noted that the issues surrounding Pilchard herpes virus were discussed over three paragraphs in section 6.2.1 of the 1999 IRA and not further considered in the IRA. Canada had submitted scientific literature to verify their concern. In the absence of any further substantial scientific evidence, it was not possible to make a judgement on this issue. However, if the virus was considered to be endemic, then the assumption made by Australia not to institute risk management practices in respect of the disease or other "unknown diseases" that might be introduced through imports was valid and justified.

6.116 **Dr. McVicar** responded that because Australia considered that the herpes virus associated with the disease outbreak in Australian pilchards was endemic, it was not included as a disease of concern and accordingly there was no desire to introduce measures to restrict this disease in imports. The issue of VHS was addressed in his response to Question 10. When there was a lack of evidence in the scientific literature of infectivity and pathogenicity associated with a disease agent, the introduction of control measures which might affect trade on a precautionary basis would be difficult to justify.

6.117 **Dr. Wooldridge** believed that Canada’s submission as presented did indicate a substantial difference in levels of sanitary protection for the two products under consideration, for which scientific justification was not immediately apparent.

Question 19. Is it possible to verify in an objective manner on the basis of the 1999 Report and/or other evidence before the Panel whether the difference referred to in question 18 exists and, if so, whether it is justified?

6.118 **Dr. Brückner** replied that the assumptions of Australia could possibly be objectively justified (or proven to be incorrect) by further literature research and/or by means of simulation disease modeling in respect of the impact of disease introduction through the importation of pilchards.

6.119 **Dr. McVicar** recalled his response to Question 18.

6.120 **Dr. Wooldridge** observed that Canada argued that Australia was prepared to accept whole uneviscerated pilchard imports with substantially less safeguards than for eviscerated salmonid imports (paragraphs 14 and 15, Canada's submission of 30 September.). The evidence that the safeguards required for such pilchards was less than that for such salmonids was available in the final 1999 report. Canada argued that it believed that the actual risk of disease establishment from such pilchard imports was higher than that from eviscerated salmonids. It presented its own evidence of the probability of disease incursion and establishment for pilchards using as an example a disease believed by scientists to be due to pilchard herpesvirus (various references, many from Australia's own documents).

6.121 Section 6.2. of the Australian 1999 report was a hazard identification exercise for "Diseases/Disease agents of non-salmonid marine finfish". Section 6.2.1 identified Viruses. In this section pilchard herpesvirus wa s identified (pages 256-7) as a hazard. It was described as "associated with extensive mortality in pilchard" *and* "reported only in Australia and New Zealand", *and* "this agent is not further considered in this IRA". The paper supplied in the Canadian submission of 30 September (Whittington, reference in footnote 88, page 3) gave evidence that the consequences of this disease in Australia had been serious; therefore the probability was that they would again be serious in a further outbreak. Dr. Wooldridge did not think this was in contention.

6.122 The remaining issue from an import risk assessment view was therefore what was the probability of the disease having been imported along with fish imports. She had not found anywhere where this probability was considered in the 1999 report (and indeed it was stated not to be, in the quotation above). The fact that it had only been reported in Australia and New Zealand did not of itself rule out the possibility that it had been imported (though it was a relevant fact in estimating this probability). Whittington et al (see footnote 88), on page 14, looked at the epidemiology of this disease in Australia and New Zealand, and considered the probability that the infection could have come from an external source, examples given being commercial shipping discharges and imported pilchard baitfish. In Dr. Wooldridge's opinion, the authors of this paper considered this external source as a higher than negligible probability, for a number of described epidemiological reasons.

6.123 Australia's own draft document, 1999 Draft Report (section 8.1.2), also referred to by Canada (paragraph 16, 30 September), discussed the probability of this virus being exotic to Australia, on pages three and four of this section (8.1.2). Of note was the submission by the Chair of the CCEAD Joint Pilchard Scientific Working Group, which stated that:

> "The Working Group is currently coordinating a national research programme … with one of the objectives to determine whether the virus is endemic or exotic and, if exotic, the source of the virus. Results to date do not support any definitive conclusions …"

6.124 This doubt was, in her opinion, very relevant to the assessment of the probability of risk from this particular disease due to the import of pilchards. The fact that this uncertainty had not been considered in the final 1999 report was a significant flaw in the risk assessment for non-salmonid marine finfish, particularly given the consequences of an outbreak. It was also very odd methodologically to have ignored this uncertainty in the final report.

6.125 This evidence clearly did not support the case for justifying more stringent safeguards for eviscerated salmonids than for whole non-salmonid marine finfish. In itself it said almost nothing about the safeguard measures appropriate specifically to eviscerated salmonids. By itself, it would tend to support a case for stringent safeguards on imported pilchards although it must, of course, be considered in context with other evidence.

Question 20. Would any series of measures more limited than the current Australian set of measures on imports of Canadian salmon achieve Australia's acceptable level of risk, namely "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach" (Australia's first submission, paragraph 147)? Please be specific.

6.126 **Dr. Brückner** indicated that he did not see the rationale behind this question. One could list several other additional procedures such as compulsory laboratory screening of consignments before export certification for the diseases of concern, but this would just be a shopping list without answering the question.

6.127 **Dr. McVicar** replied that. in general, it appeared that Australia had identified the minimum risk reduction measures which could be implemented to safeguard local stocks from the identified diseases of concern. There would not appear to be a major disease risk associated with salmonid skin which would substantially alter the level of risk by its removal, but balanced against this was the greatly increased risk that this inedible, low value material might be disposed of in an unsafe manner prior to cooking.

6.128 **Dr. Wooldridge** indicated that this would depend upon how effective each measure was in reducing the particular risk factor(s) which it addresses, and that she was not competent to assess this.

Question 21. Is it possible to verify in an objective manner on the basis of the 1999 Report and/or other evidence before the Panel whether any of the alternative policy options, or any alternative set of measures, would achieve Australia's appropriate level of protection?

6.129 **Dr. Brückner** observed that this could be possible but would imply another risk assessment as risk management measures/policy options were the result of an outcome of a scientifically based risk assessment. It would imply the proposal of less stringent risk mitigation measures and an evaluation thereof in terms of consequence. He was of the opinion that the existing 1999 IRA has followed this approach in general to establish a rational relationship between the proposed measures and the ALOP.

6.130 **Dr. McVicar** was of the view that Australia had objectively analysed the available fish disease data to identify the diseases of concern and had identified the most likely and practical means of reducing the risk of their introduction with product with appropriate deference to limiting restrictions on trade. The lack of quantified data on the extent of reduction in the levels of infective agent present or of restriction of access of important infections to local fish populations precluded objective assessment of the likely success of the proposed measures.

6.131 **Dr. Wooldridge** noted that she was not competent to assess this.

Question 22. What is the level of risk to Australia's commercially or recreationally important fish populations resulting from diseases such as EHNV, GUD, VERV and EUS (referred to in paras. 136-144 of Canada's first submission), which are endemic to some parts of Australia but exotic to others, given that no restrictions on the domestic movement of dead finfish are imposed? Is this risk similar or higher than that of imports of Canadian salmon under current

Australian requirements? If so, is there any scientific or technical justification for not imposing restrictions on the domestic movement of dead finfish, including uneviscerated fish?

6.132 **Dr. Brückner** indicated that this question could be better answered by a fish disease expert.

6.133 **Dr. McVicar** responded that most fish diseases showed variations in their occurrence both at the local and wider geographic levels. Even where diseases were considered widespread within a country/area, control through legislative restriction of movement of live fish or parts of fish could be beneficial where there was either a discontinuous distribution or there were certain populations which were particularly vulnerable (for example farmed stocks). This was an underlying principle of several fish disease control regulations (e.g. UK Diseases of Fish Acts, the List III classification of certain diseases in EU Directive 91/67/EEC). Where significant risk had been demonstrated, national or international controls could be imposed. Without detailed knowledge of the vulnerability of the fish populations in different parts of Australia to the diseases listed in the question, it was not possible to predict the risks to these and benefits which might be derived from the introduction of national controls on fish or fish products. Although there was an increasing trend towards use of the precautionary approach in the deployment of restrictions, it was his firm view that regulatory controls on fish diseases should be subjected to both risk and cost benefit analyses to provide a logical scientific basis. Also, because of variations between diseases in such factors as infection levels, pathogen survival, use of product etc, it was not possible to conclude that measures used to reduce risk for one disease would have a similar benefit for other diseases. Each disease considered to be potentially significant required individual consideration of the measures required to reduce risk of spread. As the diseases listed in paragraph 138 of the first submission of Canada were not those being controlled in imports of Canadian salmon into Australia, direct comparison would not be appropriate.

6.134 **Dr. Wooldridge** indicated that she was not competent to answer most of this question. To fully answer the question as to the level of risk of internal movement of dead finfish, one would have to undertake a risk assessment specifically to examine the risks of internal dead finfish movements. Canada suggested that these risks would prove significant. To compare the results to see whether this risk was higher or lower than the risk of imports into Australia from any given country (e.g. Canada), would then be possible. If similar fish species and products from different sources were entering a given area of Australia, and if the exposure pathways once the product had entered that area were the same (which would be highly likely if the products were the same and intended for the same uses), then the overall risk comparison would depend upon the prevalence of the disease(s) of interest within the fish being moved in, and the quantity of such movements from each source.

6.135 Therefore, if fish products with a high prevalence of disease X were being moved into area B from area A, and the same fish products with an equal prevalence of the same disease X were being moved (in the same quantities, and all else being equal) into area B from a different country, then the risks to area B would be the same. If the level of X in the different country was actually lower than in area A, then the risks to B would be lower, and *vice versa*. Given an identified hazard and an assessed risk to area B, whether these theoretical considerations had any practical application in risk mitigation depended (in part) upon whether imports to a given country could legally be allowed only into certain regions or zones of that country, as well as whether there were internal movement safeguards. However, if there was an assessed high risk of internal disease transmission to area B by fish product movement and this was not addressed then, Dr. Wooldridge believed that it would seem superfluous to attempt to stop the same disease(s) by restricting foreign imports to the same area.

Question 23. Can *A. salmonicida* (typical and atypical) be detected through visual examination? If not, what SPS measure can be adopted to imports of live ornamental finfish known to host these agents, and to whole herring for bait also known to host them?

6.136 **Dr. Brückner** indicated that this question could be better answered by a fish disease expert.

6.137 **Dr. McVicar** responded that most species of fish appeared to be susceptible to typical furunculosis, but the level of susceptibility, and hence associated pathology which might be detected, was variable. Covert typical furunculosis (ie clinically unapparent infections) due to *Aeromonas salmonicida* subsp. *salmonicida* had long been recognised as a problem causing difficulties when controlling this disease in salmonids. Covertly infected fish were capable of acting as carriers and initiating infection in other fish. In cases of acute furunculosis, high mortalities might occur in affected populations without showing external signs of infection. In both of these cases, it was unlikely that visual examination during inspection of carcasses would detect all infected fish.

6.138 A typical *Aeromonas salmonicida* occured in a large number of host species in fresh and sea water and the associated pathology which had been recorded was variable. However, the most common clinical sign of atypical A *salmonicida* was skin ulceration which would be detectable through visual examination. Screening of live ornamental fish for such lesions at import and the use of quarantine restrictions with health surveillance after import (i.e. the SPS measures indicated by Australia for live ornamental finfish) would undoubtedly reduce the risk of heavily infected fish being released, but would not necessarily detect and remove covertly infected fish. It thus appeared that Australia was prepared to accept a higher level of risk for atypical strains of A *salmonicida* than for typical. Similarly, although freezing of herring would undoubtedly considerably reduce the level of viable disease agents of concern present in imported bait, it could be expected that a level of infectivity, and therefore risk still remained in these. Balanced against this was the likely variability in "strains" of agent between different host species and the likely dilution factor occurring in the area of use after import (also referred to in his response to Question 10).

6.139 **Dr. Wooldridge** noted that she was not competent to answer this question.

Question 24. Does OIE listing/absence of listing of different diseases and/or their OIE categorization reflect the outcome of risk evaluation and risk management comparable to that of Article 5.1?

6.140 **Dr. Brückner** replied that it was accepted that the OIE listing was not complete as indicated in the 1999 IRA and was therefore evaluated on a continuous basis by the Fish Diseases Commission of the OIE on the recommendations of Member Countries. Should the 1999 IRA only have focussed on those diseases listed in the OIE Code, it would have been incomplete. Article 5.1 of the SPS Agreement also referred to risk assessment techniques developed by international organisations. The 1999 IRA used these as a guideline, in conformity with Article 5.1.

6.141 **Dr. McVicar** noted that the OIE listing of diseases was a reflection of decades of experience of the pathogenicity and consequences of these infections in several countries, the absence of suitable control measures, an awareness of their restricted distribution and how amenable they might be to containment and control by legislation. As there were no published records, it was apparent that in no case had a formal risk assessment been carried out although, loosely, the international awareness of and agreement on their effects could be classed as a form of qualitative risk assessment. It was no coincidence that most of the OIE-listed diseases were also controlled diseases in other national (e.g. United Kingdom, United States, Ireland, Canada) or international (e.g. EU) fish disease control regulations. OIE annually took representation on fish disease issues from national participants, assessed the regulations and lists of diseases and if considered appropriate, might add diseases to the lists or remove others.

6.142 **Dr. Wooldridge** indicated that she was not competent to answer this question.

VII. FINDINGS

A. CLAIMS OF THE PARTIES

7.1 Canada claims, firstly, that Australia has failed to take the measures necessary to comply with the recommendations and rulings of the DSB in the original dispute. In Canada's view, it cannot reasonably be said that Australia has implemented measures to comply with the recommendations and rulings of the DSB. For Canada, the necessary measures do not exist.

7.2 Canada claims, secondly, that even if Australia has implemented some measures purporting to comply with the recommendations and rulings of the DSB, those new measures are inconsistent with several provisions of the SPS Agreement. More specifically, Canada claims that the new measures would not remedy Australia's violation of Articles 5.1, 2.2, 5.5 and 2.3 of the SPS Agreement and are also inconsistent with Articles 5.6, 8 and Annex C, paragraph 1(c), of that Agreement.

7.3 Accordingly, both the existence and consistency of Australia's new measures are at issue in this dispute.

7.4 Australia claims that the measures it took to comply with the DSB recommendations and rulings in the original dispute exist and are being applied. According to Australia, these measures comply with the DSB recommendations and rulings in relation to Articles 5.1, 2.2, 5.5 and 2.3 of the SPS Agreement. In Australia's view, the measures taken to comply do not give rise to any new claimed inconsistencies in respect of Articles 5.6, 2.3, first sentence, Article 8 or Annex C, paragraph 1(c), of the SPS Agreement.

B. PRELIMINARY ISSUES

1. Third party rights

7.5 On 22 November 1999, the Panel made the following ruling in response to a letter received from the EC, third party to these proceedings:

> In response to your letter of 18 November 1999 requesting clarification on the Panel's Working Procedures "so as to ensure that the EC receives all written submissions of the parties and the experts' replies before the meeting of the Panel", we have ruled as follows.
>
> Article 10.3 of the DSU reads:
>
> > "Third parties shall receive the submissions of the parties to the dispute to the first meeting of the panel".
>
> Our Working Procedures do not further specify third party rights in this respect.
>
> In normal panel proceedings, two substantive meetings with the parties are held pursuant to Appendix 3 of the DSU. Before each of these meetings submissions are filed. Article 10.3 of the DSU explicitly limits the right of third parties to receive only the first round of submissions, i.e. the parties' submissions to the first meeting. Third parties under Article 10.3 do not have a right to receive the second round of submissions, i.e. the rebuttal submissions made to the second substantive meeting. Panel practice shows that only in exceptional circumstances have third parties received such extended third party rights.
>
> Due to the expedited nature of Article 21.5 procedures, our timetable in this proceeding only provides for one meeting with the parties. Before that meeting

> parties were requested to make both first and rebuttal submissions. We also obtained expert advice before the meeting. In addition, we already received written third party submissions and have invited third parties for a special third party session to be held after the meeting with the parties.
>
> Given the practice under Article 10.3 of the DSU to send copies only of the first round of submissions to the third parties -- not the rebuttal submissions -- we consider it appropriate in this case too to limit the right of third parties under Article 10.3 "to receive the submissions of the parties to the dispute to the first meeting" to copies of the first submissions of the parties and the supplements thereto including any additional evidence submitted up to but not including the rebuttal submission.
>
> We note that the EC did not request any extended third party rights other than those referred to in Article 10.3 and see, indeed, no special reason why the EC, or any other third party to this case, would need special third party rights.
>
> Moreover, in respect of the experts' replies we note that Article 10.3 of the DSU only refers to submissions "of the parties"; not to any other submissions. As was the case in the original dispute, we do not consider that Article 10.3 requires us to provide these expert replies to the third parties.
>
> As to the meeting with third parties, we expect -- as is the case in normal DSU procedures -- to receive the third parties' oral views on this dispute in light of the first round of submissions. Nothing in the DSU prompts us to expect otherwise.
>
> On that basis, and considering the elements of the first round of submissions that third parties have already received, we attach the following document:
>
> > Supplement of 4 November to the First Submission of Canada Concerning Tasmania's Ban on Salmonid Imports.
>
> We recall, however, that nothing prevents the disputing parties in this dispute from also sending copies to the third parties of any of the other submissions they have made or plan to make to the Panel.

7.6 We confirm the above ruling. We recall further that none of the third parties to this dispute requested extended third party rights at the outset of this proceeding.[132] Consequently, the Panel adopted and maintained standard working procedures following which third parties only receive the parties' first submissions before the date for filing their third party submissions. Thereafter, the Panel received rebuttal submissions, dealing mostly with the advice received from the experts advising the Panel, advice that is, for the reasons stated above, not covered as a third party right pursuant to Article 10.3 of the DSU.

2. "Government Confidential Information"

7.7 On 23 November 1999, the Panel made the following ruling -- which we confirm here -- in response to an Australian request to adopt additional procedures to ensure the confidentiality of what Australia referred to as "Government Confidential Information" which Australia had been asked to submit:

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[132] The EC only did so *after* it filed its third party submission and after we received the expert replies to the Panel's questions.

In response to Australia's request of 17 November to adopt additional procedures to ensure the strict confidentiality of certain scientific information and in the light of Canada's reply of 18 November objecting to the timing and justification of this Australian request, Canada's subsequent letter of 19 November and Australia's letter of 22 November, the Panel has decided as follows.

The Panel appreciates Australia's willingness to submit the scientific information referred to by Canada. It is in the Panel's and the parties' interest that we are informed as much as possible before making a ruling in this highly complex matter. It is also beneficial for the WTO dispute settlement system more generally that parties are forthcoming in submitting evidence requested by panels.

The Panel takes note of the confidentiality concerns expressed by Australia as well as the additional procedures it proposes. We realize that previous panels have adopted additional procedures to maintain the confidentiality of sensitive business information. We are cognizant also of the Appellate Body's refusal to take additional steps in this respect in the case on *Canada – Measures Affecting the Export of Civilian Aircraft* (WT/DS70/AB/R, paras. 141-147).

In this dispute we are not faced with sensitive business information that could leak to private competitors through WTO dispute settlement. Instead, we are faced with reports that are only open to the Australian government and a risk of publication of these reports by the Panel, Secretariat staff or Canadian representatives. No direct business interests are involved. The matter is one mainly of government to government relationships.

In our view, these circumstances plead for a careful examination of already existing confidentiality rules applicable to our proceedings.

First, Article 18.2 of the DSU reads:

> "Written submissions to the panel … shall be treated as confidential, but shall be made available to the parties to the dispute … Members shall treat as confidential information submitted by another Member to the panel … which that Member has designated as confidential".

Second, Rule 2 of our Working Procedures[133] provides:

> "The deliberations of the Panel and the documents submitted to it shall be kept confidential. For the duration of the Panel proceeding, the parties to the dispute are requested not to release any papers or make any statements in public regarding the dispute, except as provided for in paragraph 3 of Appendix 3 …".

Third, in respect of Panel Members and their Secretariat staff, Article VII.1 of the Rules of Conduct for the DSU states:

> "Each covered person shall at all times maintain the confidentiality of dispute settlement deliberations and proceedings together with any information identified by a party as confidential".

Given, in particular, the government to government relationship of the matter before us, we consider that in principle the existing rules provide sufficient confidentiality

[133] Attached as Annex 2 to our Report.

protection for the information Australia is planning to submit. The existing rules oblige both disputing parties, third parties, the Panel and its staff to treat all written submissions and documents submitted to the Panel as confidential, in particular information submitted to the Panel which a Member designates as confidential. As was the Appellate Body in *Canada – Aircraft*, we as well

> "are confident that the participants and the third participants in this [Panel] will *fully respect* their obligations under the DSU, recognizing that a Member's obligation to maintain the confidentiality of these proceedings extends also to the individuals whom that Member selects to act as its representatives, counsel and consultants" (WT/DS70/AB/R, paragraph 141, emphasis in the original).

We see only two remaining areas that may require clarification. First, the risk that the Panel may, in its public report, quote from the confidential information or refer to the author of such information when using it in support of either party. Second, the risk of leaks occurring subsequent to the completion of DSU proceedings. To address these risks, the Panel has decided to add the following two rules to its Working Procedures[134]:

> "TREATMENT OF INFORMATION DESIGNATED AS CONFIDENTIAL
>
> 19. Any information that has been designated as confidential by the party submitting it and that is not otherwise available in the public domain shall not be disclosed in the report of the Panel. However, the Panel may make statements of conclusion drawn from such information without referring to the author of the information.
>
> 20. After the circulation of the Panel report or, in case of an appeal, after the circulation of the Appellate Body report, the Panel, Secretariat staff, parties and third parties shall return any information that has been designated as confidential to the party that submitted it, unless the latter party agrees otherwise".[135]

Having adopted these additional safeguards, we request Australia to submit the remaining information provided by the scientific reviewers, whatever form it may take, by 23 November 1999.

In reply to Canada's request of 19 November, once we receive this information from Australia within the set deadline we will consider it as part of our proceedings and validly submitted to us under Rule 5 of our Working Procedures.

3. Non-requested information submitted to the Panel

7.8 On 29 November 1999 the Panel sent the following letter to the parties:

> On 25 November 1999, the Panel received a letter from "Concerned Fishermen and Processors" in South Australia. The letter addresses the treatment by Australia of, on the one hand, imports of pilchards for use as bait or fish feed and, on the other

[134] See Annex 2 of our report.

[135] At our meeting with the experts advising the Panel, we made clear that Rule 20 also applies to the experts (Transcript, para. 8).

> hand, imports of salmon. The Panel considered the information submitted in the letter as relevant to its procedures and has accepted this information as part of the record. It did so pursuant to the authority granted to the Panel under Article 13.1 of the DSU.

7.9 We confirm this ruling recalling, in particular, that the information submitted in the letter has a direct bearing on a claim that was already raised by Canada, namely inconsistency in the sense of Article 5.5 of the SPS Agreement in the treatment by Australia of pilchard *versus* salmon imports. We refer in this respect to the Appellate Body report on *US – Import Prohibition of Certain Shrimp and Shrimp Products*[136], in particular, where it states that a panel's

> "authority to *seek* information is not properly equated with a *prohibition* on accepting information which has been submitted without having been requested by a panel. A panel has the discretionary authority either to accept and consider or to reject information and advice submitted to it, *whether requested by a panel or not* … The amplitude of the authority vested in panels to shape the processes of fact-finding and legal interpretation makes clear that a panel will *not* be deluged, as it were, with non-requested material, *unless that panel allows itself to be so deluged*".[137]

4. Terms of Reference

7.10 On 6 December 1999, two days before the meeting of the Panel with the parties and experts and after having received the parties first submissions as well as their rebuttal submissions, the Panel made a series of preliminary rulings in respect of its terms of reference. We confirm these rulings here, slightly modified as follows:

> 1. In its first written submission of 7 October 1999 Australia requested the Panel to make a number of preliminary rulings. Now that Canada has had the opportunity to respond to those requests in its rebuttal submission, the Panel rules as follows.
>
> *(i) The Measures at Issue*
>
> 2. First, in paragraph 73 of its first submission, Australia requested
>
> > "an immediate ruling that the measures at issue on which the Panel will make its findings are the measures applying to fresh chilled or frozen salmon from Canada, forming part of the measure described in paragraph 28 of this submission".
>
> 3. Canada has not objected to this request. Given the product scope of the measure examined by the original Panel (set out in paragraph 8.20 of the Panel Report), the clarifications provided in this respect by the Appellate Body (paragraphs 90-105) and the fact that no change or further specification in respect of product scope was made in the request by Canada for this Article 21.5 compliance Panel, we grant Australia's request.
>
> 4. We thus rule that the measures at issue on which the Panel will make its findings are the measures applying to fresh chilled or frozen salmon from Canada, forming part of the measure described in paragraph 28 of Australia's first submission.[138] We should add, though, that this ruling will not prevent us from also taking into account, where appropriate under the relevant provisions of the SPS Agreement, the way Australia treats products other than fresh chilled or frozen

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[136] Adopted 6 November 1998, WT/DS58/AB/R, paras. 99-110.
[137] *Ibid.*, para. 108, emphasis in the original.
[138] See Section II.C of our Report.

salmon from Canada. However, as was the case in the original procedure, the legal findings we will make on that basis shall apply only to measures applying to fresh chilled or frozen salmon from Canada.

(ii) Legal Claims -- and their Product Scope -- within the Panel's Terms of Reference

5. Second, in paragraph 91 of its first submission, Australia requested

> "that the Panel make an immediate ruling that:
>
> a. Article 2.3, first sentence does not come within the Panel's terms of reference, which are limited to the consistency of the implementing measures applied to fresh chilled or frozen salmon from Canada.
>
> b. the legal scope of the Panel's examination under Article 2.3 first sentence and Article 5.5 does not extend to claims of discrimination in the sense of either Article.
>
> c. the product scope of the Panel's examination of the consistency of Article 5.5 is limited to fresh chilled or frozen salmon from Canada, whole frozen herring for use as bait and live ornamental finfish".

6. All three requested rulings relate to the mandate of an Article 21.5 compliance panel and our specific terms of reference. They relate more particularly to the legal claims -- and, under the third request, their product scope – that fall within our mandate.

7. Two benchmarks apply when defining our terms of reference. First, Article 21.5 of the DSU pursuant to which this Panel was established. Second, our specific terms of reference set out in document WT/DS18/15, a document that refers, in turn, to the matter and relevant provisions of the covered agreements referred to by Canada in its request for this Panel (document WT/DS18/14).

8. We note that Article 21.5 itself refers to two types of disagreements, namely disagreements as to "the existence or consistency with a covered agreement of measures taken to comply with [DSB] recommendations and rulings" (emphasis added). Australia's requests for preliminary rulings pertain to the second type of disagreements, those on the "consistency with a covered agreement of measures taken to comply with [DSB] recommendations and rulings" (emphasis added).

9. The reference to "disagreement as to the … consistency with a covered agreement" of certain measures, implies that an Article 21.5 compliance panel can potentially examine the consistency of a measure taken to comply with a DSB recommendation or ruling in the light of any provision of any of the covered agreements. Article 21.5 is not limited to consistency of certain measures with the DSB recommendations and rulings adopted as a result of the original dispute; nor to consistency with those covered agreements or specific provisions thereof that fell within the mandate of the original panel; nor to consistency with specific WTO provisions under which the original panel found violations. If the intention behind this provision of the DSU had been to limit the mandate of Article 21.5 compliance panels in any of these ways, the text would have specified such limitation. The text, however, refers generally to "consistency with a covered agreement". The *rationale* behind this is obvious: a complainant, after having prevailed in an original dispute, should not have to go through the entire DSU process once again if an implementing Member in seeking to comply with DSB recommendations under a covered

agreement is breaching, inadvertently or not, its obligations under other provisions of covered agreements. In such instances an expedited procedure should be available. This procedure is provided for in Article 21.5. It is in line with the fundamental requirement of "prompt compliance" with DSB recommendations and rulings expressed in both Article 3.3 and Article 21.1 of the DSU.

10. On that basis, we agree with the Article 21.5 compliance panel in *EC – Bananas III* (requested by Ecuador) when it stated that "[t]here is no suggestion in the text of Article 21.5 that only certain issues of consistency of measures may be considered" (WT/DS27/RW/ECU, paragraph 6.8).

11. We recall, however, that there is a second benchmark to be looked at in setting our terms of reference, namely Canada's request for this Panel (document WT/DS18/14). In that request, Canada explicitly included claims under Article 2.3 and Article 5.5 of the SPS Agreement, claims which Australia would want us to exclude, in whole or in part, from our mandate. Canada claimed, more particularly, that Australia's implementing measures

> "(iii) arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail, including between New Zealand and Canada and between Australia and Canada, and are applied in a manner that constitutes a disguised restriction on international trade, contrary to Article 2.3 of the SPS Agreement;
>
> (iv) when considered against the measures outlined in AQPM 1999/51 for non-viable marine finfish products other than salmonids and live ornamental finfish, they reflect arbitrary or unjustifiable distinctions in Australia's appropriate level of protection in different situations, resulting in discrimination or a disguised restriction on international trade, contrary to Article 5.5 of the SPS Agreement" (WT/DS18/14, page 2).

12. Without, at this stage, addressing the entirely separate question of whether these Canadian claims are valid on their merits, we thus rule – with reference, first, to the general language of Article 21.5 and, second, to the claims explicitly listed in Canada's panel request – that none of the limitations referred to in any of the three preliminary rulings requested by Australia apply.

13. In respect of the first ruling requested by Australia, we stress that we do not now need to decide the substantive question of whether the first sentence of Article 2.3 of the SPS Agreement, considered independently from Article 5.5, covers only discrimination in respect of the same product or also discrimination between different products.

14. As to the second ruling requested by Australia, we recall that even assuming that no finding of discrimination under Articles 2.3 or 5.5 was made in the original dispute – a matter contested by Canada -- the fact that no such claim may have been dealt with in the original dispute does not prevent an Article 21.5 compliance panel from doing so. Nowhere in the DSU can we trace the requirement referred to by Australia that Article 21.5 compliance panels can only reconsider WTO provisions dealt with by the original panel in case of a "change in circumstances". If, indeed, no "change in circumstances" occurred, as a matter of substance, one could expect that a compliance panel would simply confirm the finding made by the original panel. This issue is, however, a matter of substantive compliance with WTO rules, not one of terms of reference.

15. Finally, considering the third ruling requested by Australia, we recall that already in the original dispute more comparisons were referred to by Canada than

those between salmon, on the one hand, and whole frozen herring for use as bait and live ornamental finfish, on the other. To limit our mandate to comparisons with the latter two categories only would thus even go a step further than limiting Article 21.5 to claims or arguments made before the original panel, a limitation not even Australia accepts.[139] Only claims or arguments under which an actual violation was found by the original panel would then be subject to Article 21.5 scrutiny. Again, nowhere in the DSU can we find such limitation. Given the broad language of Article 21.5 and of Canada's claims under Article 5.5 set out in the request for this Panel, we find that all comparisons made by Canada in its first round of submissions to this Panel fall within our terms of reference.[140]

(iii) The Tasmanian Import Ban[141]

16. We now turn to the question of whether the import ban on salmonids imposed by the Government of Tasmania on 20 October 1999 falls within our terms of reference. This measure was brought to our attention in a letter received from Canada on 27 October 1999. In that letter Canada requested authorization from the Panel to file a second supplement to its first submission dealing specifically with this newly imposed Tasmanian ban. In reply, the Secretary to the Panel sent the following message on 28 October:

> "The Panel has taken note of Canada's letter of 27 October regarding Tasmania's import prohibition on salmon. Even though *this letter seems to indicate that the import prohibition allegedly imposed by the Government of Tasmania is not one "taken to comply with the recommendations and rulings" in the sense of Article 21.5, nor one in respect of which the Panel can make a ruling of consistency pursuant to its terms of reference*, the Panel grants the Canadian request to submit an additional brief … on the grounds that it may shed further light on the conformity of the measures that are subject to the Panel's scrutiny … Australia may submit its comments on this brief … as well as comments on whether the measure has been taken to comply with the rulings adopted by the DSB. Note, however, that *the Panel's views expressed in this letter are preliminary only, based solely on the information reflected in the Canadian letter, and conveyed to the parties with the sole intention to set some parameters for their further submissions*" (emphasis added).

17. Having considered since then the submissions we received in this respect, first, from Canada on 4 November, second, from Australia on 17 November and, third, the parties' rebuttals filed on 25 November, we come to a conclusion different from the preliminary view tentatively expressed in the letter of 28 October.

18. In its supplement of 4 November, Canada did not ask the Panel to rule on the SPS consistency of the Tasmanian ban as such, but asked us to "consider the consequences of Tasmania's ban for Australia's non-compliance with the recommendations and rulings of the DSB" (paragraph 5) arguing that "Tasmania's ban on salmonid imports has negated, in part of Australia, even limited access for Canadian salmon products … In so doing, the Tasmanian ban has exacerbated Australia's non-compliance" (paragraph 14). In our view, we cannot rule on the so-called exacerbation of Australia's non-compliance without examining also the SPS consistency of the Tasmanian ban itself. If the Tasmanian ban is consistent with the SPS Agreement, it cannot, as Canada put it, negate market access derived from new federal import requirements inconsistently with the SPS Agreement. Only if the ban

[139] Australia, first submission, para. 81.
[140] Canada did not refer to any other comparisons in its subsequent submissions to the Panel.

is inconsistent with the SPS Agreement can it negatively affect Australia's compliance.

19. In its rebuttal submission, however, Canada also claimed[142] that the Tasmanian ban as such is inconsistent with Articles 5.1, 2.2, 5.6 and 8 of the SPS Agreement.

20. Australia submits that the Tasmanian ban is not a "measure taken to comply" in the sense of Article 21.5, is outside the Panel's terms of reference and cannot be adduced as evidence that the new federal import requirements themselves are inconsistent with the SPS Agreement.

21. Two issues arise when considering whether the Tasmanian ban falls within our mandate. First, is the ban a "measure taken to comply with [DSB] recommendations and rulings"? Since Article 21.5 exclusively refers to disagreements as to "measures taken to comply", any other measures fall outside the scope of a compliance panel. Second, is the Tasmanian ban sufficiently specified in Canada's panel request consistently with the requirements of Article 6.2 of the DSU so as to fall within our terms of reference?

22. In respect of the first issue, we note that an Article 21.5 panel cannot leave it to the full discretion of the implementing Member to decide whether or not a measure is one "taken to comply". If one were to allow that, an implementing Member could simply avoid any scrutiny of certain measures by a compliance panel, even where such measures would be so clearly connected to the panel and Appellate Body reports concerned, both in time and in respect of the subject-matter, that any impartial observer would consider them to be measures "taken to comply". Without attempting to give a precise definition of "measures taken to comply" that should apply in all cases, we are of the view that in the context of this dispute at least any quarantine measure introduced by Australia subsequent to the adoption on 6 November 1998 of DSB recommendations and rulings in the original dispute – and within a more or less limited period of time thereafter -- that applies to imports of fresh chilled or frozen salmon from Canada, is a "measure taken to comply". The Tasmanian ban, introduced on 20 October 1999, imposes an import prohibition on all imports of salmonids into part of Australia on quarantine grounds. We thus find that it is a measure taken to comply in the sense of Article 21.5.[143]

23. The question of whether a measure is one in the direction of WTO conformity or, on the contrary, maintains the original violation or aggravates it, can, in our view, not determine whether a measure is one "taken to comply". If this were

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[141] Australia, in a subsequent letter of 9 December 1999, raised questions in respect of the use of the word "ban". We note that the Tasmanian measure, as published on 20 October 1999 in the Tasmanian Government Gazette, states that "fish of the family *Salmonidae*, and animal material of or derived from fish of the family *Salmonidae*, must not be moved in the protected area" -- the latter area being a large part of Tasmania -- unless a permit is issued and any conditions specified in that permit are complied with. Since, on the basis of the evidence on record, no such permits were issued, nor were any conditions published for product to be able to enter Tasmania under the 20 October 1999 measure, it is clear to us that the measure is in effect an import ban applying also to the product at issue here, namely fresh chilled or frozen salmon from Canada. That is why we refered to the measure as a "ban".

[142] In the original version of these preliminary rulings we mistakenly used the word "argued" instead of "claimed". In our view, paragraphs 19-21 of Canada's rebuttal submission do, indeed, include legal claims, not only arguments when stating (at para. 21) that "at a minimum, the additional certification requirement is not based on a risk assessment, contrary to Article 5.1 of the SPS Agreement and, by implication, is also inconsistent with Article 2.2; it is an unnecessary information requirement, contrary to Article 8 and Annex C.1(c) of the SPS Agreement; and by Australia's express admission, it is more trade restrictive than required to achieve Australia's appropriate level of protection contrary to Article 5.6 of the SPS Agreement".

[143] The fact that the measure is one taken by Australia, albeit not Australia's central government authorities, is further discussed in para. 27 of these preliminary rulings and para. 7.11 of our Report.

so, one would be faced with an absurd situation: if the implementing Member introduces a "better" measure -- in the direction of WTO conformity -- it would be subject to an expedited Article 21.5 procedure; if it introduces a "worse" measure -- maintaining or aggravating the violation -- it would have a right to a completely new WTO procedure. Our interpretation of "measures taken to comply" is further supported by the practical difficulty of making a distinction between "better" and "worse" measures. Had parts of the new banana regime subject to the Article 21.5 panel requested by Ecuador in *EC – Bananas III* been "worse" than the original regime, would this have been a reason for the panel to decide that the new regime, or parts thereof, were outside its terms of reference? In our view, it would not, as the *Bananas III* compliance panel implicitly decided by accepting all elements of the measures brought to its attention.

24. In respect of the second issue – the coverage of Canada's Panel request as far as implementing measures are concerned – several elements have prompted us to decide that the Panel request does, indeed, cover the Tasmanian ban even though the ban was only introduced subsequent to this Panel's establishment and therefore not *expressis verbis* mentioned in Canada's Panel request.

25. Canada's Panel request refers to the following measures:

> "Canada requests that the panel find that Australia has not taken measures to comply with the 6 November 1999 recommendations and rulings of the DSB.
>
> Canada further requests that the panel find that even if Australia has taken or does take measures to comply with the recommendations and rulings of the DSB by implementing the policies for non-viable salmonids products outlined in AQPM 1999/51, those measures are not, or would not be, consistent with the SPS Agreement" (emphasis added).

26. Previous panels have examined measures not explicitly mentioned in the panel request on the ground that they were implementing, subsidiary or so closely related to measures that were specifically mentioned, that the responding party could reasonably be found to have received adequate notice of the scope of the claims asserted by the complainant.[144] In this case, only AQPM 1999/51 of 19 July 1999 was explicitly identified in the Panel request. However, the Panel request also specifies measures that Australia "has taken or does take" to implement AQPM 1999/51, thereby potentially also covering certain future measures. The Panel request also identifies more generally "measures taken to comply" as part of the matter referred to this compliance Panel. None of the parties contest, for these reasons, that AQPM 1999/64, 66, 69, 70, 77 and 79 – all taken subsequent to the Panel's establishment and thus not specifically mentioned in the Panel request -- can be considered by this Panel.

27. For similar reasons, we are of the view that the Tasmanian ban also falls within our mandate. The ban falls within the category of measures specified in the Panel request, namely "measures to comply with the recommendations and rulings of the DSB" that "Australia has taken or does take" or, at least, is so closely related to these measures that Australia can reasonably be found to have received adequate

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[144] Panel and Appellate Body Report on *European Communities - Bananas III*, respectively at para. 7.27 and para. 140; Panel Report on *Japan - Measures Affecting Consumer Photographic Film and Paper*, adopted 22 April 1998, WT/DS/44/R para. 10.8; Appellate Body Report on *Australia – Measures Affecting the Importation of Salmon*, adopted 6 November 1998, WT/DS18/AB/R, para. 121 (hereafter "*Australia – Salmon*"), paras. 90-105; and Panel Report on *Argentina – Safeguard Measures on Imports of Footwear*, adopted 12 January 2000, WT/DS121/R, paras. 8.23-8.46.

> notice of the scope of Canada's claims: first, because of the definition of "measures taken to comply" provided above in paragraphs 22-23; second, because of the often ongoing or continuous character that the matter of implementation – as identified in the Panel request -- takes. What is referred to this Article 21.5 Panel is basically a disagreement as to implementation. One measure was explicitly identified, with the knowledge, however, that further measures might be taken. To exclude such further measures from our mandate once we have found that they are "measures taken to comply", would go against the objective of "prompt compliance" set out in Articles 3.3 and 21.1 of the DSU. To rule that such measures fall within our mandate would not, in our view, deprive Australia of its right to adequate notice under Article 6.2. On the basis of the Panel request Australia should have reasonably expected that any further measures it would take to comply, could be scrutinized by the Panel. We are faced here not with an Australian measure that was unexpectedly included by Canada in its claims, but with a measure taken during our proceedings by Australia, or in this case one of its territorial subdivisions for the acts of which it is in principle responsible under international law, and as part of Australia's implementation process to which Canada subsequently referred. Arguably, the surprise or lack of notice may, indeed, be more real for Canada than for Australia.
>
> 28. We do not consider that measures taken subsequently to the establishment of an Article 21.5 compliance panel should *per force* be excluded from its mandate. Even before an original panel such measures were found to fall within the panel's mandate because, in that specific case, the new measures did not alter the substance – only the legal form -- of the original measure that was explicitly mentioned in the request.[145] In compliance panels we are of the view that there may be different and, arguably, even more compelling reasons to examine measures introduced during the proceedings. As noted earlier, compliance is often an ongoing or continuous process and once it has been identified as such in the panel request, as it was in this case, any "measures taken to comply" can be presumed to fall within the panel's mandate, unless a genuine lack of notice can be pointed to. Especially under the first leg of Article 21.5 when it comes to disagreements on the <u>existence</u> of measures taken to comply, one can hardly expect that all such measures – when there is no clarity on their very existence – be explicitly mentioned up-front in the panel request.
>
> 29. On these grounds, we find that the Tasmanian import ban falls within our mandate.

7.11 In a subsequent letter dated 9 December 1999, Australia commented on these preliminary rulings. We address those comments that, in our view, need clarification in footnotes 141, 142 and 143 above.

7.12 As stated there, as well as in paragraph 27 of our preliminary rulings, we are of the view that the Tasmanian ban is to be regarded as a measure taken by Australia, in the sense that it is a measure for which Australia, under both general international law and relevant WTO provisions, is responsible.[146] We note also that the Tasmanian measure is a sanitary measure applied within the

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[145] Panel Report on *Argentina – Safeguard Measures on Imports of Footwear*, op. cit., paras. 8.40-8.46.

[146] In respect of general international law, see Article 27 of the Vienna Convention on the Law of Treaties ("A party may not invoke the provisions of its internal law as justification for its failure to perform a treaty") and Article 6 of the Draft Articles on State Responsibility of the International Law Commission ("The conduct of an organ of the State shall be considered as an act of that State under international law, whether that organ belongs to the constituent, legislative, executive, judicial or other power, whether its functions are of an international or an internal character, and whether it holds a superior or a subordinate position in the organization of the State", Yearbook of the ILC, 1996, Chapter III).

territory of Australia that directly affects international trade and thus, pursuant to Annex A, paragraph 1, and Article 1.1 of the SPS Agreement, is subject to the SPS Agreement.

7.13 As recognized by Australia in its letter of 9 December 1999, the Tasmanian measures "could be characterized as … measures taken by 'other than a central government body' in the sense of Article 13 of the SPS Agreement, and would constitute measures 'taken by a regional government' within Australia's territory, in the sense of Article 22.9 of the DSU". Article 13 of the SPS Agreement provides unambiguously that: (1) "Members are fully responsible under [the SPS] Agreement for the observance of all obligations set forth herein"; and (2) "Members shall formulate and implement positive measures and mechanisms in support of the observance of the provisions of this Agreement by other than central government bodies". Reading these two obligations together, in light of Article 1.1 of the SPS Agreement referred to earlier, we consider that sanitary measures taken by the Government of Tasmania, being an "other than central government" body as recognized by Australia, are subject to the SPS Agreement and fall under the responsibility of Australia as WTO Member when it comes to their observance of SPS obligations. In addition, Article 22.9 of the DSU states clearly that "[t]he dispute settlement provisions of the covered agreements [including the DSU itself] may be invoked in respect of measures affecting their observance taken by regional or local governments or authorities within the territory of a Member", including, as acknowledged by Australia, the measures taken by Tasmania at issue here. As a Panel acting under these dispute settlement provisions, we are thus entitled to consider whether the Tasmanian measures observe the SPS Agreement.[147]

7.14 At the meeting with the parties on 10 December 1999, Australia notified the Panel – in a letter dated 9 December 1999 -- that the Tasmanian import prohibition of 20 October 1999 was no longer in force and had been replaced with a measure published on 24 November 1999.

7.15 The new measure of 24 November 1999 prohibits the importation of fresh chilled or frozen salmon unless it is demonstrated that the salmon has been derived from fish grown in an area free of six specified diseases. Since Canada is not free from all of these diseases, the new measure effectively bans imports of Canadian fresh chilled or frozen salmon.

7.16 Canada, in a letter dated 16 December 1999, "maintains its position that Tasmania's new measure nullifies even such measures as Australia has taken to comply" and claims that "Tasmania's measure -- whether the original ban or the new measure -- nullifies Australia's own measures taken to comply". Canada refers back to the claims and arguments it made in respect of the original, 20 October 1999, Tasmanian measure. Canada also argues in this letter that it need not seek an independent ruling on the SPS consistency of the new Tasmanian measure, submitting that this measure can be considered "in the context of Australia's compliance". To the extent that this means that there is no need to start new DSU proceedings for the Panel to address also the Tasmanian measures, we agree for the reasons explained in paragraphs 21-28 of our preliminary rulings above. However, to the extent Canada's position implies that, to rule on Canada's claims, the Panel need not decide on the SPS consistency of the ban as such, we disagree for the reasons set out in paragraph 18 of the preliminary rulings above. It is, indeed, impossible to judge the effect of the Tasmanian measure on Australia's federal measures and their compliance with DSB recommendations, without knowing whether the Tasmanian measure is SPS consistent or not.

[147] The main issue that arises from Tasmania, and not the federal authorities, introducing the measure is one of enforcement of DSB recommendations within Australia and Australia's obligations in respect of this enforcement by Tasmania, set out in the second sentence of Article 13 of the SPS Agreement and the second and third sentence of Article 22.9 of the DSU. However, in this dispute, our task in respect of the Tasmanian measure is to decide on the application of, and consistency with, the SPS Agreement, not on the enforcement or compliance by Australia with any findings of inconsistency of the Tasmanian measure that we may make below.

7.17 At this stage -- where we decide on the Panel's terms of reference -- we need to consider only whether Canada's claims in respect of the new, 24 November 1999, Tasmanian measure fall within our mandate. The reasons set out in our preliminary rulings above lead us to rule that they do.[148]

7.18 An additional issue arises, however, from the fact that the replacement of the 20 October measure by that of 24 November, was only notified by Australia to the Panel and Canada at the meeting with the parties on 10 December, and Canada only challenged that measure in a letter dated 16 December 1999. Although these Canadian claims fall within our mandate, this raises the question of whether it is appropriate to examine them in this case.

7.19 On the one hand, we consider that Australia could have notified the Panel and Canada of this change in the Tasmanian measure at an earlier stage in our proceedings. After all, the revocation of the old measure occurred on 18 November and was published, together with the new measure, on 24 November, both dates falling before the due date for the parties' rebuttal submissions (25 November) and well before the Panel's meetings with the parties (8-10 December). In contrast, Australia only notified the new measure on the last day of our meetings with the parties, 10 December. A Panel decision that the new measure cannot be looked at since it was challenged too late, may thus inappropriately benefit Australia.

7.20 On the other hand, it is true that the new measure was challenged late in our proceedings, i.e. after our meetings with the parties. To decide on its SPS consistency without giving Australia the opportunity to defend itself would go against due process. We note, however, that in its letter of 9 December 1999, notifying the new measure, Australia already elaborated on this measure, stating even that "Australian Commonwealth Ministers are on the public record in objecting to such action [both the old and the new Tasmanian measure]". In addition, on 16 December 1999, Australia made another submission "on Tasmanian measures", addressing also the new measure.

7.21 For the reasons stated above, we find that Canada's claims in respect of the new Tasmanian measure fall within our mandate, and shall examine those claims below. To do otherwise would, in our view, go against the principle of prompt settlement of disputes[149] and could hamper implementation of both DSB recommendations in the original dispute and our findings in this case.[150] To make absolutely sure that Australia's due process rights are respected, by letter of 6 January 2000 we gave Australia another opportunity to comment on Canada's challenge of the new Tasmanian measure. Australia submitted those comments on 17 January 2000.

7.22 Since we decided that we can examine both the old and the new Tasmanian measure and the old one is no longer in force, below we limit our substantive examination to the new, 24 November, Tasmanian measure.

C. "THE EXISTENCE … OF MEASURES TAKEN TO COMPLY WITH THE RECOMMENDATIONS AND RULINGS" OF THE DSB IN THE SENSE OF ARTICLE 21.5 OF THE DSU

7.23 Canada claims that Australia has not implemented all of the measures required for it to comply with the recommendations and rulings of the DSB. On that ground, Canada submits that no measures to implement the recommendations and rulings of the DSB "exist" in the sense of Article 21.5 of the DSU.

7.24 At the DSB meeting of 27-28 July 1999, Australia announced that its "Quarantine and Inspections Service Decision of 19 July had brought Australia into full conformity with its WTO

[148] See paras. 17-28 of our preliminary rulings.
[149] See Articles 3.3 and 21.1 of the DSU.
[150] See Appellate Body report on *Australia – Salmon*, op. cit., para. 223.

obligations".[151] The decision referred to is AQPM 1999/51.[152] This decision sets out new policies in respect of salmonids, non-salmonids and live ornamental finfish.

7.25 Subsequent to the 19 July 1999 decision, seven additional AQPM's were published. These additional AQPM's set out in more detail the new policies announced in AQPM 1999/51.

7.26 Canada contests that this series of new measures are consistent with the SPS Agreement. Australia, in contrast, is of the view that they ensure full implementation of the DSB recommendations and rulings and are fully consistent with the SPS Agreement.

7.27 We do not, at this stage, need to examine questions of consistency. Of importance here, is whether the new measures – according to Australia fully implementing DSB recommendations and rulings -- "exist".

7.28 In our view, a new regime of implementing measures can be said to "exist" when this regime sets out all requirements and criteria under which the product concerned *can* enter the market of the implementing Member. For products to be able to enter the market, the new measures setting out these requirements and criteria also have to be in force. We do not consider a framework regulation setting out the basic – but not all – requirements and criteria to be sufficient for a new regime to "exist". On the other hand, we do not consider it necessary that product has actually entered the market. In our view, of decisive importance is whether under the new regime trade *opportunities effectively exist*; not whether they will occur in the future, nor whether they have actually given rise to specific transactions in the past.

7.29 Examining the measures at issue here, we find that taken together they define all requirements and criteria for relevant product to be able to enter the Australian market under the new quarantine regime.[153]

7.30 However, the date of entry into force of the new measures varies according to the products covered. In all cases, the entry into force – and thus the "existence" of the measures taken to comply – occurred *subsequent* to 6 July 1999, the date of expiry of the reasonable period of time given to Australia to implement the DSB recommendations and rulings. Since, in this case, Australia was under an obligation to implement the DSB recommendations and rulings by the end of the reasonable period of time[154], we find that for the period of time that the new measures did not and will not apply subsequent to 6 July 1999, no measures taken to comply existed or will exist in the sense of Article 21.5.

7.31 For salmonids, including fresh chilled or frozen salmon from Canada at issue here, the basic framework was laid down on 19 July 1999 (AQPM 1999/51). The necessary supplements to this basic framework -- "conditions which clarify arrangements for the importation of uncanned salmonid product in accordance with the policies announced in AQPM 1999/51" -- were published on

[151] Document WT/DSB/M66, p. 1.

[152] See paras. 2.19, 2.26 and 2.30 of our Report.

[153] In this respect, we refer, in particular, to the publication of criteria for granting approval to facilities operating in Australia to further process imported salmonids to a stage that is "consumer-ready" as defined in APQM 1999/69 (Exhibit P to Australia's rebuttal submission, see para. 2.21). The specification of these criteria was, in our view, a prerequisite for certain salmonid imports – i.e. those that require further processing – to be able to enter the market. Without them, certain of the trade opportunities offered in the new regime would not effectively exist.

[154] Since Australia and Canada could so far not agree on compensation as a temporary measure pursuant to Article 22.1 of the DSU, Australia was under an obligation to comply with DSB recommendations and rulings by the end of the reasonable period of time. If it did not do so, Australia could face suspension of concessions or other obligations under Article 22.6 of the DSU.

20 October 1999.[155] Thus, only on 20 October 1999 -- almost three and a half months late – did measures taken to comply in respect of Canadian fresh chilled or frozen salmon "exist".

7.32 For non-salmonids -- including herring for use as bait which was one of the situations compared to Canadian salmon under Article 5.5 in the original dispute -- the new measures entered into force on 1 December 1999.[156] Thus, the inconsistency with Article 5.5 found in the original dispute in respect of Canadian salmon vis-à-vis herring for use as bait was maintained, at least in part, until 1 December 1999, i.e. until almost five months after the end of the reasonable period of time.

7.33 Finally, for live ornamental finfish -- the other situation compared to Canadian salmon under Article 5.5 in the original dispute -- implementation of new requirements will be staged over a period of time.[157] On 1 December 1999, the requirements relating to import permits entered into force. From 1 February 2000, all new requirements relating to exporters and exporting countries will apply. From 1 May 2000, all importers must fully comply with new post-arrival quarantine requirements. Thus, although the inconsistency with Article 5.5 found in the original dispute in respect of Canadian salmon vis-à-vis live ornamental finfish may be gradually alleviated, all requirements and criteria for product to enter Australia under the new regime – a regime that according to Australia will achieve compliance – will only apply from 1 May 2000. This particular inconsistency with Article 5.5 will thus – as Australian quarantine policy now stands – be maintained, at least in part, for almost 10 months subsequent to the expiry of the reasonable period of time.

7.34 In its oral statement, Canada also refers to 1 January 2002 as the date of entry into force of certain disease testing requirements that apply to imports of goldfish. We note, however, that the requirement referred to relates to statements of freedom from specified disease agents based on a testing programme that demonstrates absence of the disease agents in the source population over a period of at least two years. The very nature of this requirement makes it difficult to impose the requirement immediately. If this were done, imports from countries where so far no testing programmes were carried out would be banned for two years. On that ground, a staged implementation of disease testing requirements, as the one imposed by Australia, is, in our view, justifiable and does, we believe, not prevent the new regime on live ornamental finfish from "existing" in the sense referred to earlier.[158]

7.35 Consequently, for the periods of time specified above, no measures taken to comply "existed" in the sense of Article 21.5. As a result, during those periods of time, Australia failed to bring its measure into compliance with the SPS Agreement as called for in the DSB recommendation, in the sense referred to in Article 22.6 of the DSU.

7.36 Under its claim that Australia has not taken measures to comply, Canada also submits that "not all of the requirements Australia imposes are necessarily listed in the AQPMs".[159] Canada refers, in particular, to a requirement imposed on Canada in order to obtain a health certificate that "fish do not come from waters within 10 kilometers or one tidal interchange of an [ISA] infected farm, whichever is greater". Canada argues that this requirement is specified neither in the AQPMs nor mentioned in the 1999 Report. However, since Canada does not make any claim of inconsistency with the SPS Agreement, nor provided any documentary evidence, in respect of this requirement, we are not called upon, nor in a position, to make any findings on this requirement.

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[155] AQPM 1999/69, p. 1, referred to above in paras. 2.21-2.24 of our Report.

[156] AQPM 1999/64, dated 22 September 1999, and AQPM 1999/79, dated 16 November 1999, referred to above in paras. 2.27 and 2.28 of our Report.

[157] AQPM 1999/77, dated 17 November 1999, referred to above in para. 2.31 of our Report.

[158] See para. 7.27.

[159] Para. 16 of Canada's Oral Statement at the meeting with the parties.

D. SANITARY MEASURES BASED ON A RISK ASSESSMENT PURSUANT TO ARTICLE 5.1 OF THE SPS AGREEMENT

7.37 The previous section of our Report addresses the existence of certain measures. We now turn to the second part of Canada's claims, those relating to the consistency of the new measures with certain provisions of the SPS Agreement. We note, generally, that Australia has, indeed, lifted the import prohibition on Canadian fresh chilled or frozen salmon and taken steps to facilitate access of Canadian product, albeit subject to certain conditions. We recall also that the burden of proof rests on Canada to demonstrate that these conditions are inconsistent with the provisions of the SPS Agreement.

7.38 We start our examination with Canada's claims under Article 5.1.

Article 5.1 reads as follows:

> "Members shall ensure that their sanitary … 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".

7.39 An examination of whether sanitary measures are based on a risk assessment in accordance with Article 5.1 involves two steps:

> (1) does the study put forward as a risk assessment meet the requirements of a risk assessment set forth in Article 5.1 and Annex A of the SPS Agreement?;
>
> (2) if so, are the sanitary measures finally selected *based on* this risk assessment as required in Article 5.1?

1. The three requirements of a risk assessment in accordance with the SPS Agreement

7.40 Risk assessment for purposes of the SPS Agreement and, in particular, Article 5.1 thereof, is defined in paragraph 4 of Annex A as

> "The evaluation of the likelihood of entry, establishment or spread of a … disease within the territory of an importing Member according to the sanitary … measures which might be applied, and of the associated potential biological and economic consequences".

7.41 This definition contains a three-pronged test. Consequently, the 1999 IRA[160], the only study Australia puts forward as a risk assessment in support of its measures, needs to

> "(1) *identify* the diseases whose entry, establishment or spread a Member wants to prevent within its territory, as well as the potential biological and economic consequences associated with the entry, establishment or spread of these diseases;
>
> (2) *evaluate the likelihood* of entry, establishment or spread of these diseases, as well as the associated potential biological and economic consequences; and

[160] Import Risk Analysis on Non-Viable Salmonids and Non-Salmonid Marine Fish, Australian Quarantine and Inspection Service, July 1999 ("1999 IRA"). When referring to "the 1999 IRA" in this report, we mean the version that was submitted by Australia as Exhibit A to its first submission. We note that a later version was published in book form on 12 November 1999. This version was only submitted to the Panel during our meeting with the parties on 10 December 1999. See, in this respect, paras. 7.73 ff. below.

(3) evaluate the likelihood of entry, establishment or spread of these diseases *according to the SPS measures which might be applied*".[161]

7.42 Canada does not contest that the 1999 IRA meets the first requirement. At issue here is whether the 1999 IRA evaluates the likelihood of entry, establishment or spread of the diseases identified by Australia (second requirement) and whether it does so according to the sanitary measures which might be applied (third requirement).

7.43 The definition of risk assessment in Annex A is to be read and applied in the context of the general obligation in Article 5.1 to base sanitary measures on a risk assessment as well as in light of the specific factors a risk assessment has to take into account pursuant to Article 5.1[162], Article 5.2[163] and Article 5.3.[164] Finally, also the basic obligations in Article 2.2 impart meaning to the definition of risk assessment.[165]

(a) The second requirement: "The evaluation of the likelihood of entry, establishment or spread of … disease"

7.44 The context we referred to in the previous paragraph is of particular importance when examining Canada's claim that the 1999 IRA does not *adequately* evaluate likelihood and evaluates likelihood in a *highly subjective* way.

7.45 In the original dispute Canada claimed, and the Appellate Body agreed[166], that the 1996 Final Report[167] evaluated *possibility* -- instead of *likelihood* or *probability* -- of disease entry, establishment or spread. On that basis, the Appellate Body found that the 1996 Final Report did not meet the second requirement of a risk assessment. "Some" evaluation of the likelihood – on the basis of which the original panel had continued its examination without making a finding on the issue[168] – was found to be insufficient. What is required, according to the Appellate Body, is "the evaluation of the likelihood", without there being a need for this evaluation to be done quantitatively.[169]

7.46 In this case Canada agrees that the 1999 IRA constitutes progress vis-à-vis the 1996 Final Report and addresses likelihood or probability. However, Canada is of the view that the 1999 IRA does not appropriately, adequately or objectively *evaluate* such likelihood in accordance with the second requirement of risk assessment. Although Canada submits in its answer to a Panel Question that the 1999 IRA "cannot be said to have taken [the factors referred to in Articles 5.1 to 5.3] into

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[161] Appellate Body reports on *Australia – Salmon*, op. cit., para. 121 and *Japan – Measures Affecting Agricultural Products*, adopted 19 March 1999, WT/DS76/AB/R, para. 112 (hereafter "*Japan – Varietals*"). See, originally, Panel report on *Australia – Salmon*, adopted 6 November 1998, WT/DS18/R, para. 8.72.

[162] Article 5.1 refers to "risk assessment techniques developed by the relevant international organizations".

[163] Article 5.2 refers to: "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".

[164] Article 5.3 refers to: "the potential damage in terms of loss of production or sales in the event of the entry, establishment or spread of a pest or disease; the costs of control or eradication in the territory of the importing Member; and the relative cost-effectiveness of alternative approaches to limiting risks".

[165] Article 2.2 reads: "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".

[166] Appellate Body report on *Australia – Salmon*, op. cit., para. 135.

[167] Salmon Import Risk Analysis, Final Report, published by the Department of Primary Industries and Energy, December 1996. The 1996 Final Report was the study referred to by Australia as a risk assessment in support of the measure examined in the original dispute.

[168] Panel report, op. cit., para. 8.83.

[169] Appellate Body report, para. 124: "The likelihood may be expressed either quantitatively or qualitatively".

account in an appropriate manner"[170], Canada does not make any specific claims of inconsistency in this respect.

7.47 Canada's claim raises the question of where to put the threshold of an *evaluation* of *likelihood* consistent with the SPS Agreement. On the one hand, we find it difficult to read into the summary definition of risk assessment set out in paragraph 4 of Annex A – which only refers to "the evaluation of the likelihood"[171] – specific requirements such that minor flaws or misconceptions at a detailed level would preclude a study from falling within the SPS definition of risk assessment.[172] As agreed by all parties and experts involved in this dispute, risk assessment, in particular a qualitative risk assessment like the 1999 IRA, inevitably includes subjective elements.[173] On the other hand, we realize that there may be studies that are flawed or biased to such extent that they cannot be said to meet any standard of objectivity. We do not think that such studies should pass the test of a risk assessment in accordance with the SPS Agreement.

7.48 In the absence of an explicit, textual threshold in paragraph 4 of Annex A itself, we turn to the context outlined in paragraph 7.43 above. The reference made there to a series of objective factors such as "risk assessment techniques developed by the relevant international organizations"[174], "available scientific evidence"[175], "scientific principles" and "sufficient scientific evidence"[176], strengthens our view that the evaluation of likelihood needs to achieve a certain level of objectivity.

7.49 We find further support in Article 5.7 of the SPS Agreement. This provision allows Members to take provisional sanitary measures when relevant scientific evidence is insufficient pending a search for the additional information "necessary for a *more objective* assessment of risk" (emphasis added). This implies that except for provisional measures – not at issue here – a risk assessment has to meet a certain level of objectivity.[177]

7.50 We also considered Section 1.4 of the 1997 OIE International Aquatic Animal Health Code on "Import Risk Analysis" which includes techniques that a risk assessment in the area of aquatic animal health must take into account pursuant to Article 5.1. This OIE Code states that "[t]he principal aim of import risk analysis is to provide importing countries with an *objective and defensible method* of assessing the disease risks associated with the importation of aquatic animals … Import risk analysis is preferable to a zero-risk approach because it provides a *more objective decision*"

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[170] Canada's answer to Panel Question 34.

[171] The one criterion further specified in paragraph 4 of Annex A itself is that the evaluation needs to be "according to the sanitary … measures which may be applied". However, this is the third requirement of risk assessment examined below. The Appellate Body statement that not "some evaluation" but "the evaluation" of the likelihood is required does not provide further guidance on this issue either.

[172] For that reason, we find it difficult to agree with Dr. Wooldridge's statement implying that the SPS Agreement legally requires "the highest standards of risk assessment that we possibly can reach" (Transcript, para. 50, see also Transcript, para. 45). For example, although risk assessment techniques developed in the OIE have to be taken into account pursuant to Article 5.1, they are not legally binding in the WTO context. In our view, the fact that Dr. Wooldridge concludes that the 1999 IRA is *not* a risk assessment in accordance with the SPS Agreement does, in part, stem from the very high benchmark she admittedly applied.

[173] See, in particular, Dr. Wooldridge's statement at the meeting with experts, Transcript, para. 122: "It is impossible to avoid subjectivity in a qualitative risk assessment". She, nevertheless, agrees that a risk assessment may be either quantitative or qualitative (Transcript, para. 42).

[174] Article 5.1.

[175] Article 5.2.

[176] Article 2.2.

[177] The Appellate Body's reference to risk assessment as "a process characterized by systematic, disciplined and objective enquiry and analysis, that is, a mode of studying and sorting facts and opinions" in its report on *EC – Measures Affecting Meat and Meat Products (Hormones)* (adopted 13 February 1998, WT/DS26/AB/R, para. 187, hereafter "*EC – Hormones*") also supports the view that the evaluation of likelihood needs to achieve a certain level of objectivity.

(emphasis added).[178] This, as well, supports the view that the evaluation of likelihood needs to achieve a certain level of objectivity.

7.51 With this in mind, we hold the view that the level of objectivity to be achieved in a risk assessment must be such that one can have reasonable confidence in the evaluation made, in particular in the levels of risk assigned.

7.52 Applying this standard to the 1999 IRA, and after careful consideration of all the arguments and evidence submitted to us by the parties and the experts advising the Panel, we are of the view that the 1999 IRA meets the required level of objectivity.

7.53 The 1999 IRA first identifies the diseases of concern to Australia in respect of salmonids, applying certain criteria, e.g. whether the disease is infectious, exotic, OIE listed, etc. It sub-divides diseases of concern into "higher priority" and "lower priority" diseases.

7.54 For each of the 15 "higher priority" diseases of concern, it then determines the probability of the disease entering and becoming established in Australia through imports of eviscerated salmonids, making separate release and exposure assessments. For each of these diseases it also determines the expected impact or significance of disease establishment (consequence assessment). To each of these two elements, a qualitative scale is then attributed specifying, respectively, the probability of the disease becoming established (ranging from high, moderate, low, very low, extremely low to negligible) and the severity of the impact (ranging from catastrophic, high, moderate, low to negligible). This is done, again, disease-by-disease.

7.55 Following a standard risk evaluation matrix that applies in respect of all diseases, it is then determined whether, for each disease, the risk of disease establishment and its impact, related to imports of eviscerated salmonids, is acceptable in light of Australia's appropriate level of protection (ALOP). For example, a high probability of establishment with negligible consequences is tolerated, whereas a moderate risk of establishment with low consequences is not. On that basis seven of the 15 "high priority" diseases are found to represent a risk that is *not* acceptable.[179]

7.56 We note that two of the three experts we appointed – Drs. Brückner and McVicar – are of the view that the 1999 IRA does appropriately evaluate the likelihood of entry, establishment and spread of diseases into Australia. The third expert – Dr. Wooldridge – concludes the opposite on the basis of certain flaws she detected in the 1999 IRA.[180] These flaws – also referred to by Canada -- centre

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[178] OIE Code, Article 1.4.1.1, Introduction, p. 29. A similar statement can be found in the new 1999 OIE International Animal Health Code (adopted in May 1999, but not yet entered into force), Article 1.4.1.1, Introduction, p. 18. The 1999 OIE Code further states that Chapter 1.4.2 (Guidelines for Risk Assessment) "provides guidelines and principles for conducting *transparent, objective and defensible* risk analyses for international trade" (emphasis added). In respect of OIE standards, we note that Drs Brückner and McVicar, like Australia, are of the view that the 1999 IRA meets OIE standards, whereas Dr. Wooldridge concluded, like Canada, that it does not (see answers to Panel Questions 1, 2 and 35 to the experts, Dr. Wooldridge's statement at the meeting, Transcript, para. 84, and Canada's answer to Panel Question 38).

[179] One of these seven diseases is not known to occur in Canada, see para. 2.17 above.

[180] Expert answers to Panel Questions 1 and 2 and statements at the meeting with experts by Drs. Brückner, McVicar and Wooldridge, Transcript, paras. 19, 156 and 40-42 respectively. Since we are faced here with divergent scientific opinions – with a majority of two to one holding the view that the second requirement of risk assessment is met -- it may be useful to recall the following statement by the Appellate Body in *EC – Hormones*, op. cit.:

> "Article 5.1 does not require that the risk assessment must necessarily embody only the view of a majority of the relevant scientific community. … In most cases, responsible and representative governments tend to base their legislative and administrative measures on 'mainstream' scientific opinion. In other cases, equally responsible and representative governments may act in good faith on the basis of what, at a given time, may be a divergent

around the exposure assessment not taking fully into account all information available, the possibility of bias in the release assessment due to the way certain information was presented and the complexity of the qualitative terms used.[181]

7.57 Neither Canada nor the experts advising us, refers to scientific or other information that was *not* taken into account in the 1999 IRA. Moreover, whereas Canada and Dr. Wooldridge do point out certain methodological flaws and alleged inconsistencies in the 1999 IRA that – if absent – *might have led* to a lower level of assessed risk, we have not been convinced that this *would be so*, at least not to such extent that we would no longer have reasonable confidence in the levels of risk currently assigned in the 1999 IRA. In summary, we believe that the flaws identified are not so serious as to prevent us from having reasonable confidence in the evaluation made and the levels of risk assigned.[182]

7.58 Recalling that Canada bears the burden of demonstrating that the 1999 IRA does *not* fulfil the requirements of risk assessment, we thus conclude that the 1999 IRA evaluates the likelihood of disease entry, establishment or spread in accordance with the second requirement of a risk assessment.

(b) The third requirement: "The evaluation of the likelihood … according to the sanitary … measures that might be applied"

7.59 The one specific criterion that is textually referred to in paragraph 4 of Annex A for an "evaluation of the likelihood" to be consistent with the SPS Agreement is contained in the third requirement of the definition of risk assessment: the evaluation of the likelihood of entry, establishment or spread has to be made "according to the sanitary … measures that might be applied".

7.60 In the original dispute, the Appellate Body found that the 1996 Final Report does not meet this third requirement, considering, again, that "*some* evaluation of the likelihood is not enough".[183] It did so on the basis of factual findings made by the original panel[184]:

> "132. … We note that the Panel observed that the 1996 Final Report examines a large number of different risk reduction factors for each of the 24 diseases of concern, and we note that the Panel came to the following factual finding:
>
> > For most of these risk reduction factors, the 1996 Final Report provides *some* evaluation of the extent to which these factors could reduce risk. (emphasis added)
>
> 133. With regard to the quarantine policy options considered to reduce the *total* risk associated with all diseases of concern, the Panel, arrived at these factual findings:

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opinion coming from qualified and respected sources" (para. 194; see also *Japan – Varietals*, op. cit., para. 77).

[181] In this respect, we recall that Dr. Wooldridge applied the "highest standards" to the 1999 IRA. See her statement at the meeting with experts, already referred to in footnote 172 above, Transcript, para. 45: "when I assess something like a risk assessment, I work on the basis of the highest standards that I can. So I'm assessing this risk assessment trying to look at it in terms of the best quality risk assessment that I would like to see".

[182] See Dr. McVicar's statement at the meeting with experts, Transcript, para.158: "Inevitably for such a major piece of work [as the 1999 IRA], which has been produced in a very short time, there are areas which could be improved, but I have not detected problems which I believe could affect the main conclusions".

[183] Appellate Body report, op. cit., para. 134.

[184] On the basis of these factual findings the original panel continued its examination without making a finding on the issue.

> … that the 1996 Final Report does not substantively *evaluate* the relative risks associated with these different options. Even though the definition of risk assessment requires an 'evaluation ... according to the sanitary ... measures which might be applied', *the 1996 Final Report identifies such measures but does not, in any substantial way, evaluate or assess their relative effectiveness in reducing the overall disease risk.* (emphasis added)".[185]

7.61 In this case we have to examine whether the 1999 IRA meets the test which the 1996 Final Report failed. For the reasons explained below, we are of the view that it does.

7.62 Having identified the seven "higher priority" diseases in respect of which imports of eviscerated salmonids would *not* meet Australia's ALOP, the 1999 IRA next considers whether so-called risk management or risk reduction measures could be implemented to reduce the risk to a level that would meet Australia's ALOP.

7.63 The 1999 IRA first identifies available quarantine measures, both pre-export requirements applying to the country of origin and post-import measures applying in Australia. Thereafter, for each of the seven diseases found to represent a risk that is not acceptable, "Key Risk Factors" are pointed out, such as the kind of control measures in case of disease establishment, the type of salmon with the highest prevalence, most infected tissues, survival rate and risk related to waste.

7.64 Subsequently, for each disease – not only for *some* diseases as in the 1996 Final Report -- a series of "Risk Management Measures" that might be applied and that would reduce the risk associated with the particular disease are identified *and* discussed, such as control of health status through health surveillance and monitoring, restrictions as to the age of the fish, inspection and grading, processing, export certification and controls on waste disposal.

7.65 Critically -- and contrary to what was done in the 1996 Final Report -- the discussion provided in the 1999 IRA for each of the "Risk Management Measures" is made *in light of the effect these measures would have on the "Key Risk Factors" previously identified*. On the basis of these discussions – which we consider to be evaluations -- certain conclusions are made and a list of pre-export and/or post-import requirements is adopted for each specific disease in order to achieve Australia's ALOP.[186]

7.66 On the basis of this disease-by-disease assessment, the 1999 IRA concludes that importation of eviscerated salmonids from any country should be permitted subject to a series of measures – a combination of all "Risk Management Measures" identified for the seven diseases – that would have the effect of reducing the overall risk related to imports of salmonids to a level that is acceptable to Australia.[187]

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[185] Appellate Body report, op. cit., paras. 132-133.

[186] Sometimes the "Risk Management Measures" selected do not apply to certain types of salmonids, e.g. not to wild, ocean-caught Pacific salmon (measures against the disease *A. salmonicida*) or only to Atlantic salmon (measures against Infectious Salmon Anaemia or ISA), juveniles (measures against the disease *Y. Ruckeri*) or rainbow trout and juveniles (measures against whirling disease). This selective approach is, in our view, another indicator that a more detailed evaluation of risk and risk reduction factors preceded the final selection of measures in the 1999 IRA than in the 1996 Final Report.

[187] The 1999 IRA also found that as the seven diseases of concern are either not reported in New Zealand or (for whirling disease) occur at extremely low prevalence in New Zealand Pacific salmon, the selected measures would not apply to Pacific salmon from New Zealand (1999 IRA, p. 230). After this evaluation of "higher priority" diseases (so-called group 1 diseases), the 1999 IRA assessed the "lower priority" diseases (so-called group 2 diseases) to ensure that with the implementation of measures required for group 1 diseases, risks associated with the group 2 diseases would also meet Australia's ALOP. As a result of this assessment, it was found that no additional measures were required to address risk related to group 2 diseases.

7.67 We note that two of the three experts advising the Panel – Drs. Brückner and McVicar -- are of the view that the 1999 IRA evaluates the likelihood of disease entry, establishment or spread according to the sanitary measures that might be applied.[188] Dr. Wooldridge, in contrast, is "unable to find any indication that the probability of any individual (or indeed any combination) of measures has actually been assessed *specifically with regard to the likelihood of bringing the assessed risk below Australia's ALOP*" (emphasis added).[189] She does agree, however, that "[f]or each disease which does not meet the ALOP criteria, risk factors have been identified, and a list of possible risk management measures described. In addition, the particular risk factor which each measure would address is indicated".[190]

7.68 Canada's claim, as well as Dr. Wooldridge's opinion, raises the question of whether the definition of risk assessment *as such*, requiring Members to assess risk "according to the [sanitary] measures which might be applied", can be construed so as to include the obligation to make the link between the assessment, the measures *finally selected* and the necessity to use these measures in order to achieve the ALOP. We find it difficult to read such a requirement into paragraph 4 of Annex A.

7.69 In our view, the rights and obligations in respect of these linkages are set out *not* in the definition of risk assessment itself – which logically *precedes* the selection of measures -- but, *inter alia*, in the obligation to *base* sanitary measures *on* a risk assessment in Article 5.1 and to ensure that sanitary measures are not more trade-restrictive than required to achieve the ALOP in the sense of Article 5.6. To examine these questions of relationship between the risk assessment, the measures selected and the ALOP under the definition of risk assessment – as Canada and Dr. Wooldridge seem to do -- would, in our view, run the risk of adding to or diminishing the more specific rights and obligations of Members set out in other SPS obligations, contrary to Article 19.2 of the DSU.

7.70 We examine these questions of relationship between the measures at issue and the risk assessment below.[191] Even if we were to find there that some of the Australian measures in question are not *based on* the 1999 IRA on the ground, for example, that the 1999 IRA does *not* explain or assess these measures, we would not be precluded from finding here that the 1999 IRA meets the definition of risk assessment. Indeed, the fact that the 1999 IRA would not evaluate the likelihood according to *all* sanitary measures which may be applied, including some of those that were actually selected, does not, in our view, preclude that the 1999 IRA taken separately meets the definition of risk assessment. Paragraph 4 of Annex A refers to an evaluation "according to the sanitary … measures which might be applied" *tout court*. It does not require that *all possible* measures (of which there could be a very great number) be evaluated nor specify precisely which measures need to be evaluated. In any event, we prefer to address this question of relationship between the measures selected and the risk assessment under the obligation to *base* measures *on* a risk assessment pursuant to Article 5.1 rather than under the very definition of risk assessment referred to in the same provision.

7.71 For all the reasons above, after careful examination of all the arguments and evidence submitted to us by the parties and the experts advising the Panel and recalling that Canada bears the burden of demonstrating that the 1999 IRA does *not* fulfil the requirements of a risk assessment, we conclude that the 1999 IRA evaluates the likelihood of disease entry, establishment or spread "according to the sanitary … measures which might be applied" consistently with the third requirement of a risk assessment.

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[188] See their answers to Panel Questions 1, 2 and 6.
[189] Answer to Panel Question 1, para. 6.26.
[190] *Ibid.*
[191] See paras. 7.72 ff. and 7.115 ff.

2. Sanitary measures *based on* a risk assessment

7.72 Regarding the requirement in Article 5.1 that sanitary measures be *based on* a risk assessment, the Appellate Body in *EC - Hormones* stated the following:

> "We believe that Article 5.1, when contextually read as it should be, in conjunction with and as informed by Article 2.2 of the *SPS Agreement*, requires that *the results of the risk assessment must sufficiently warrant - that is to say, reasonably support -- the SPS measure at stake*. The 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*" (emphasis added).[192]

7.73 As noted earlier, whereas the definition of risk assessment *as such* does not, in our view, call for an examination of the link between the risk assessment and the sanitary measure finally selected[193], the obligation to base sanitary measures on a risk assessment requires that there be a rational *relationship* between the risk assessment and the measures selected.

7.74 Canada claims that the new measures applying to salmonids set out in AQPM 1999/51 of 19 July 1999 and AQPM 1999/69 of 20 October 1999 cannot be said to be *based on* the 1999 IRA, first of all, because the 1999 IRA was only issued in its final form on 12 November 1999, i.e, *after* the publication of the new measures.

7.75 In response to an Australian objection against considering the 1995 Draft Report on the ground that it was only a draft risk assessment not representing official government policy, we noted in the original panel report that

> "to the extent [reports] constitute relevant available scientific information which was submitted to the Panel, we consider it our task to take this evidence into account. We consider that, for purposes of our examination, the scientific and technical content of these reports and studies is relevant, not their administrative status (i.e. whether they are official government reports or not)".[194]

7.76 We hold the same view in respect of the 1999 IRA that was published in July 1999. We note that the final form of the 1999 IRA, though only edited and published in book form on 12 November 1999, is still dated July 1999 and that, according to AQPM 1999/80 – entitled "Publication of the Final Report of the Import Risk Analyses on Non-Viable Salmonids and Non-Salmonid Marine Finfish" -- and the concordance table it sets forth, the amendments made in the final 1999 IRA "do not alter the substance or the conclusions of the report as announced on 19 July".

7.77 On these grounds, we find that the fact that the 1999 IRA was only published in final form subsequent to the date the new sanitary measures were taken, does not, in this case, preclude the measures from being *based on* the 1999 IRA. All substantive elements of the risk assessment we looked at earlier were already included in the draft 1999 IRA of July 1999, i.e. *before* the new measures were taken.[195]

7.78 Canada further claims that there is no rational relationship between the 1999 IRA and the Australian requirements that salmonids may not be released from quarantine unless they are "consumer-ready". AQPM 1999/69 clarifies that under Australia's new regime

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[192] Appellate Body report on *EC – Hormones*, op. cit., para. 193.
[193] See paras. 7.67 and 7.68.
[194] Op. cit., para. 8.136.
[195] As stated in footnote 160, when we refer to the 1999 IRA in this Report we mean the July 1999 version attached as Exhibit A to Australia's first submission, not the 1999 IRA published in book form on 12 November 1999 and submitted to us only on 10 December 1999.

"consumer-ready product is product that is ready for the householder to cook/consume, including:

- cutlets – including central bone and external skin but excluding fins – of less than 450 g in weight;
- skinless fillets – excluding the belly flap and all bone except the pin bones – of any weight;
- skin-on fillets – excluding the belly flap and all bone except the pin bones – of less than 450 g in weight;
- eviscerated, headless 'pan-size' fish of less than 450 g in weight; and
- product that is processed further than the stage described above.

Salmonid product that is not in consumer-ready form (such as head-off, gilled, eviscerated fish of greater than 450 g in weight) must be processed to a consumer-ready stage at an AQIS-approved processing plant before release from quarantine".[196]

The same definition of "consumer-ready" product is also reproduced at the end of the 1999 IRA on salmonids.[197]

7.79 None of the experts advising the Panel is able to find a justification in the 1999 IRA for this requirement that salmonids be "consumer-ready" in the sense defined above before they can be released from quarantine (hereafter the "consumer-ready requirements").[198]

7.80 We note that in the disease-by-disease evaluation of "Key Risk Factors" and "Risk Management Measures" for the seven "higher priority" diseases that would not achieve Australia's ALOP, reference is made to disease agents that can be found in the viscera, head, gills, brain, skin mucus, blood and remnants of the anterior kidney on the skeleton. Each time, however, it is stated that evisceration, removal of head and gills and thorough cleaning and washing of external and internal surfaces to remove skin mucus and visceral remnants, respectively, would significantly reduce risk. At the end of each disease-specific assessment -- in the series of "Risk Management Measures" proposed in addition to evisceration against the specific disease -- the removal of head and gills and thorough washing of external and/or internal surfaces (among other measures) is, therefore, suggested.

7.81 In five of the seven disease-specific assessments reference is made also to the risk related to *commercial processing* of imported salmonids in Australia. This risk is stated to be associated mainly, if not exclusively, with waste disposal of the salmon parts just mentioned. Even though the "Risk Management Measures" referred to in the previous paragraph (removal of head and gills and thorough washing) would seem to effectively exclude the importation of those parts of the salmonid, two additional "Risk Management Measures" are proposed in five of the seven disease-specific assessments in order to address the risk related to commercial processing and waste disposal of these salmonid parts: first, to permit only approved premises – subject to controls on waste disposal -- to commercially process imported salmonids in Australia; and, second, to permit release from quarantine of only what is referred to as "consumer-ready product", i.e. product that is not likely to be further commercially processed. No explanation is provided as to why these additional requirements are needed in light of the fact that most, if not all, of the salmon parts of concern in respect of commercial processing already have to be removed under other "Risk Management Measures"; nor is

[196] AQPM 1999/69, Attachment 1, pp. 1-2.
[197] 1999 IRA, pp. 230-231.
[198] Expert Answers to Panel Questions 7, 8 and 17 and statements by Drs. Brückner, McVicar and Wooldridge at the meeting with experts, Transcript, paras. 21, 140 and 137 respectively. We will address the explanation given by Australia in its submissions before this Panel -- an explanation not to be found in the 1999 IRA -- when we examine Canada's claims under Article 5.6. For present purposes, the relationship we have to examine is that between the consumer-ready requirement and the 1999 IRA.

it explained, in any of the disease-specific assessments, what should be considered as "consumer-ready product", on what basis and for what reasons.

7.82 Only in the overall conclusion on the totality of measures to be imposed on salmonid imports is the definition of "consumer-ready product", as quoted above, provided. This definition refers, for the first time in the 1999 IRA, to criteria such as removal of certain bones, fins, belly flap and external skin for product of more than 450 g in weight. Nowhere in the 1999 IRA could we find further reference, explanation or assessment of any of these criteria.[199] In particular, nowhere in the 1999 IRA could we find the *rationale* for the 450 g weight limitation for skin-on salmon.

7.83 On these grounds, we find that there is no rational relationship between, on the one hand, the consumer-ready requirements and, on the other hand, the 1999 IRA. Since the 1999 IRA is the only risk assessment referred to by Australia in support of its new measures, we thus find that the consumer-ready requirements are not *based on* a risk assessment, contrary to Article 5.1.

3. The Panel's conclusion under Article 5.1

7.84 On the basis of our considerations and findings above, we conclude that:

(1) the 1999 IRA meets the three requirements of a risk assessment in the sense of Article 5.1 and paragraph 4 of Annex A;

(2) the fact that the 1999 IRA was only published in final form subsequent to the date the new sanitary measures were taken does not, in this case, preclude the measures from being *based on* the 1999 IRA; and

(3) AQPM 1999/51 and 1999/69 -- to the extent they set forth the consumer-ready requirements specified above -- are not *based on* a risk assessment, contrary to Article 5.1.

7.85 Moreover, by maintaining sanitary measures, *in casu* the consumer-ready requirements, in violation of the specific requirement to base such measures on a risk assessment set forth in Article 5.1, we find that Australia has, by implication, also acted inconsistently with its more general obligation in Article 2.2 to "ensure that any sanitary … 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".

E. ARBITRARY OR UNJUSTIFIABLE DISTINCTIONS IN APPROPRIATE LEVELS OF PROTECTION IN THE SENSE OF ARTICLE 5.5 OF THE SPS AGREEMENT

7.86 We next examine Canada's claim under Article 5.5. In the original panel report we stated[200], and the Appellate Body agreed[201], that

> "three elements are required in order for a Member to act inconsistently with Article 5.5:
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> - the Member concerned adopts different appropriate levels of sanitary protection in several 'different situations';

[199] We refer, in addition, to our examination below under Article 5.6 (paras. 7.115 ff.) of the explanation given by Australia in its submissions before this Panel – an explanation not to be found in the 1999 IRA – that would justify the consumer-ready requirements and our conclusion there that these requirements are more trade-restrictive than required to achieve Australia's ALOP, contrary to Article 5.6.

[200] Op. cit., para. 8.108.

[201] Op. cit., para. 140.

- those levels of protection exhibit differences which are 'arbitrary or unjustifiable'; and

- the measure embodying those differences results in 'discrimination or a disguised restriction on international trade' ".

7.87 Canada makes two general comparisons under Article 5.5: firstly, Australia's treatment of imported, dead salmonids as compared to Australia's treatment of imported, dead non-salmonids and live ornamental fish; secondly, Australia's treatment of imported, dead salmonids as compared to its treatment of dead domestic fish, both salmonids and non-salmonids.

7.88 We recall that Canada bears the burden of demonstrating that the comparisons it refers to meet all three elements under Article 5.5.

1. The first element of Article 5.5

7.89 For the reasons set out in the Panel and Appellate Body reports in the original dispute, we confirm that we can compare the different fish categories referred to by Canada as "different situations" in the sense of the first element of Article 5.5.[202] Australia does not contest this. It is not contested, more particularly, that the situations referred to by Canada under Article 5.5 – i.e. fresh chilled or frozen salmon from Canada, on the one hand, and imports of non-salmonids, live ornamental fish and dead Australian fish, on the other hand – involve a risk of entry, establishment or spread of the same or a similar disease, *or* a risk of the same or similar associated potential biological and economic consequences. As a result, these situations have some common elements sufficient to render them comparable under Article 5.5. Whether or not Australia adopts different ALOP's in respect of these "different situations" is an issue we address under the second element of Article 5.5.

2. The second element of Article 5.5

7.90 In respect of the second element of Article 5.5 – arbitrary or unjustifiable distinctions in ALOP's -- we note that the arguments and evidence submitted by Canada remain general with the exception of one specific comparison, imports of salmonids compared to imports of pilchards, to which we revert later. Canada compares imports of salmonids at issue here to entire categories of fish – imports of non-salmonids, live ornamental fish and dead Australian fish – that include not only a wide variety of different fish but also of different diseases. Canada basically refers to the difference in *measures* Australia applies to these different categories of fish and, on that ground, requires *Australia* to justify the differential treatment. Whereas this approach may have been appropriate in the original dispute -- where certain rather substantial differences in treatment existed without apparent justification -- the circumstances in this case have changed.

7.91 We recall that as a result of DSB recommendations and rulings in the original dispute, Australia now has a risk assessment not only on salmonids but also on non-salmonids and live ornamental fish in support of the new measures it imposes.[203] On that basis, Australia not only imposed a less trade restrictive import regime in respect of salmonids at issue here, but also tightened, or will tighten, the import restrictions for non-salmonids, including in particular herring for use as bait[204] and live ornamental finfish[205] referred to in the original dispute.

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[202] Panel report, paras. 8.115-8.122, confirmed in the Appellate Body report, paras. 143-153.

[203] With this reference to Australian risk assessments other than the one for salmonids we do not in any way decide the question of whether or not these latter risk assessments are consistent with the SPS Agreement or whether these risk assessments justify the measures finally selected for these categories of fish other than salmon, in terms of Australia's obligations under the SPS Agreement. These questions fall outside our mandate.

[204] See AQPM 1999/79 which identifies herring (*Culpea ssp.*) as a "specified finfish species" that will not generally be permitted for importation unless in consumer-ready form (under Part A) or eviscerated, head-off in a consignment accompanied by an official health certificate (under Part C) or head-off, gilled and gutted,

7.92 Two of the three experts advising the Panel are of the view that Australia's treatment of, on the one hand, imports of salmonids and, on the other hand, imports of non-salmonids and live ornamental finfish, achieves the same or similar levels of protection. They also consider that the differential treatment accorded by Australia to these different categories of fish is scientifically justified.[206]

7.93 Even though no stricter controls have been imposed on the internal movement of dead Australian fish as a result of the adoption of DSB recommendations, we note Australia's explanation that the risk related to the internal movement of Australian fish is different, and of a lesser magnitude, than that related to imports of salmonids. For one thing, the diseases associated with the movement of fish within Australia are *per force* already present (i.e. endemic) in Australia. Even if certain diseases are only present in some parts of Australia, the presence of internal waterways may make it difficult to contain these diseases. Since the diseases of concern in respect of imports of salmonids are, in contrast, *not* present in (i.e. exotic to) Australia, they are *per definition* different from those associated with Australian fish and may be – and, according to Australia, are – of more concern both in terms of risk of introduction of the disease and its potential impact.[207]

7.94 Referring thus to: (1) the generality of Canada's arguments and evidence; (2) the increased convergence in the treatment provided by Australia to the different categories of fish referred to by Canada; and (3) the apparent justification for this differential treatment put forward by Australia, we find that – with the exception further examined below -- Canada has not met its burden of demonstrating that in this case the second element under Article 5.5 is met.

7.95 The only comparison referred to by Canada that, we believe, warrants further examination is that between imports of salmonids at issue here and imports of whole, uneviscerated pilchards for use as bait or fish feed. There, Canada did refer to a specific fish species and specific diseases of concern, and further substantiated its claim.

7.96 Two of the three experts advising the Panel are of the view that the differential treatment accorded by Australia to salmonid imports as opposed to imports of pilchards is scientifically justified.[208]

7.97 Canada is correct when it points out that the import restrictions applied to salmonids for human consumption are stricter than those applied to pilchards for use as bait or fish feed[209] even though, in general terms, one would expect that more risk arises from imports of whole fish introduced directly into waterways as bait or fish feed, than from eviscerated salmonids for human consumption. However, when focusing on the specific risks related to pilchard imports, it becomes

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further processed or intended for further processing at designated premises in Australia prior to distribution (under Part D).

[205] See AQPM 1999/77.

[206] See answers by Drs. Brückner and, in particular, McVicar to Panel Questions 10, 11 and 15. Dr. Wooldridge, acknowledging that she is not a fish disease expert, states (answering Panel Question 10) that "[t]here might be genuine differences in the overall risk of disease establishment associated with different fish species (requiring different safeguards) even when exposure pathways were the same". However, answering Panel Question 15, she is of the view that, in this case, "the need for different (or any specific) measures is far from clear" (para. 6.108).

[207] For evidence in support, see Dr. McVicar's answer to Panel Question 22. Dr. McVicar was the only one of the three experts that advised the Panel on the issue of internal *versus* border control against diseases.

[208] See answers by Drs. Brückner and McVicar to Panel Questions 18 and 19 and their statements at the meeting with the experts, Transcript, paras. 59 and 56 and 95 respectively. Dr. Wooldridge, in contrast, in her answer to Panel Question 18 was of the view that Canada's submission did "indicate a substantial difference in levels of sanitary protection for the two products under consideration, for which scientific justification was not immediately apparent". At the meeting with experts she further clarified that she was not saying that there *was no* scientific justification, but that she had not been convinced that there was (Transcript, para. 83).

[209] See APQM 1999/79, Part D, non-specified finfish species.

apparent that as compared to the 15 "higher priority" diseases identified in the 1999 IRA for salmonids, only two diseases are, according to Canada, associated with pilchards: herpes virus and *Viral Haemorrhagic Septicaemia Virus* (VHSV).

7.98 Herpes virus is *not* a disease associated with salmonids. Moreover, it is, according to Australia, already present in (i.e. *endemic* to) all marine waters of Australia where pilchards are found and unique to Australian and New Zealand marine waters.[210]

7.99 VHSV, on the other hand, is associated with pilchards *and* salmonids and is one of the 15 "higher priority" diseases identified in the 1999 IRA. It is not one of the seven diseases, though, that, according to the 1999 IRA, requires measures additional to evisceration for Australia's ALOP in respect of salmonids to be met. Australia submits that since VHSV is associated with colder water temperatures and Australia normally sources its Pacific pilchards from warmer southern waters where VHSV is not reported, less risk of VHSV is associated with pilchards than with salmonids.[211] Australia further points out that there is no evidence of transmission of VHSV from pilchards to salmonids. We note also that the 1999 IRA considers the consequences of the establishment of marine European strains of VHSV and all strains of VHSV from North America to be "low" due primarily to the limited impact that these strains of VHSV would have on salmonids and other finfish species in Australia.[212]

7.100 We note, in addition, that some import restrictions do apply also for imports of pilchards. They can only be imported with an import permit and a health certificate, even though the conditions linked thereto are more lenient than those in respect of salmonid imports.

7.101 For the reasons stated above and after careful consideration of all arguments and evidence submitted to us by the parties and the experts advising the Panel, we find that Canada has not convinced us that the differential treatment accorded by Australia to salmonids and pilchards -- and any difference in ALOP that may result therefrom -- is "arbitrary or unjustifiable" in the sense of the second element of Article 5.5.

3. The third element of Article 5.5

7.102 Even though we found earlier that the second element of Article 5.5 is *not* met -- and given the cumulative nature of Article 5.5 no violation of Article 5.5 can thus be found -- in order to complete the analysis of Article 5.5 we turn now to the third element of Article 5.5. Before a violation of Article 5.5 arises, any arbitrary or unjustifiable distinction in ALOP needs to result in "discrimination or a disguised restriction on international trade".

7.103 In this respect, we note that all but one of the three "warning signals" and both "additional factors" retained by the Appellate Body in the original dispute that led to its finding that the third element of Article 5.5 was met, are no longer present or at least of less importance here. We have not been convinced in this case that Australia maintains "arbitrary or unjustifiable" distinctions in ALOP's – the first warning signal in the original case -- nor *a priori* that any such distinctions were "rather substantial" – the second warning signal in the original case.

7.104 Also the first "additional factor" – the substantial, but unexplained change in conclusion between the 1995 Draft Report (recommending to allow importation under certain conditions) and the

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[210] The question remains, however, whether it has been introduced locally or through imports. In this respect, see also the parties' answers to Panel Question 29 and Dr. McVicar's statement at the meeting with experts, Transcript, para. 56.

[211] Australia's rebuttal submission, para. 84. That VHSV is associated with colder water temperatures is also referred to in the 1999 IRA, at pp. 133-134. We did not receive documentary evidence in support of Australia's contention that it normally sources its Pacific pilchards from warmer waters where VHSV is not reported. Canada does not, however, contest this contention.

[212] 1999 IRA, p. 137.

1996 Final Report (recommending to continue the import prohibition) - has lost most of its weight here. The difference between the 1995 Draft Report and the 1999 IRA - both allowing importation under certain, albeit sometimes different, conditions -- is no longer that substantial nor completely unexplained.[213] Finally, also the second "additional factor" - the absence of controls on the internal movement of salmon products within Australia compared to the treatment given to imports of salmon - has lost most of the little weight it was assigned by the Appellate Body.[214] This is so because: (1) the import prohibition on salmonids is now replaced by a regime where imports are allowed under certain conditions; and (2) of our finding above that the differential treatment between the internal movement of salmon and imports of salmon does not appear to be arbitrary or unjustifiable.[215]

7.105 Accordingly, only the third "warning signal" referred to by the panel and the Appellate Body in the original case is maintained, namely the fact that some of the measures at issue here are also not based on a risk assessment, in breach of Articles 5.1 and 2.2 of the SPS Agreement. We believe, however, that these violations of Articles 5.1 and 2.2, in and of themselves, are not sufficient for us to find that the third element under *another* provision, Article 5.5, is met.

7.106 We note, finally, that Australia submits some positive evidence that indicates that its new regime on imports of salmonids does *not* result in discrimination or a disguised restriction on international trade inspired to avoid import competition, but is rather a quarantine measure to protect Australia against diseases. Salmon from New Zealand is generally considered to be amongst the most competitive in the Australian market. Nevertheless, given the low disease status of New Zealand that is similar to that of Australia, imports of salmonids from New Zealand are subject to less restrictions than any other salmonid imports. We realize that, as Canada argues, there may also be other reasons that explain the greater access offered to New Zealand salmon.[216] However, without ruling on the relevance of these other reasons, New Zealand's low disease status -- in this case prevailing over the competitiveness of New Zealand salmon -- seems to us, on the basis of the evidence on record, to be crucial.

7.107 For the reasons stated above we find that Canada has not met its burden of demonstrating that in this case the third element of Article 5.5. is met.

4. The Panel's conclusion under Article 5.5

7.108 On the basis of our findings above, we conclude that Canada has not met its burden of demonstrating that either the second or the third element of Article 5.5 are present. We thus find that Australia has not acted inconsistently with Article 5.5.

F. DISCRIMINATION IN THE SENSE OF ARTICLE 2.3, FIRST SENTENCE, OF THE SPS AGREEMENT

7.109 Canada claims that Australia's import requirements for salmonids from Canada, on the one hand, and the absence of internal control measures imposed on the internal movement of dead, Australian fish, on the other hand, constitute discrimination between Canada and Australia in the sense of Article 2.3, first sentence.

7.110 The first sentence of Article 2.3 provides:

> "Members shall ensure that their sanitary … measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail, including between their own territory and that of other Members".

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[213] See, however, our findings of violation under Articles 5.1 and 5.6.
[214] Appellate Body report, op. cit., para. 177.
[215] See paras. 7.92-7.93.
[216] Canada submits, for example, that the Australian salmon industry is interested in exporting whole salmon to New Zealand and that New Zealand may consider it a *quid pro quo* that its salmon be permitted into Australia in the same form.

7.111 In our view, three elements, cumulative in nature, are required for a violation of this provision:

(1) the measure discriminates between the territories of Members other than the Member imposing the measure, or between the territory of the Member imposing the measure and that of another Member;

(2) the discrimination is arbitrary or unjustifiable; and

(3) identical or similar conditions prevail in the territory of the Members compared.

7.112 In respect of the first element we only note the following. Given: (1) the Panel and Appellate Body finding[217] in the original dispute that discrimination contrary to Article 5.5 by implication entails discrimination contrary to Article 2.3, first sentence; and (2) that under Article 5.5 different situations including *different* products can be compared[218], we are of the view that – contrary to what Australia argues -- discrimination in the sense of Article 2.3, first sentence, may also include discrimination between *different* products, e.g. not only discrimination between Canadian salmon and New Zealand salmon, or Canadian salmon and Australian salmon; but also discrimination between Canadian salmon and Australian fish including non-salmonids, as referred to by Canada in this case.

7.113 However, on the basis of our examination above of the differential treatment accorded by Australia to imports of salmonids and dead fish moving within Australian borders – where we found that Canada had not convinced us that this differential treatment resulted in arbitrary or unjustifiable distinctions in ALOP's[219] – we find that Canada has not met its burden of demonstrating that any discrimination made by Australia between these two categories of fish is "arbitrary or unjustifiable" in the sense of the second element of Article 2.3, first sentence. For the reasons mentioned there, we also harbour doubts as to whether "identical or similar conditions" in the sense of the third element of Article 2.3, first sentence, prevail in the territories of both Canada and Australia in respect of the situations compared. We note, for example, the substantial difference in disease status between Canada and Australia.

7.114 We thus find that Australia has not acted inconsistently with Article 2.3, first sentence.

G. SANITARY MEASURES SHALL NOT BE "MORE TRADE-RESTRICTIVE THAN REQUIRED" IN THE SENSE OF ARTICLE 5.6 OF THE SPS AGREEMENT

7.115 We next examine Canada's claim that there are other, less trade-restrictive measures available that meet all three elements of Article 5.6. As we found in the original dispute[220], a sanitary measure is "more trade-restrictive than required", contrary to Article 5.6, if there is another measure which:

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

(2) "achieves [Australia's] appropriate level of sanitary ... protection"; and

(3) is "significantly less restrictive to trade" than the sanitary measure contested.

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[217] Panel report, op. cit., paras. 8.109 and 8.160 and Appellate Body report, op. cit., paras. 178 and 252.

[218] As long as they have a risk of entry, establishment or spread of the same or a similar disease, *or* a risk of the same or similar associated potential biological and economic in common, *different* products can be compared under Article 5.5. See para. 7.89 above.

[219] See paras. 7.92-7.93 and 7.103.

[220] Panel report, op. cit., para. 8.167 and Appellate Body report, op. cit., para. 179.

7.116 The three elements of Article 5.6 are cumulative in nature and it is for Canada to demonstrate that they are met in this case.

7.117 Referring to the Appellate Body report on *Japan – Varietals*, it is for Canada "to establish a *prima facie* case that there is an alternative measure that meets all three elements under Article 5.6 in order to establish a *prima facie* case of inconsistency with Article 5.6".[221] Pursuant to the same report, a panel is "entitled to seek information and advice from experts and from any other relevant source it chooses … to help understand and evaluate the evidence submitted and the arguments made by the parties, but not to make the case for a complaining party".[222]

7.118 In its reports on *Canada – Aircraft*[223] and *India – Quantitative Restrictions*[224], the Appellate Body specified, however, that a panel is *not* precluded from considering expert advice or evidence submitted by the defending party until the complaining party has established a *prima facie* case. As noted in *Canada – Aircraft*, "[a] panel may, in fact, need the information sought in order to evaluate evidence already before it in the course of determining whether the claiming or the responding Member, as the case may be, has established a *prima facie* case or defence".[225]

7.119 In this case, Canada has referred to a number of options that, in its view, would meet the three elements under Article 5.6.

7.120 First, Canada argues that any one or several of the measures now applied might suffice. Canada refers to options such as evisceration, inspection and grading or restriction of imports to non-spawning, adult salmonids.[226] Canada submits, in particular, that evisceration, thorough washing both inside and outside to remove residual tissues and mucus on the skin, thorough bleeding of the salmon and removal of the gills combined with inspection and grading – according to Canada, the selection and primary processing undertaken by Canada in the ordinary course of processing salmon for human consumption -- would be an option fulfilling the three elements of Article 5.6.[227]

7.121 Second, Canada argues that the measures recommended in the 1995 Draft Report, allowing the importation of salmon under less stringent conditions than the current ones -- e.g. not prohibiting the importation of whole fish with the viscera, head, fins and tail removed nor prohibiting the importation of skin-on fillets and steaks of 450 grams or more -- would fulfil the three elements of Article 5.6.[228]

7.122 Third, Canada refers to the measures Australia applies domestically in respect of the internal movement of Australian fish (i.e. no restrictions at all unless for live fish), arguing that these measures would be valid options under Article 5.6.[229]

7.123 Fourth, Canada argues that, instead of imposing the current consumer-ready requirements, it would be significantly less trade restrictive and technically and economically feasible to ensure that imported salmon product imported in any form for further processing is only processed in facilities

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[221] Op. cit., para. 126.
[222] *Ibid.*, para. 129.
[223] Appellate Body Report on *Canada – Measures Affecting the Export of Civilian Aircraft*, adopted 20 August 1999, WT/DS70/AB/R, paras. 192-194.
[224] Appellate Body Report on *India – Quantitative Restrictions on Imports of Agricultural, Textile and Industrial* Products, adopted 22 September 1999, paras. 149-151.
[225] Op. cit., para. 192.
[226] Canada's first submission, para. 124.
[227] Canada's oral statement, paras. 78-81 and Canada's Comments on Australia's Response to the Panel's Question Regarding Paragraph 82 of Canada's Oral Statement, para. 19.
[228] Canada's first submission, paras. 126-128.
[229] Canada's first submission, paras. 129-132.

that do not discharge untreated waste.[230] In this respect, Canada considers that New Zealand's packaging requirements – allowing imports without an import permit for salmon packaged for retail sale or sale to the hotel, restaurant or institutional (HRI) trade including whole, eviscerated salmon of any size if individually wrapped -- although still more trade-restrictive than required, would nevertheless be significantly less trade restrictive than Australia's current measures.[231]

7.124 Considering the arguments and evidence submitted by Canada under all four options, in particular the fourth one relating to the need for consumer-ready requirements, in light of the expert advice we received, we find that Canada has established a *prima facie* case that there are other measures that meet all three elements of Article 5.6.

7.125 Given our finding above that Australia's new measures are, indeed, based on a risk assessment (the 1999 IRA) except for the consumer-ready requirements, we shall focus our examination on the fourth option Canada puts forward. More specifically, we shall examine whether the option of not imposing the consumer-ready requirements or imposing a different definition of "consumer-ready product", would meet the three elements of Article 5.6.

7.126 We recall that Australia does not allow the release from quarantine of product that is not "consumer-ready" and that this type of product is defined as follows:

> "consumer-ready product is product that is ready for the householder to cook/consume, including:
>
> - cutlets – including central bone and external skin but excluding fins – of less than 450 g in weight;
> - skinless fillets – excluding the belly flap and all bone except the pin bones – of any weight;
> - skin-on fillets – excluding the belly flap and all bone except the pin bones – of less than 450 g in weight;
> - eviscerated, headless 'pan-size' fish of less than 450 g in weight; and
> - product that is processed further than the stage described above.
>
> Salmonid product that is not in consumer-ready form (such as head-off, gilled, eviscerated fish of greater than 450 g in weight) must be processed to a consumer-ready stage at an AQIS-approved processing plant before release from quarantine".[232]

7.127 We next examine the three elements of Article 5.6, starting with the most controversial one, namely the question of whether any other measures would meet Australia's ALOP.

1. Is there another measure that "achieves [Australia's] appropriate level of sanitary ... protection"?

7.128 We note that our examination of whether there are other measures that achieve Australia's ALOP in the sense of Article 5.6 is hampered in two respects.

7.129 First, although, according to the Appellate Body[233], Australia determined its ALOP with sufficient precision to apply Article 5.6, we find it rather difficult to evaluate whether any of the options before us would also meet Australia's somewhat vaguely determined level of "a high or very

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[230] Canada's oral statement, paras. 82-83 and Canada's Comments on Australia's Response to the Panel's Question Regarding Paragraph 82 of Canada's Oral Statement, para. 20.

[231] Canada's answer to Panel Question 1.

[232] AQPM 1999/69, Attachment 1, pp. 1-2.

[233] Op. cit., para. 207.

conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach".[234] We are of the view, however, that this should not prevent us from carrying out the task. As noted by the Appellate Body, "[o]therwise, a Member's failure to comply with the implicit obligation to determine its appropriate level of protection – with sufficient precision – would allow it to escape its obligations under this Agreement and, in particular, its obligations under Articles 5.5 and 5.6".[235] We note, parenthetically, that a more explicit and in particular a quantitative expression of a Member's ALOP would greatly facilitate the consideration of compliance with not only Article 5.6 but with other provisions of the SPS Agreement as well.

7.130 Second, we recall that the 1999 IRA only provides the definition of "consumer-ready product", as quoted above, in the overall conclusion on the totality of measures to be imposed on salmonid imports. As noted earlier, this definition refers, for the first time in the 1999 IRA, to criteria such as removal of certain bones, fins, belly flap and external skin for product of more than 450 g in weight. However, the 1999 IRA does not indicate the *rationale* for these criteria nor does it explain or assess these criteria. We note that, in addition, the 1999 IRA does not identify or assess any other possible definitions of "consumer-ready product".

7.131 On the one hand, this lack of assessment and evidence in the 1999 IRA indicates that the consumer-ready requirements may be without scientific or other objective justification and may actually not further reduce risk. On the other hand, this lack of assessment and evidence also means that the 1999 IRA is not particularly helpful in arriving at a decision as to whether other definitions of "consumer-ready product" would meet Australia's ALOP. Nevertheless, on the basis of other factual elements provided to us by the parties and the experts advising the Panel, we have been able to complete our examination under Article 5.6 in accordance with the objectivity standard set out in Article 11 of the DSU.

(a) No consumer-ready requirements

7.132 We examine, first, whether the current regime *without any* consumer-ready requirements would also achieve Australia's ALOP of "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach".

7.133 According to Australia, the primary reason for imposing the consumer-ready requirements is "the pest/disease risk presented by the creation of *substantial concentrations* of waste material (skin, fins, flaps, bones, etc) from *commercial processing* of imported salmon".[236] Answering Panel Question 20, Australia further explains the imposition of the consumer-ready requirements as follows:

> "To control risk associated with commercial processing, AQIS applies controls over commercial plants processing imported salmonid products with regard to location, waste disposal and related matters. *To ensure that imported salmonids were not commercially processed in non-approved premises*, only consumer-ready product will be permitted to be released from quarantine" (emphasis added).

7.134 We note that -- as Canada submits under the first option referred to above[237] -- evisceration, thorough washing both inside and outside to remove residual tissues and mucus on the skin, thorough bleeding of the salmon and removal of the gills combined with inspection and grading – without the additional consumer-ready requirements -- would already significantly reduce risk. As mentioned earlier, the 1999 IRA itself refers only to disease agents to be found in the viscera, head, gills, brain, skin mucus, blood and remnants of the anterior kidney on the skeleton. Indeed, for each disease, the

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[234] Australia's first submission, para. 147, referring to AQPM 1999/26.
[235] Op. cit., para. 207.
[236] Australia's response to Panel Questions at the oral hearing (second emphasis added). See also para. 7.80 above.
[237] See para. 7.119.

1999 IRA itself states that evisceration, removal of head and gills and thorough cleaning and washing of external and internal surfaces to remove skin mucus and visceral remnants, respectively, would significantly reduce risk.

7.135 We further recall that none of the experts advising the Panel is able to find a justification in the 1999 IRA for these consumer-ready requirements.[238]

7.136 In respect of the specific requirement that skin-on product over 450 g may not be released from quarantine because of the risk associated with significant quantities of waste products, *in casu*, salmon skin, that may result from further *commercial processing* of such product, we note the following statement by Dr. McVicar:

> "Washing of carcasses is a requirement to decrease surface levels of infection in product, and this will undoubtably remove much of the [skin] mucus with associated infection. However, the extent to which this reduction is achieved under normal factory conditions has not been quantified. As salmonid skin is not a blood rich organ and its actual tissues are not recognised as a significant site of infection of the diseases of concern to Australia, it is unlikely that salmonid skin or washed skin surfaces are important areas of infection risk in gutted carcasses.
> …
> It is my view, based on current knowledge on the diseases of concern to Australia, that the removal of skin from Canadian salmon is unlikely to make a significant contribution to risk reduction".[239]

7.137 There is thus evidence before us that salmon product certified and processed in a way that meets all Australian requirements other than the consumer-ready requirements may not represent risk, or only a negligible degree of risk, *even if such product is commercially processed in Australia*. As a result, it may be that *not* imposing consumer-ready requirements at all would also meet Australia's ALOP of "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach". Although we take no final position on this specific question, we do consider that the evidence referred to above is crucial for our finding below that there are other measures that would meet Australia's ALOP.

(b) Different consumer-ready requirements

7.138 Assuming, therefore, that -- contrary to the evidence referred to above -- commercial processing of salmonid imports *does* represent a risk exceeding Australia's ALOP and that such risk would be appropriately reduced by only releasing "consumer-ready product" from quarantine, we need to examine next whether any of the other approaches or definitions of "consumer-ready product" referred to by Canada would achieve the same objective as the current regime does.

7.139 In other words, we examine, secondly, whether the current regime with *different* consumer-ready requirements than those imposed now, would also achieve Australia's ALOP of "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero-risk approach".

7.140 We note that this examination does not involve the weighing of scientific evidence in the narrow sense. What we are basically examining here is whether there would be other ways to identify product that is most likely to be directly sold to consumers without further commercial processing.[240]

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[238] See para. 7.79 and footnote 198 thereto.

[239] Dr. McVicar's answer to Panel Question 7. See also his statement at the meeting with experts, Transcript, paras. 115-116.

[240] As Australia acknowledges, the definition of "consumer-ready product" in this context, is a "commercial matter" (Transcript of the meeting with experts, para. 147).

To release from quarantine only skin-on product weighing *less than 450 g*, as Australia now does, may be one way of ensuring that no further commercial processing of imports takes place. However, after careful examination of all evidence and arguments on record in respect of consumption patterns of salmon, we consider that there are other, less trade restrictive, measures available to achieve the same objective.

7.141 We have, indeed, been convinced that also a significant share of skin-on product weighing *more than 450 g* is likely to be directly consumed – without further commercial processing -- by households and, in particular, the hotel, restaurant and institutional sector.[241] We realize, at the same time, that another share of such product may be commercially processed. We are of the view, however, that there are ways to keep out that share or, at least, to ensure that it be commercially processed in a controlled manner.

7.142 First, as Canada pointed out by reference to current New Zealand requirements under the fourth option outlined above[242], instead of imposing weight limitations, Australia could restrict release from quarantine to salmon product that has been individually and commercially packaged in a way that makes it unattractive for commercial processors to further process the product. In our view, it is, indeed, very unlikely that commercial processors will prefer to buy individually and commercially packaged salmon, unwrap the package and process it, instead of, for example, importing salmon in bulk form and further process it following restrictions on waste disposal.

7.143 Second, Australia could condition the issuance of an import permit on the specific end-use of the salmon product. For example, only if proof is given that the product will be imported for retail sale, not for further commercial processing, could an import permit be issued and product be released from quarantine. In contrast, if product is to be imported for further processing, the current Australian requirement that such further processing take places in certified facilities before release from quarantine, could apply. As noted by Canada under the fourth option set out above[243], Australia could ensure more generally that salmon product imported *in any form* for further processing is only processed in facilities that do not discharge untreated waste.[244]

7.144 We referred above to several options without deciding that one of these would necessarily meet Australia's ALOP. We have been convinced, however, that there are other measures available, be it the options discussed above taken separately or a combination thereof, that would meet Australia's ALOP. We leave it up to Australia, preferably in close cooperation with Canada and other trading partners, to select and identify the details of such other measure(s).

7.145 For all the reasons stated above, we thus find that the first element of Article 5.6 is met.

2. Is there another measure that is "reasonably available taking into account technical and economic feasibility"?

7.146 We agree with Canada that since one can assume that current Australian requirements are "reasonably available taking into account technical and economic feasibility", also a regime *without* the consumer-ready requirements – as referred to in paragraphs 7.134-7.137 above -- would be so.

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[241] As noted in the ABARE Report in Progress on Salmon Imports into Australia: Potential Market Penetration, p. 8: "Around half of farmed salmon production is sold as whole fresh fish which are gutted and gilled. The remainder is sold as a range of value added products such as smoked salmon and bulk packs of fillets and steaks". Dr. McVicar, at the meeting with experts, also stated that most trade occur in whole fish, not pieces of fish (Transcript, para. 65).

[242] See para. 7.122.

[243] *Ibid.*

[244] Doing so could arguably achieve an even higher ALOP than the current measures do since under the current regime it is possible, at least in theory, that product meeting Australia's consumer-ready requirements is, nevertheless, commercially processed in Australia without the restrictions on waste control applying, given that these restrictions only apply to non-consumer-ready product.

Given that inspection and control to release from quarantine only product that meets the consumer-ready requirements would no longer be necessary, a regime without the consumer-ready requirements would be even more reasonably available in the sense of Article 5.6.

7.147 We also consider that to require individual and commercial packaging before release from quarantine -- as referred to above under *different* consumer-ready requirements[245] -- would be reasonably available in the sense of Article 5.6. The fact that New Zealand imposes similar requirements is evidence in support thereof.

7.148 To condition import permits and release from quarantine on the end-use of the product[246] could raise a problem of control, i.e. how to ensure that the product once released form quarantine is actually used as specified in the import permit. We note that the current requirement of only releasing product that has been processed in certified facilities may give rise to similar concerns, i.e. how to ensure that the product is not diverted and processed in other, non-certified facilities. In addition, to condition import permits or health certificates on origin, as Australia does, may not be that different in terms of control from conditioning it on end-use. In any event, to avoid the imposition of costly and technically difficult control measures to fully ensure appropriate end-use, this alternative could be combined with other measures that, in combination, would meet Australia's ALOP.

7.149 For the reasons stated above, we thus find that the second element of Article 5.6 is met. In this respect paragraph 7.143 applies *mutatis mutandis*.

3. Is there another measure that is "significantly less restrictive to trade"?

7.150 We note, first, that all options referred to above would result in significantly more salmon product being allowed for direct release from quarantine, e.g. also skin-on salmon *weighing more than 450 g* that is individually and commercially packaged and/or stated in the import permit to be imported for direct retail sale. Secondly, on the basis of arguments and evidence on record, we consider that there is an Australian demand for such product, in particular skin-on salmon weighing more than 450 g for use in the hotel, restaurant and institutional sector.[247] We consider also that households, in particular families of three or more, may prefer to buy one larger piece or whole salmon instead of individual pieces weighing less than 450 grams[248] Canada also pointed out that, in other export markets, its principal salmon exports are whole, eviscerated salmon.

7.151 The increased market access that would result under the alternatives outlined above would be significant and, in our view, warrants the search for other measures by Australia. There may, indeed, be some truth in the statement by Mr. Vaile, Australia's Trade Minister, of 20 July 1999 that

> "… the requirements that AQIS is going to put on any product being imported it [*sic*] may make it unviable for countries like Canada to export salmon to Australia and uncompetitive against the Australian product".[249]

7.152 For the reasons stated above, we find that the third element of Article 5.6 is also met. In this respect paragraph 7.143 applies *mutatis mutandis*.

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[245] See para. 7.141.

[246] See para. 7.142.

[247] See para. 7.140 and footnote 241 of this report, and paras. 29-30 of Canada's letter of 16 December 1999.

[248] In this respect we note the statement by Norway, third party in these proceedings, that "a normal person, for a normal dinner, would require 250-300 grams of skin-on fish fillet. There is, under the Australian requirement, no way that a dinner for two or a normal family dinner can take place without buying many different portions instead of one bigger piece as in the rest of the world" (Norway's answer to Question 2 from Australia, see also para. 5.219 of the descriptive part of our Report).

[249] Salmon producers demand disease guarantee, ABC News Online, PM – Tuesday, 20 July 1999, p. 2, Exhibit A to Canada's first submission.

4. The Panel's conclusion under Article 5.6

7.153 On the basis of our findings above, we conclude that Australia has acted inconsistently with Article 5.6. We recall that in so doing we do not impose any specific alternative upon Australia. We have been convinced, however, that there are other, significantly less trade restrictive, measures which are reasonably available, be it the options discussed above taken separately or a combination thereof, that would meet Australia's ALOP. We leave it up to Australia, preferably in close cooperation with Canada and other trading partners, to select and identify the details of such other measure(s).

H. INFORMATION REQUIREMENTS CONTRARY TO PARAGRAPH 1(C) OF ANNEX C TO THE SPS AGREEMENT

7.154 Canada next invokes Article 8 that requires Members to "observe the provisions of Annex C in the operation of control, inspection and approval procedures". It refers, in particular, to paragraph 1(c) of Annex C. This provision requires that

> "Members shall ensure, with respect to any procedure to check and ensure the fulfilment of sanitary … measures, that:
> …
> (c) information requirements are limited to what is necessary for appropriate control, inspection and approval procedures".

7.155 The allegedly unnecessary information requirements referred to by Canada are the requirements to prove that: (1) fish are derived from a population for which there is a documented system of health monitoring and surveillance; (2) fish are not juveniles or sexually mature adults; and (3) fish are not derived from a population slaughtered as an official disease control measure.

7.156 In our view, however, all three Australian requirements referred to are substantive sanitary measures in their own right, i.e. risk reduction measures allegedly needed to achieve Australia's ALOP, not procedures or information requirements "to check and ensure the fulfilment of sanitary … measures" that are subject to paragraph 1(c) of Annex C. Canada does not make any claim of inconsistency in respect of these three requirements under any other provisions of the SPS Agreement.

7.157 We thus find that Australia has not acted inconsistently with Paragraph 1(c) of Annex C or Article 8.

I. THE TASMANIAN MEASURE OF 24 NOVEMBER 1999

7.158 We recall that the Tasmanian measure which we decided to examine in this case following our preliminary rulings of 6 December 1999[250] and our further considerations above[251], declares a large part of Tasmania as a so-called "protected area" into which fresh chilled or frozen salmon may only be moved if, to the satisfaction of the Chief Veterinary Officer, the salmon has been sourced from an area which is free from six specified diseases. Canada acknowledges that it is not free from all of the specified diseases, so that fresh chilled or frozen salmon from Canada is effectively banned from importation into the relevant parts of Tasmania.

7.159 Canada claims that this Tasmanian measure nullifies Australia's federal measures taken to comply with DSB recommendations in that it restricts importation into most of Tasmania of even the limited range of salmon product than can be imported under the federal regime. Canada claims that the Tasmanian measure is inconsistent with Articles 5.1, 2.2, 5.6 and 8 of the SPS Agreement.

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[250] See para. 7.10.
[251] See paras. 7.13-7.20.

7.160 The Tasmanian measure is, according to its own terms, imposed "for the purpose of preventing the introduction into the [protected] area" of six specific diseases. The six diseases referred to are all "high priority" diseases in respect of which imports of eviscerated salmonids would, according to the 1999 IRA, not meet Australia's ALOP. However, the 1999 IRA concludes that the risk related to these diseases can be reduced to a level that meets Australia's ALOP by allowing imports of salmonids – even from areas where these diseases have been reported – on condition that certain certification and product related requirements are met. The Tasmanian measure, in contrast, *prohibits* the importation of *all* fresh chilled or frozen salmon (including salmon allowed for import under the 1999 IRA conclusions) unless it is sourced from areas that are free from all six diseases of concern.

7.161 Australia does not refer to any risk assessment or scientific evidence other than the 1999 IRA in support of the sanitary measures examined here. Since the Tasmanian measure – imposing a much stricter trade regime than what is called for in the 1999 IRA – finds no rational support in the 1999 IRA, it is not based on a risk assessment, contrary to Article 5.1. There is no other scientific evidence before us that would justify the Tasmanian measure. As a result, it is maintained without sufficient scientific evidence, contrary to Article 2.2.[252]

7.162 Given these two findings of violation we do not further examine any other Canadian claim in this respect. We agree with Australia that Canada has not substantiated a claim under Article 13 of the SPS Agreement obliging Members to "formulate and implement positive measures and mechanisms in support of the observance of the provisions of this Agreement by other than central government bodies". We do not, therefore, decide here whether Australia has met this obligation. This does not prevent us, however, from making reference to Article 13 in support of our finding above that the Tasmanian measure is subject to the SPS Agreement and falls under the responsibility of Australia.[253]

7.163 In summary, we find that the Tasmanian measure of 24 November 1999 is inconsistent with Articles 5.1 and 2.2 of the SPS Agreement.

VIII. CONCLUSIONS

8.1 In light of the findings above, we reach the following conclusions:

(i) due to the delays in the entry into force of several implementing measures -- beyond the expiration of the reasonable period of time for Australia to implement (6 July 1999) -- no measures taken to comply "existed" in the sense of Article 21.5 of the DSU (1) from 6 July 1999 to 20 October 1999 in respect of Canadian fresh chilled or frozen salmon; (2) from 6 July 1999 to 1 December 1999 in respect of herring for use as bait; and (3) from 6 July 1999 to the present (and, unless changes occur, until 1 May 2000) for live ornamental finfish; as a result, during those periods, Australia failed to bring its measure into compliance with the SPS Agreement as called for in the DSB recommendations and rulings adopted in the original dispute in the sense referred to in Article 22.6 of the DSU;

[252] In this respect we note that even Australia itself does not support the Tasmanian measure. In its letter of 9 December 1999 to the Panel Australia stated: "It cannot be in any way inferred that Australia supports the action taken by Tasmania in regard to the previous or latest measure. Australia has neither required nor encouraged the Government of Tasmania to take this action. Australian Commonwealth Ministers are on the public record in objecting to such action".

[253] See paras. 7.12 and 7.13 above as well as footnote 147 thereto. Obviously, the fact that Australia itself objects to the Tasmanian measure cannot mean that the measure is no longer subject to the provisions of the SPS Agreement.

(ii) even though the 1999 Import Risk Analysis, referred to by Australia in support of its implementing measures, meets the requirements of a risk assessment set out in the SPS Agreement, Australia, by requiring that only salmon product that is "consumer-ready" as specifically defined can be imported into Australia and released from quarantine, is maintaining sanitary measures that are not *based on* a risk assessment, i.e. the 1999 Import Risk Analysis, contrary to Article 5.1 of the SPS Agreement and, on that ground, is also acting inconsistently with Article 2.2 of the SPS Agreement;

(iii) Australia has not acted inconsistently with its obligations under Article 5.5 of the SPS Agreement;

(iv) Australia has not acted inconsistently with its obligations under Article 2.3, first sentence, of the SPS Agreement;

(v) Australia, by requiring that only salmon product that is "consumer-ready" as specifically defined can be imported into Australia and released from quarantine, is maintaining sanitary measures that are more trade restrictive than required to achieve Australia's appropriate level of sanitary protection, contrary to Article 5.6 of the SPS Agreement;

(vi) Australia has not acted inconsistently with its obligations under paragraph 1(c) of Annex C or Article 8 of the SPS Agreement;

(vii) Australia, by means of a measure enacted by one of its regional governments, the Government of Tasmania, that effectively prohibits the importation of Canadian fresh chilled or frozen salmon into most parts of Tasmania without being based on a risk assessment and without sufficient scientific evidence, is acting inconsistently with its obligations under Articles 5.1 and 2.2 of the SPS Agreement.

8.2 Since Article 3.8 of the DSU provides that "[i]n cases where there is an infringement of the obligations assumed under a covered agreement, the action is considered *prima facie* to constitute a case of nullification or impairment", we conclude that to the extent Australia has acted inconsistently with the DSU and the SPS Agreement it has nullified or impaired the benefits accruing to Canada under those agreements.

8.3 Given our conclusions above – and without prejudice to Canada's rights under Article 22.6 of the DSU -- we encourage the parties to resume their efforts to reach a mutually acceptable solution consistent with the SPS Agreement and the DSU in order to achieve the prompt settlement of this dispute.

8.4 We *recommend* that the Dispute Settlement Body request Australia to bring its measures into conformity with its obligations under the DSU and the SPS Agreement.

ANNEX 1

Transcript of the Joint Meeting with Experts, held on 8 December 1999

Chairman

1. I would like to welcome the parties and the scientific experts to this meeting. My name is Michael Cartland and I am the Chairman of the Panel. The two other panelists are Ms. Claudia Orozco of the Permanent Mission of Colombia, and Mr. Kari Bergholm, formerly of the Finnish Ministry for Foreign Affairs. The secretary of the panel is Gretchen Stanton, assisted by Christiane Wolff. The panel is also assisted by Jeffrey Gertler and Joost Pauwelyn from the Legal Affairs Division. The expert advisers to the Panel are Dr. Brückner, Dr. McVicar and Dr. Wooldridge.

2. Let me start by informing you that this meeting is being recorded. Therefore, when you take the floor, please be sure to turn on your microphone by pressing the green button. A red light is visible on the microphone when it is on. Equally important, please turn off your microphone when you have finished speaking; this system only permits one microphone to be on at a time.

3. May I now invite the parties to introduce their delegations, beginning with Canada? (See attached lists).

4. The purpose of this meeting is to permit the experts to expand on their written responses to the Panel's questions, highlighting the main points, and to permit a full exchange of views between the experts, the parties and the Panel.

5. I would like to take this opportunity to thank the experts for having agreed to serve as advisers to the Panel, and for having responded within such a short period of time to the Panel's questions. As you know, we are operating under time constraints, we must produce reports within certain delays, and this puts considerable pressure not only on us but on you as well.

6. For your information, following today's meeting and meetings tomorrow and Friday with the parties and third parties to the dispute, the Panel must proceed to prepare its report. The first part of this report summarizes the facts and arguments raised in this case, and will be provided in draft form to the parties for their comments. One element of this first part of the report will be a compilation of the experts' written responses to the Panel's questions. You will be given the opportunity to make any necessary corrections to this summary of your responses. Subsequently, the Panel must circulate its final report to the parties. The Panel intends to include a transcript of today's meeting as an annex to the final report.

7. I must stress that the proceedings of this panel are confidential. Everything which is said in this room is subject to the WTO rules of dispute settlement and the Panel's working procedures. So it is confidential unless its release is permitted by the parties. When the Panel has concluded its work and a final report is circulated to all WTO Members, that report is normally considered to be a public document, including the summary of your responses to the Panel's questions and the transcript of this meeting. We expect that the final report will be circulated in early February 2000.

8. In respect of confidentiality, we note also that on 23 November 1999 Australia submitted information which it designated as confidential under Rule 19 of our Working Procedures. This information was provided to Australia by scientific reviewers of the 1999 Import Risk Analysis and constitutes the so-called List C "Papers from the Continuous Scientific Review Process Submitted to the Senate Enquiry". Pursuant to Rule 19, this information:

> "shall not be disclosed in the report of the Panel. However, the Panel may make statements of conclusion drawn from such information without referring to the author of the information".

The parties and the experts can thus refer to this information. However, in our report, including the transcript of this meeting, this information shall not be disclosed. Note also that pursuant to Rule 20:

> "After the circulation of the Panel report or, in case of an appeal, after the circulation of the Appellate Body report, the Panel, Secretariat staff, parties and third parties shall return any information that has been designated as confidential to the party that submitted it, unless the latter party agrees otherwise".

This obligation of returning List C information, designated by Australia as confidential, also applies to the experts.

9. In terms of this meeting, the Panel intends to proceed as follows:

I will first give the experts the floor, one-by-one, to make any general introductory remarks which you believe appropriate. There is no need to repeat what is in your written responses, but I invite you to highlight your main points, the areas where you see the most important issues and points of contention. Should you wish to comment on any points made by another expert or by the parties in their rebuttals, you should feel free to do so. Please explain also whether any of the submissions you received after having given your written answers has changed your opinion or clarified certain doubts you expressed in your written answers.

10. At this time I would also ask for your responses to the additional questions you received when you came into the room. We will go through the questions to the experts one by one. (The parties will be asked to respond to these questions by Friday).

11. When this is concluded, Canada will be given the opportunity to raise any further questions and comment on the expert's views, and the experts will be given the opportunity to respond immediately. Should Australia wish to raise any follow-up questions directly linked to those raised by Canada, it will be given the opportunity to do so.

12. Following the responses from the experts, Australia will in turn be given the opportunity to raise any further questions and comment on the expert's views -- and Canada will be permitted to intervene to the extent that they have a directly-related follow-up question.

13. I should stress that the experts will be permitted to respond to each question as raised. However, it is <u>not</u> the purpose of this meeting to hear new evidence which the parties have not previously submitted. Similarly, we do not intend to have formal statements by the parties. Further arguments by the parties will be heard on Friday.

14. Subsequent to the interventions of the parties, the Panel may wish to raise some further questions or seek some additional clarification. Finally, I will give the experts an opportunity to take the floor again individually for any final statements you may wish to make, so that you may stress what views and conclusions you consider most important.

15. My last point is to request that you, experts and parties, try to be to the point in your responses, avoiding lengthy repetitions of what has already been submitted in written form.

16. With that introduction, I would first invite all of the participants to introduce themselves. And then I would suggest that ***we start with the opening comments of the experts***: Dr. Brückner, Dr. McVicar, Dr. Wooldridge, in that order.

Dr. Brückner

17. As you requested, I will not repeat the answers already given but I have prepared a short statement as a summary that I might go through. I think it is necessary to explain the rationale for the comments made and the terms of reference from which the comments were formulated. This is just a broad overview not going into specific issues, just to try and explain why these answers were given.

18. An import risk analysis is done for one primary purpose in my view and that is to enable the veterinary administration of the importing country to make either definite "yes" or "no" decisions to allow or refuse imports. If the answer is "yes" then the IRA must also be able to guide the administrator on the risk management practices to be implemented and to allow SPS measures to mitigate risk associated with the imported commodity. It is my view, and as explained in responses to questions 1 and 2 posed to the expert advisers, that irrespective of whether a quantitative or qualitative assessment was conducted the crucial consideration in respect of the product to be imported is the possible consequences in the event of disease establishment or spread. This is turn guides the decision on the risk management practices and the SPS measures to be applied. It is also common practice in international trade that risk mitigation is the responsibility of both the exporting and the importing country, but balanced in such a way that they do not impose a restriction on trade.

19. The methodology applied to the 1999 IRA follows a structural pathway, in my view, of reasoning and assessment in compliance with accepted and recommended international guidelines for a qualitative risk assessment. It succeeds, in my opinion, to spell out possible consequences and to establish the rational relationships between the risk management and the SPS measures decided upon and the foregoing hazard and identification and risk assessment criteria. It is, in my opinion, acceptable and scientifically justifiable, for example, not to fall into the trap of accepting the homogeneity but to evaluate the consequences of each disease individually and from that inference decide upon the measures to be applied. It can also not be taken for granted that if for a particular disease the probability of disease establishment - that is the release assessment plus the exposure assessment - is valued as "low" but the consequence assessment is "moderate" to "high", that the administrator should not consider the risk mitigation measures. One example is furunculosis where there is a difference in assessment factors in respect of wild ocean-caught Pacific salmon and other salmon. Another example is the rationale for the risk management factors given for IHNV. This rationale forms the basis for the disease-based risk assessment followed by Australia. Australia has for each example recognized this fact by making provision for this in the health certification requirements. That is, not requiring the same certification for *A. salmonicida* for wild ocean-caught salmonids versus other salmonids and also in respect of the certification requirements for ISA, and that is only for Atlantic salmonids. Recognition is also given to the fact where an exporting country for instance can give scientific verification of disease absence it will be evaluated on a case-by-case basis or be already reflected in the import requirements for a particular country. For example the acceptance of the more favourable disease status of New Zealand.

20. The expert panel was reminded more than once when the questions were given out to give comments but in view of the "1999 report in general". I perceived this request as a reminder not to concentrate on specific aspects related to specific diseases, but to judge the IRA as a total assessment and not to lose sight of the general trend throughout the report to verify the SPS measures eventually decided upon for the three commodities concerned. The other alternative would have been to insist on quantitative assessments for diseases where sufficient data exist, a qualitative assessment where such data is not available, and at the end come forth with a different set of SPS measures for each disease reflected in difference sets of health certifications. Such an approach would be in contradiction of the SPS Agreement and would result in a risk management approach that will be impossible to handle - both from a logistical and administrative point of view.

21. In conclusion, my approach in answering the questions was taken from this platform and also taking into consideration the framework within which the assessment was conducted - that is,

excluding endemic diseases and concentrating on diseases exotic to Australia. From a veterinary administrative point of view it is also essential to focus on the rationale for addressing risk management, that is the findings of the release assessment and exposure assessment as well as the consequences of establishment or spread of an exotic disease. For this reason, it is in my view scientifically justified that the SPS measures eventually decided upon goes higher than the minimum requirement of evisceration proposed in the OIE Code in order to meet the ALOP of Australia. The only exception, as stated in my answers, is my failure to see scientific justification for the skin-on/skin-off requirements for "consumer-ready" products. I have read through the other documentation that was supplied after we submitted the answers to the questions, but I don't think we need to go into details of that. These remarks conclude my overall impressions.

Dr. McVicar

22. I thank the Panel for the invitation to participate in this exercise. I have found the issues involved to be highly complex and therefore very challenging. Having worked in the field of fish diseases for a full 30 years now both in primary research and, particularly during the last 15 years, in the use of statutory regulations control fish disease, I am only too well aware of the difficulties in achieving a definitive answer to many of the central questions associated with decision-making process. I hope that I will be able to assist the Panel in clarifying any points I have raised earlier in my written responses and to further assist today in additional areas where I have expertise.

23. The Panel should be aware that I have been closely involved in earlier aspects of the specific subject under discussion. I have been acting as advisor to the Quarantine and Inspection Service during the compilation of the 1999 risk assessment on salmonid and non-salmonid products and on ornamental fish. I drew the attention of the WTO to this before accepting the Special Service Agreement and it was indicated to me that there were no objections raised. I have also worked closely with Canadian scientists and regulators over the last few years. I don't consider this previous involvement in any way influences my impartiality in responding to questions raised by the Panel as my role with the IRA and with the Canadian scientists was purely on technical and scientific matters and not on any aspects of policy. I know both parties well and respect their views and their scientific expertise and therefore I am disappointed that a bilateral agreement could not have been reached prior to the dispute coming to this stage.

24. It seems to me that one of the major differences in this dispute is the extent to which quantitative data should be used in the decision-making processes. Right at the start I want to make clear I am not a risk assessment specialist or a theoretical modeller of fish disease. My background is as a practical scientist in the fish health field. My involvement with risk assessment in this area has been through research and epidemiological studies considering the origin and spread over a wide range of diseases in both wild and farmed fish, for instance pancreas disease, VHS and ISA, and particularly in the diagnosis and control of farmed fish diseases, and secondly in the development and modification of fish disease control regulations both in the UK and the EU.

25. Through my career I have been dealing with real-life situations where practical experiences, including the consequences of particular actions, have become apparent and have to be lived with afterwards. Wherever possible, my approach to the questions raised by the Panel has been to attempt to place my responses into real-life situations, either where I have personal experience or where there are sound data present in the scientific literature on fish diseases. I don't intend to review my written answers, but will just highlight some of what I consider to be the main issues, where disagreement still exists between the two parties and where it has been indicated uncertainty remains.

26. Historically, many of the decisions and practices and policies regarding fish disease prevention and control have been made with woefully incomplete numerical supportive data, and considerable emphasis has had to be placed on previous experiences on how a disease behaves under particular circumstances. However, although not formally recognized as such, all the main

components of formal risk assessment have long been the basis of important aspects of both the application of practical fish health controls and also the formulation and use of legislation in this field. There is a progressively developing database for most important diseases and where good data become available, for instance survival of a pathogen under particular conditions, these are being used and are already or may become central to decision-making.

27. In this introductory statement there are three areas I wish to make specific comments on. These are where I consider there are practical constraints on quantitative and qualitative risk analysis; some reference to appropriate measures being used to reduce risk; and disease agents and variants of these as included in the risk assessment procedures. All my comments reflect areas of uncertainty in the science and where I would advocate caution in interpreting when the data can be used in decision-making.

28. First of all, the constraints. There are major dangers from attempting to over-simplify risk factors in fish disease patterns. Of course the ideal is to have direct evidence from real situations where true risk from disease can be measured in a fully quantified way. Unfortunately, most quantitative data on fish disease comes from aquarium or lab studies. The dangers associated with the use of such data as a basis for risk assessment is illustrated by the ease by which it is possible to break down natural barriers of host susceptibility under experimental conditions. This is reflected in international regulations where experimental studies cannot be used as evidence of host susceptibility. Similarly, data on survival pathogens quoted in the scientific literature are not normally refined and often reflect a maximum found under particular experimental circumstances or even simply how long the experiment lasted before it was terminated.

29. The second point I want to make in this area is that it is normally the case that a complex array of interacting components of the biotic and abiotic environment are determinant factors which may contribute to the establishment, severity and persistence of diseases in fish. I have actually participated in such detailed studies with disease in wild fish and confirm this statement from my own work. Because of this, and as a consequence of my practical experience in dealing with prevention and control of fish disease, I have a certain degree of reservation about the direct application of mathematical modelling systems in assessing risk in the field of fish disease. It is my view that unless models are securely based on field-tested data, there is a strong risk that assumptions being made may lead to seriously misleading conclusions. This is not to say that I do not consider there is a place for modelling risk assessment, particularly as a means of indicating where more data are required to allow us to move from a qualitative to a more quantitative assessment, which must always be our objective I think. And following on from this, it is of course true that the absence of the occurrence of an event after prolonged use of a certain practice, such as import of a product, is of considerable significance and I've indicated this in my written answer. However, again in this area a level of caution is necessary and there are two points of relevance that I wish to take up here, and probably I am slightly repeating what I have said in my written answer. The perception of risk is changed immediately by the first occurrence of a disease associated with an importation event. All too frequently scientists are seeking explanations for an event which has not been predicted, and that is very true in the field of fish disease. And the second point I want to make is for a risk assessment to hold good the conditions which led to the occurrence or the non-occurrence of an event must be the same. For example, the fact VHS has not occurred as a consequence of introducing herring, which may be infected, as bait is significant, but may have little relevance to the use of the same product in other circumstances, for instance in the extreme example as a source of food and in salmonid farms where the risk could be considered to be quite high.

30. If I go on to my second area then, this is the risk of reduction measures. Again, there are several aspects of this area where some caution is necessary. Its true that there has been no extensive or systematic studies conducted in practical situations on the actual consequences of each of the measures being introduced by Australia in reducing actual risk. Lab tests can show some viruses such as ISAV can survive for exceptionally long periods, many months, in sterile sea water, but practical

experiences indicate survival in the field may be very short - actually only a matter of days. In this example there is dilemma as to which figure should be incorporated into a risk analysis. I would choose the practical side of it. Its also clear that a reduction in the level of viable pathogen in a product as a consequence of an introduced measure will not necessarily lead to precisely the same level of reduction in the final risk of disease exposure an establishment associated with product. Similarly, when it comes to assessment of risk of exposure and establishment, it is not always possible to make a direct comparison between the controls which may be necessary for the different diseases and Dr. Brückner has already referred to this. There are many variations in biological features which require they should be treated individually. It seems obvious that these problems in interpretations of the data currently available on occurrence of infection in product, and the survival and transmission potential of important pathogens is the crux of the dispute in the present case. Certainly this whole area needs to be addressed as soon as possible and quantitative data generated. Until such information is available, there are wide assumptions having to be made on both the need for and the effectiveness of any measures being introduced. It seems inevitable that differences of opinions will remain until more refined data are available.

31. To go on very briefly to the disease agents, and there are two areas here which I think warrant some comment from me, namely which diseases are specified and secondly how to deal with differences in the "types" within a disease name. Risk assessment and procedures which may be used to reduce a level of these risks to an appropriate level require identification of specified hazards associated with a particular product and that as far as I can see is in the SPS Agreement. For each product in this discussion it seems to me only to be relevant how controls are used for these specified diseases in the product in the same fish species or the same diseases in other products, for instance other salmonids, non-salmonids and ornamentals as we are talking about here. The fact that a country chooses to have more relaxed controls for other non-specified diseases, for instance in wild fish products, such as these which occur in pilchards or with indigenous diseases which have a restrictive distribution, it would seem to me to be of little relevance to discussion in salmonids. Similar comments I can make with respect to ornamental fish and to wild marine fish in the risk analysis. Each product and each disease warrant independent evaluation. I am possibly missing a point here, but if this is put into context of the potential for disease occurrence in the future I hope you will appreciate the perspective I am coming from.

32. It is a scientific concern that significant new disease conditions are continually being found and that international organizations such as OIE have to continually reassess their lists of notifiable and other significant diseases. By doing so they indicate justification for the possible imposition of trade controls which did not exist before. It is therefore inevitable that there is a significant risk that these diseases will have already been transferred with traded products prior to controls being implemented.

33. There is an increasing debate on the extent to which a precautionary approach should be followed, with organizations such as NASCO (the North Atlantic Salmon Conservation Organization) advocating care to avoid a levelling down to the lowest common denominator. However, its my understanding that trade restrictions should not be imposed on the basis of unspecified unknown risks as a precautionary measure. This is particularly relevant to the discussion on uneviscerated fish being fed to tuna, where whole fresh fish pose a risk from various known diseases and probably many unknown diseases. However, unless these are specified as being of concern to Australia after they have carried out their appropriate risk evaluation, it would appear that they have no relevance to this discussion. Also its true that as knowledge of fish disease is rapidly advancing, any new information should be continually incorporated in decision-making and risk assessment processes. Therefore it hardly needs to be said that the fact that a risk was assessed at a particular level some time previously, this may be of little relevance to current levels of risk now being assessed.

34. And just finally I want to make a couple of comments on variants of the same disease. As I have just indicated, knowledge of these diseases are a rapidly developing area, although there are still

many obvious inadequacies evident. In relation to the present discussion the ability to differentiate the diseases of concern from other closely related organisms is of particular relevance. At present, there is a gradation of knowledge apparent for the different diseases. I'll give a few examples here. From well studied bacterial agents such as *Aeromonas salmonicida* the differentiation of types, for instance between typical and atypical, is well understood and this is recognized in legislation. Similarly fish viruses also show considerable variations. IPN is a virus also relevant to this discussion. It is well know that there are several different serotypes of this well studied virus, each with different host-pathogen characteristics. However, only some of the known aqua birna viruses are differentiated by regulations. There is now increasing evidence that for some other fish viruses, the current internationally recognised diagnostic methods can not distinguish between different "sub-types". These can show markedly different biological characteristics, such as pathogenicity. For example, with the present level of knowledge it is not possible to separate "classic salmonid VHS" from possibly a wide range of marine rhabdoviruses and these are found in several different host fish species. In an attempt to resolve this problem, there are major research studies currently in progress to further refine diagnostic methods. Similar difficulties are beginning to emerge with other diseases and other viruses such as ISAV.

35. How can these difficulties be accommodated in risk assessment and that's why I ask. There are difficulties when international regulations cannot yet fully recognize such variations in disease types, yet science is beginning to point in a different direction. As a practical generalization, it is evident that the risk of a disease outbreak occurring is greatest when infection is transferred from the same or closely related fish species. This principal can be extrapolated to the risk associated with imported product and holds good when the "strain" of concern has limited host distribution. What disease the measures are trying to protect from may therefore strongly influence the decision-making in the risk assessment processes. I think that's all I want to say just now, thank you.

Chairman

36. You express some regret that the parties had not arrived at a bilateral agreement before this. I would only comment that it is never too late, in fact. I have known cases where a bilateral agreement has come on the day when the panel was due to produce its report. So we live in hope. Thank you very much for that very substantive statement. Dr. Wooldridge, you have the floor.

Dr. Wooldridge

37. Since I sent in my original report to you as you know we have received another considerable quantity of paperwork, but I was actually on holiday for the large proportion of that time, so I in fact only got to see the extra paperwork this week. Therefore I haven't studied it perhaps as well as ideally I would have liked to have done. However, in my opening statement I think I am going actually to address quite a number of the issues in question 34 that you have put: "what is my reply to the comments made by Australia on my written answers". So by the time I have finished this I think that question will basically, more or less, have been answered.

38. First of all I would just like to indicate my background, because I think it did say that I was coming to this from the point of view of a quantitative risk assessor. In fact, the relevant aspects of my background, among other things, are that I am a veterinary surgeon, qualified as an epidemiologist and have been working in the field of risk analysis now for a number of years in general, and that includes both quantitative and qualitative risk assessments. It also includes risk communication, hazard identification, and a little bit of risk management, so I think it is a bit narrow to suggest that I am only a quantitative risk assessor.

39. Looking at the questions that the panel set next, your question 2, I had quite a problem in answering because the question itself suggests bias because it already seems to assume that one might be looking in the direction that the report is not a proper risk assessment and that comes directly from

the wording of the question. Now that worried me. I did conclude that, but I was worried that the Panel had already concluded that. I have to point out that I felt the question was worrying. The other issue about that question is the meaning of the word "proper" in this context. I spent quite a lot of time thinking about what "proper" means. Is a "proper risk assessment" proper because of the way it is set out or is a "proper risk assessment" proper because it comes to a conclusion with which one agrees, and is it necessary for a proper risk assessment to properly evaluate the risk? In the end I decided I wasn't entirely sure what, in fact, was required by the question. However, my answer I think gives the information you require, in that though I believe it to have been set out in the way in which a proper risk assessment would be set out, I do not believe for the reasons I have given that it actually fully assesses the risks.

40. The next point I wanted to make is that when I first looked at this risk assessment I did believe that it looked very good. It was full of relevant information and was well set out in general terms. But when I went through it in detail I did have some major concerns, which I have highlighted in my answers. They involved mainly the place of the exposure assessment in the risk assessment and the issue of subjectivity *vis-à-vis* the precision of the discrimination in the various levels of qualification. Now, picking that point up and looking at the Australians' comments on my comments, I would just like to say that with regard to the release assessment part, my criticisms were not, as it seems to be suggested in Australia's point 5, that I felt the release assessments were unclear *per se*, but that there was a *risk* of bias due to a perception issue due to the selected pieces of data actually included under the release assessment. I thought that was clear in my answer but I just want to re-emphasize that.

41. With regard to my worries about the exposure, I would like to say that in qualitative or quantitative terms a proportion of the total risk, and here we are talking about the risk of release, a proportion of that is always going to be less than the total risk. So if you have got a particular release assessment when it goes down different pathways, given that we expect that the majority of imported salmon for human consumption will be consumed by humans, the proportions going down the other pathways are bound by definition to be less than the total risk. If you are talking about a very small proportion, it is bound to be much less than the total release risks whatever they may be, and this holds true whether it is qualitative or quantitative.

42. With regard to my points about the subjectivity and the fine discrimination implied, and more than implied, in the risk assessment, there seemed to be a suggestion that I was suggesting that a quantified risk assessment was essential. Well, I am certainly not suggesting that, but what I am saying is that if one wishes to discriminate that finely then the only way to do it practically is by quantifying your points of discrimination. That is not the same thing as saying "I think the risk assessment has to be quantitative". I categorically do not think that it has to be.

43. I want just once again to emphasize the distinction between the assessed risk and the acceptable risk. I am very disappointed that I did not feel that the assessed risk here was proven to me in an appropriate and full fashion which I would like to have seen. However, I fully accept that any country is able to select the level of protection which it requires and it may be that if the things I would have liked to have seen taken account of in this risk assessment were actually taken account of in it, then it might be that I might have been convinced by the arguments. It wasn't that I believe that Australia necessarily got it wrong, but more that they didn't convince me that they had got it right. There are extra things I need to see in order to be able to make a decision one way or the other there.

44. My next point is that obviously both countries have been tasked to present all the experts opinions basically in a way which show their argument to best advantage. I accept that, so I realize that it is Australia's task to try and demonstrate that I in fact have come to the wrong conclusions. I accept that, and I'm not going to take it personally, of course.

45. It is the Panel's job, however, to decide whether the risk assessment fulfils what the World Trade Organization and the SPS Agreement require in terms of legal requirements. What I would like to say is that when I assess something like a risk assessment, I work on the basis of the highest standards that I can. So I'm assessing this risk assessment trying to look at it in terms of the best quality risk assessment that I would like to see. If the SPS Agreement does not require that risk assessments should be of the highest quality then I suggest there is a flaw in the SPS Agreement. Now, I don't actually think that's the case because the SPS Agreement or the OIE have been charged with the responsibility for setting risk assessment and risk analysis standards. With regard to this, there are various chapters in the various codes that the OIE have had drafted. There's one for fish risk assessment, fish risk analysis, which I have looked at. I believe it to be based very closely on the general Code for risk analysis which was produced in 1999, it was finally accepted in June-July 1999. Now there was a suggestion implicit in Australia's comments, I don't think it was actually explicitly said, but there was this implicit suggestion that I might not be totally au fait with the requirements of the OIE risk analysis code as per the 1999 chapter. In fact, I was one of the three people who wrote that, and every point that I wanted included in it was included in it and most of the points I didn't want include were not included. So I think it is true to say both that I'm pretty au fait with it, and that my way of viewing a risk assessment correlates pretty closely with its way of viewing a risk assessment.

46. I have got one final comment that I wanted to make in the opening statement that I had already decided that I needed to make. It is interesting that the same set of questions sent to three separate people, were actually interpreted in quite different ways by those three different people and that was a fairly short, fairly simple set of questions. So it does not surprise me that a document [the 1999 IRA] this size is interpreted in very different ways by different people. I think it just proves that this is an evolving and very difficult area, and so I would wish the Panel good luck.

Chairman

47. Well on that note, perhaps we can now turn to the questions which we have circulated in writing at the beginning of this session. As I said in my introductory remarks, we do intend to go through these one by one. I think in the first case those that are addressed to all the experts, I'll just take them in the same alphabetical order that we have just had the three initial statements. So perhaps I can start by asking Dr. Brückner to respond to question number 25.

Dr. Brückner

48. Thank you Mr. Chairman. I perceive this question as that, in view of the additional information that came out after we answered the questions, whether we have changed our views. I think I stated in my answer, especially in relation to questions 1 and 2, why I take that view so I maintain what I said originally.

Dr. McVicar

49. Thank you Mr. Chairman, I take a very similar view to Dr. Brückner. As I've said in my opening statement, I have taken very much the practical aspects of this into consideration and to me it’s the correct way forward in this particular case.

Dr. Wooldridge

50. I think the reasons for my opinions I gave quite clearly in my answers to my questions and it's based on my wish to try and reach the highest standards of risk assessment that we possibly can. And I therefore don't think I've changed my view either.

Dr. Brückner

51. Mr. Chairman, thank you. I'm not sure whether I understand part one of the question correctly, which says "whether Australia maintains any distinctions in levels of protection it considers to be appropriate in respect of different situations". Would that imply a change in the distinction in the level of protection? I don't follow it. Maybe one of the other experts could try.

Chairman

52. … It's really referring to that.

Dr. Brückner

53. Is it mainly in relation to the pilchard issue?

Chairman

54. Yes, and consistency.

Dr. Brückner

55. Mr. Chairman, in the comments from Canada they did supply the paper, I think by Whittington, in relation to this issue and in Australia's comment they also made further comments on that. Australia still maintains the view that given the fact that it's endemic in Australia they don't need any further levels of protection in connection of that. I indicated in my answer that I reserve comment on that because we had the general comments in the report that was not very elaborate in terms of pilchards, we had the scientific paper and then we had a rebuttal on that. So I am very hesitant to give a definite opinion on that. But the stance taken by Australia in terms of the endemic situation of pilchards in their view, I supported that in lack of further evidence.

Dr. McVicar

56. Thank you Mr. Chairman. I had the same difficulty as Dr. Brückner had in understanding what was going on here in the underlying situations, essentially the same problem. Thank you for your clarification. As I said in my opening statement, the science of fish diseases is very, very rapidly developing and we are continually faced with new issues, new developments and the herpes virus in the pilchards in Australia was one such example. I think it is anything but clarified yet what the significance of this or the origin of this actually is. I find it very, very similar to the situation we are actually dealing with in Scotland at the moment regarding the ISA virus, where we don't know the origins of it and the possibility that it maybe imported, it maybe from a natural source, in which case is it endemic or is it not endemic? These are exactly the questions we are wrestling with at the moment. As I also said in my opening statement, control measures to reduce risk have got to be based on demonstrable and proven cases and not on possible cases. I find this situation too unclear as yet to actually say that this disease <u>is</u> coming in from the outside, in which case you would wish to possibly introduce control measures. Thank you Mr. Chairman.

Dr. Wooldridge

57. I am not, as you know, a fish disease expert and therefore this potential disease of pilchards and the question as to whether it was endemic or exotic was something I had not considered before. So I was reliant entirely on the information I could obtain from the papers, and it seemed to me that there was grave doubt about which source it had come from and whether indeed it was endemic or exotic. Given that, I did think the way it was dealt with was not the way I would have chosen to deal with it if I was trying to do a risk assessment and therefore rather odd. I don't think that anything that

has been said so far or that I have read since I wrote my report has actually changed my opinion on that.

Chairman

58. Thank you very much. We'll now go on to question number 27, which refers to question 29 to the parties. I just wonder whether we now actually need this question in view of the answers we've just had. You probably have basically covered it in what you have just said. Let's go on to number 28 in that case.

Dr. Brückner

59. Chairman, yes I think it relates probably to the previous one. I think the issue here is whether the difference in the protection set for salmon and pilchards are scientifically justifiable. In the comments that we had afterwards from Canada and then from Australia, I tried also to set my mind at ease in this whole issue. In the end, I think the reasons given by Australia for the difference are, in my view, acceptable for the reason that they follow a logical pathway to come to that conclusion. I heard what Dr. Wooldridge said and maybe otherwise in quantitative terms it could have be challenged, but in view of what we have and the structured way of reasoning for this issue, I think it is justified.

Canada (Mr. Kronby)

60. If I may, just to clarify, the question refers to Canada's rebuttal statement. It's in fact paragraph 37 in Canada's responses to the questions to the parties.

Dr. McVicar

61. Thank you Mr. Chairman. My confusion was on the rebuttal because I had made comments on the rebuttal statement from Canada not on the original. As I said in my written statement, I believe a distinction can be made where a product is used in different circumstances, and in different situations. The use of whole uneviscerated pilchards for use as bait and feed, in the environment it's being used currently, with long experience, would indicate low level of risk in that environment. That is an accepted statement I think that most people would go with. Circumstances will change if disease appears as a direct consequence of that, as I have also indicated. Therefore, the level of protection necessary on that product used in these circumstances may be different from the use of that product in different circumstances. For instance, and I use the example in my opening statement, if you use that as feed directly into a salmon … And I feel very strongly that that is the situation here. There is a different level of risk. Hopefully any risk assessment will take in this final step in the chain, not just what infection is present, not just survival through, not just the release, but also the exposure at the final end point: availability of susceptible hosts, etc., dilution factors. I mentioned all of these factors in my earlier statement.

Dr. Wooldridge

62. I think I have covered this in my answer to your original question 10 and I cannot see that I can add anything.

Chairman

63. Let's go onto the next question. The next two are in fact addressed to Drs. Brückner and McVicar. So we will start with 29, for Dr. Brückner. No we have dealt with that. 30.

Dr. Brückner

64. As far as question 30 is concerned I would not like to comment because I am not an expert on the trade issue of fish internationally, whether it is processed or chilled or so on. So I think it would be unfair for me to comment on that question.

Dr. McVicar

65. Most trade throughout the world in fish product, specifically if we take salmonids first, is in the gutted product. Not exclusively, there is a market certainly within Europe for whole ungutted product and for the sort of reasons that you can indicate freshness, etc. There is clearly a market for that which is protected and is a niche market. However, it is true that most of the trade is an eviscerated form, and looking at the OIE recommendations, this is recognized as a way of significantly reducing risk from diseases which are usually associated with blood and blood-rich products. So yes, I would agree that most of the trade is in this. The further removal of heads and gills and any part which is not going to be eaten or not cooked, will reduce risk. I think that goes by virtue of the fact that you are removing tissue which is not going to be disposed of and I can appreciate that. However this, as far as I am aware, has not been quantified or properly evaluated, and a level of protection gained by assessing such a process is not at all clear. Looking at the form of frozen fillets, frozen as indicated in my direct response, particularly with herring, does reduce the level of activity present and viability of any pathogen that may be present. So again there is a possibility of a further reduction at this level.

Chairman

66. Does that cover whole fish as well? You mentioned fillets.

Dr. McVicar

67. Yes, getting on to whole fish for human consumption. It is unusual for whole fish, apart from pilchards, small herring, white bait, etc., to be traded for human consumption in that the digestive enzymes present in the viscera are liable to lead to degradation of the product and it is only quite rare in fact that the whole product is actually traded for human consumption.

Chairman

68. But the whole fish, eviscerated?

Dr. McVicar

69. Eviscerated is quite often traded. It is a normal method of trading, for instance for farmed salmonids throughout the world from Europe.

Chairman

70. So the concern is with the viscera rather than with the skin.

Dr. McVicar

71. That is correct.

Chairman

72. If there is nothing further on that one, can we go onto the next question, number 31, to Dr. Brückner?

Dr. Brückner

73. Thank you. I agree with Canada that I probably interpreted that as whether stricter measures than the current ones could be applied. But whether they are stricter or more lenient, it is not an easy question of just "yes" or "no". If one proposed more lenient sanitary measures, then they would once again need to be evaluated against the outcome of the measures. So, yes, it would be possible, but then it would imply the proposal of less stringent measures and an evaluation in terms of the consequence. So whether it goes one way, or the other way one has to reassess in terms of the whole process again, especially in terms of the risk management and the consequence factors. I think what has been done in the IRA is that they have followed this approach, in general, to establish the relationship between the proposed measures and the ALOP. So if I say "yes", then I need to have evidence in terms of the total process again.

Chairman

74. … Question 32, which is addressed to Dr. McVicar.

Dr. McVicar

75. Just to aid those people who don't have the actual question in front of them, I shall summarize it. Fish used for purposes of fish-feed (bait) is obviously more likely to introduce disease agents into the aquatic environment than product for human consumption. The conclusion cited that risk of such imports introducing exotic disease capable of producing large fish kills are either low or doesn't exist. Canada made a submission, paragraph 115 of their statement, that the absence of disease from billions of tonnes of dead eviscerated fish is even stronger evidence that the risk from such product is negligibly small. I think I have already partly answered this, and have certainly repeated something that was already said in my written statement. But it depends on where you are using this. If your tuna farm is beside a salmon farm, then the salmon farm may be at risk from any disease agents that can cross between the species. So it is putting the salmon at risk if you are growing the salmon in the same area as you are feeding or using this as bait.

Chairman

76. Is that in reality a real possibility?

Dr. McVicar

77. I can't say what the situation is in Australia, but certainly in Britain, because of the risk of carcasses produced in secondary processing of salmon products, for instance from Norway being used as lobster bait, we have brought in regulations and codes of practice to prevent that from occurring. There is a serious risk of that material then transferring across. There is a similar risk, with the caveat that less of the diseases (because it is a different species) will transfer from pilchards or herring being used as bait or feed into salmonids. They will pose a risk to the same species or related species.

Chairman

78. Am I not correct in this particular case that the geographical separation is very great?

Dr. McVicar

79. I understand that is the case.

Chairman

80. So therefore the situation that you are envisaging is unlikely to have arisen.

Dr. McVicar

81. Indeed so. In fact within the country we are now looking at legislation to prevent secondary processing taking the same line, i.e. release of material from carcasses and from heads into their environment in the vicinity of important producing areas.

Chairman

82. If we have got nothing further on that one, perhaps we could now go on to question 33 to Dr. Wooldridge. I think actually you have probably covered 33 and 34. 35 is rather curiously drafted again because it refers us to a question ("does Canada agree") - I guest that is not part of the question you are being asked. Do you have any views on the IRA 1999 meeting OIE standards?

Dr. Wooldridge

83. Yes, I do believe I have answered question 34 already. I am not sure about question 33. I would just like to pick up on that, if you let me, because I think the question suggests that my original answer has been misinterpreted. I think my paragraph 10.2 actually covers the first sentence there or the first-half of point 33. The second-half of point 33 - I think I am reading this correctly - is asking if my opinions have changed on whether there is a scientific justification for the difference in quarantine measures. I didn't say that there wasn't. What I intended to say was that it has not been proven to me that there is, which is not quite the same. So I have a problem with the wording there. I am not sure whether I have just clarified it or made it greyer.

84. Going on to question 35, I am sorry, but again, I think I have answered that in questions 1 and 2 in the sense that it all revolves around what is the meaning of the word "proper". The things that are required are all in there. I do not believe they have been utilized completely appropriately. Consequently my interpretation of what is required from the OIE chapter which I co-wrote is that it doesn't fulfil those requirements. However, the information required to do that is there, I believe. I hope that clarifies it. Come back to me if I need to go on with it more.

Chairman

85. We will reflect on that. We might have something further to say. For the moment I think that is fine. I think what we can usefully do now is go on to the next stage, which is to offer the floor to Canada for any questions or comments that Canada may have on the experts' views. I said earlier the experts will have the opportunity to respond immediately and Australia would also have the opportunity to put any directly related questions.

Canada

86. If I may ask that we have a short break so that I can consult with my own experts and that we can digest what we have heard a little bit and maybe try to decide whether we do have questions and if so how best to formulate them to get clear answers.

Chairman

87. Fifteen minutes – until half past. Thank you.

Chairman

88. Perhaps we can resume after that little break. I take it that Canada is now ready to put its questions and comments. You have the floor.

Canada

89. Thank you Mr. Chairman. I think after discussing this among ourselves we can keep this short and simple. Canada has really just one question, and it is a question directed to Dr. McVicar. I understand you to say that in the case of bait fish, the fish to which bait are fed, that is the species, will significantly affect risk. I am leaving aside for the purposes of this question other factors such as volume or location because I understand your comments earlier about dilution, depending on the environment into which bait fish is deposited. Generally the fish to which the bait is fed will significantly affect risk. Thus if pilchards are fed to salmon, for example, as bait or feed, risk would be higher than if it is fed to tuna. Would you agree then that if pilchards are used as recreational bait fish, such as for salmonids, that would pose a more signficant risk than if they were fed to tuna?

Dr. McVicar

90. Yes, I think there is possibly some misunderstanding that has crept in here. Pilchards fed to pilchards will be higher risk. Salmon fed to salmon will be higher risk. Pilchards fed to salmon will be lower risk, but significant only if it is shown that the same agent, or even strain of agent, is present in the pilchards which will cause disease – as opposed to infection – in the salmon. And tuna fed to tuna will be higher risk, because the agent that is carried by the tuna being fed to the farmed fish will clearly be from the same species. So crossing the species barrier, although not impossible, in general terms will provide a lower level of risk; both by not carrying the same range of agents capable of infecting the receiving fish, and also by carrying different strains. This is very clearly illustrated by the presence of different virus strains in many different fish species of marine fish in European waters which, although they may show substantially different biological characteristics, such as in their pathogenicity to different types of fish, may not be distinguishable by current techniques. It is clear that the rhabdovirus, which is identified as VHS in the OIE Code, although pathogenic when fed to turbot - another of our marine species - shows very low pathogenicity and low infectivity when the same species is fed to salmonids. The rainbow trout VHS fed to turbot is at low pathogenicity, low infectivity. They are all recognized as VHS, but these are clearly different strains. Does that answer your question?

Australia

91. I would just like to thank all the experts for their further comments and clarifications. We have just got a couple of questions for each of the experts and one which I will address to all three. Also just one point. I just wondered whether there is any possibility, if the experts have written versions of their statements, whether we could get copies of those.

Chairman

92. Yes, I did raise the possibility in my introductory remarks that the experts may wish to confirm in writing what they have said, or elaborate a bit. I wasn't actually requiring them to do so, but if anything does come in writing within the next two days that is either a confirmation or an elaboration of what has been said, then we will certainly see that that is circulated to both parties.

Australia

93. Just a question which I would like to address to each of the three experts to begin with, if I could, and it relates to the question of the herpes virus and pilchards. I just draw attention of the experts to paragraph 119 of Australia's rebuttal statement or submission and also section 6 of Australia's comments on Dr. Wooldridge's answers to the earlier questions. I will just read briefly paragraph 119. It just states that the herpes virus is highly host-specific to pilchards and wild ocean fish and is not associated with salmonids. It is endemic to all marine waters of Australia where the species is found and also appears unique to Australia-New Zealand marine waters. The cause of the sporadic disease outbreaks is yet to be established. There is no suggestion that the disease was introduced from imports. What I would like to ask the experts is that are any of them aware of any evidence that this statement, in particular that the herpes virus is endemic to all marine waters of Australia, is not correct?

Dr. Brückner

94. I think I have answered the question earlier – suffice it what has been said for lack of further evidence.

Dr. McVicar

95. I think I also answered that question earlier on. The evidence either way is actually very slim at the moment, but until such a point in time as we have evidence that it has been introduced there will be no justification in taking measures against it.

Dr. Wooldridge

96. I am not a fish expert and I am not au fait with all the evidence on fish diseases and particularly including this disease. As I said earlier, I was going on what was in the papers and I thought that I had already answered that question in my answer to number 19.

Australia

97. Just to clarify - our point is that this disease is now endemic to Australia. Is there any evidence to suggest that that is not the case of which the experts are aware?

Dr. Brückner

98. I have got no evidence to prove the contrary at this stage.

Dr. McVicar

99. I repeat the same answer – no, there is no evidence to the contrary.

Dr. Wooldridge

100. I have no evidence of that at all.

Australia

101. A couple of questions that I will put to Dr. Brückner. We understand that you have been involved in OIE work for the last few years. Is it your understanding that the 1999 OIE Animal Health Code chapter on import risk analysis gave substantially less emphasis to a quantitative approach to risk assessment than the 1997 version?

Dr. Brückner

102. I have not got the Code with me. Dr. Wooldridge was also involved in that. I think what is more clear now than in 1997 is that it is explicitly said that a qualitative risk assessment is also acceptable, when previously it was not that explicitly stated.

Australia

103. Secondly, do you consider that the scientific advisors engaged by AQIS in the 1999 risk analysis are representative of international expertise in the field of risk assessment in aquatic animal disease, including the management of aquatic diseases.

Dr. Brückner

104. Yes, two of those names are familiar to me so I would agree with that statement.

Australia

105. Just a couple of questions or points on your answers to questions 7 and 8. In your response to the Panel you advised, and I quote, that "no scientific justification could be found in the 1999 risk analysis for the measures relating to consumer-ready salmon product and for product that is not in this form to be processed in approved premises", although these issues were discussed on page 201 of the import risk analysis. You would be aware that in this rebuttal submission, particularly in its comments on responses to Dr. Wooldridge's comments, paragraphs 24 and 61, and the following of our comments on Dr. Wooldridge's, Australia explained the reason for the measures that relate to consumer-ready product with reference to three key factors, and they were that consumer-ready product is less likely to be commercially processed than other forms of product, for commercial reasons, and that this reduces the risk because processing plants generate waste at a higher concentration and volume than do households. Secondly, the commercial processing of consumer-ready product may occur, for example smoking of skinless fillets of salmon, however this would not be expected to generate a significant amount of waste material. Thirdly, premises processing imported product must have appropriate systems for disposal of solid and liquid waste, because this will reduce the likelihood of exposure of domestic fish to disease agents present in such material. Do you agree that these factors justify Australia distinguishing between consumer-ready product and other product in terms of the associated-quarantine risk? And if so, do you consider that Australia's measures represent a valid approach to risk management?

Dr. Brückner

106. This is a tricky one because I try to evaluate this from the veterinary administrator's side of view, and I have read the reasons given, in terms especially of the waste and the possibility of pathogens finding that pathway. I would accept the arguments, but not very confidently. The opinion was that there was much emphasis placed on the perception of the people in the trade on this, rather than a quantitative way of expressing that. I know there were studies done and figures given in terms of the waste and the possibility of finding that in that pathway. In the lack of any counter scientific arguments, I could not disagree with you, but I am not confident to say yes.

Australia

107. In relation to questions 15 and 17, you advise the Panel that you could not find convincing evidence for Australia's further restrictions on size and processing of salmons, but not for other finfish. You are aware that in the 1999 risk analysis Australia identifies four salmon diseases - IHN, ISA, *Aeromonas salmonicida* and *Renibacterium salmoninarum* - in relation to which the consequences of establishment in Australia would have moderate or more serious consequences.

Depending on the types/stage of infection, these agents can occur in the flesh and skin of salmon. You will also be aware that, as explained in the risk analysis, non-salmonids finfish are not generally considered to be significant hosts of these four diseases. There is a negligible likelihood of such fish being infected with IHNV, ISAV or *R. salmoninarum*. For *A. salmonicida*, it is a negligible likelihood of infection, except in farmed marine fish closely associated with infected salmon. Accordingly there was no reason to impose the consumer-ready further processing measures on non-salmonids finfish generally. However, additional controls including measures that pertain to product form, the presentation, processing and certification were imposed on farmed, non-salmonids marine finfish in recognition of the greater likelihood of infection of *A. salmonicida* in these fish. In light of this explanation, do you believe that there is adequate justification for the different measures which Australia has chosen to apply?

Dr. Brückner

108. In the last sentence I said that I felt unconvinced of evidence at that stage, but in the comments received afterwards and the comments from Australia, I am happy with those replies given.

Australia

109. In relation to your answer to question 16, you state that it is reasonable to ask why Australia does not apply the same measures on salmon imports, specifically in relation to the consumer-ready further processing measure, as New Zealand, considering the similar disease status of the two countries. In its response to the Panel's questions, Australia has noted that the measures applied by the two countries are, in fact, very similar. There are some differences which reflect differences in the assessed quarantine risk as between the two countries. These differences in assessed risk in turn reflect differences in the salmonid health status, exposure pathways, the nature of the domestic salmonids industries, and the appropriate level of protection of New Zealand and Australia as documented in Chapters 4 and 5 of the 1999 risk analysis. Do you agree that such differences in key parameters relevant to the assessment of risk and the management of risk would readily justify the relatively small variations between the Australian and New Zealand approaches to control quarantine risk in imported salmon product?

Dr. Brückner

110. In my opening summary remarks I did refer to this, because at that stage I could reasonably ask why Australia did not apply the same measures. But in the documentation that came afterwards you included that risk assessment of New Zealand and you also gave further evidence in terms of this.

Australia

111. Some questions for Dr. McVicar if we could.

Canada

112. If I could just get some clarification from Dr. Brückner on the question before this last one, on the justification for the consumer-ready requirements. Do I understand it, Dr. Brückner, that you have changed your views, your answers?

Dr. Brückner

113. I have not changed my view. I said that in view of me countering it with scientific evidence, I have to agree with our Australian colleague. But I said I do it with hesitance, because my gut feelings do not agree with the difference between the 450 grams and not, and the skin-on, skin-off issue. I have got no scientific evidence to counter it.

Australia

114. The first question is in relation to Dr. McVicar's answers to question 7. In your response to the Panel on this question, you advised that the removal of skin from Canadian salmon would be unlikely to significantly contribute to risk reduction. However, in your response to question 20 you advised, and I quote, "there would not appear to be a major disease risk associated with salmonid skin, but balanced against this is the greatly increased risk that this inedible, low-value material may be disposed of in an unsafe manner prior to cooking". These issues were discussed on page 201 of the import risk analysis. You would be aware that in its rebuttal submission, particularly in its comments on responses by Dr. Wooldridge, Australia explained the reason for the measures that relate to consumer-ready salmon product with reference to the three key factors that I had mentioned before. Do you agree that these factors justify Australia distinguishing between consumer-ready product and other product in terms of the associated-quarantine risk, and if so, do you consider that Australia's measures represent a valid approach to risk management?

Dr. McVicar

115. Yes, as a disease person I recognize that there are certain pathogens which do occur on the surface of fish skin - *Aeromonas* for instance; ISA is another example - and have a preponderance on these areas But taking into account the level of removal of these by appropriate washing and handling, packaging, general processing, etc. the likelihood of significant numbers being still present when the product is exported is actually quite small - these are quite aggressive environments. It is a route of spread and I would, for the agents I have mentioned, in particular, consider that the risk is very small. This was recognized in the European Union regulations requiring only gutting from ISA-infected areas, as an example.

116. Balanced against this, and as indicated in my answer to question 20, is recognition that parts of a fish which are not consumed, which are considered to be of low value, such as fish skin, are liable to be disposed of in an unsafe manner. Really, to accommodate the low level of risk, I can understand why somebody may wish to do that. But if the risk is so low in the first place, then this is what led to my response to question 7 - that it is unlikely to make a significant contribution. If the level of risk is very low in the first place, the removal of the skin to further reduce that will make very little difference.

Australia

117. Yes, in follow-up to an answer from an earlier question - question 30 from the Panel - the Chairman appeared to draw a conclusion from your response that skin was "not a problem in the sense of disease risk". I just wonder, Dr. McVicar, whether you could clarify that the Chairman's comment on evisceration and the form of fish traded relates to commercial practice and not to the issue of disease risk.

Chairman

118. Let me just comment first, please. I was not drawing a conclusion, I was merely trying to clarify what I understood Dr. McVicar to have been saying, so my remark was merely for clarification. It wasn't to indicate that we have any thinking at all on that.

Australia

119. It seemed to us that the response to that question seemed to lose a bit of clarity; whether Dr. McVicar was relating to the commercial practice of how products are traded, or to the issue of disease risks.

Dr. McVicar

120. Yes Mr. Chairman, you specifically asked what I considered were the main routes of trade in product, and that is what I responded to, not to the disease issue, since it is my understanding of the trade in product, rather than the disease.

Australia

121. Finally, just two questions, if I could, to Dr. Wooldridge. You have commented on what you perceive is the subjectivity of Australia's qualitative risk assessment. How would you avoid the problem of subjectivity if sufficient data are not available to permit a quantitative risk assessment to be conducted?

Dr. Wooldridge

122. It is impossible to avoid subjectivity in a qualitative risk assessment.

Australia

123. Just as a follow-up - are you saying that subjectivity is not an element of a quantitative assessment?

Dr. Wooldridge

124. No, that is not what I am saying, but it is easier to reduce it.

Australia

125. Finally, how would you ensure that quantitative data, which may be scarce, are properly representative, given that they may be obtained under conditions that are not representative of a field situation.

Dr. Wooldridge

126. Any risk assessment should use the best information currently available, so I think what you are saying is how do you work out what is the best information available. My answer to that is that you need to get together the experts who know about the particular subject, and in essence ask them which is the most appropriate and best data available. That of course leaves you with a number of additional questions, for example, who are the most appropriate experts to ask; how do you illicit the information with a minimum of bias; if there are contradictory opinions, how do you correlate those into one risk assessment; even if the opinions tend to be similar, but are not precisely the same, how do you correlate those into one risk assessment. These are all very important methodological issues which are all currently the subject of a lot of methodological research. However, the simplest answer I can give today, without going into an awful lot of detail, is that I believe that these can be done using distributions and stochastic modelling.

Kari Bergholm (Panel member)

127. This is a follow-up question just to Dr. Wooldridge, just to get better educated on this complex issue. Would it be possible to use such a risk assessment with parts that are quantitative and parts are qualitative, a combination of qualitative and quantitative, or should it be throughout qualitative or throughout quantitative? If a risk assessment is basically qualitative, would it improve the probability that it is correct if those parts that could be made quantitative where the data is

available - would that be possible, or should assessment be throughout qualitative or throughout quantitative?

Dr. Wooldridge

128. I think that whenever there is quantitative data available, it should be recorded as part of the information gathering exercise and used wherever possible and appropriate. And I do think in a complex risk assessment it is possible, if it is a very long pathway, to actually cut it up into pieces, some of which you may be able to get a quantitative answer to, and other parts of which you may not. And to take this as an example, I do not know precisely what data is available, though I would go back to my point from the original Panel and say that in my experience there is always more data available when you look for it than you thought there was when you start. However, it might be possible that one could do a quantitative release assessment, for example, and a qualitative exposure assessment. As soon as you have any part of the chain being qualitative, it precludes you being able to undertake a complete quantitative risk assessment. But certainly I would strongly advise that if someone wishes to clarify the issues, then they quantify as much as possible.

Australia

129. Mr. Chair, just one further follow up question to Dr. Wooldridge. In the 1999 risk assessment we did use qualitative data when it was available, and ran that past experts to see whether that data was relevant and whether it could be improved or enhanced etc. Does Dr. Wooldridge consider that that is part of this reasonable approach?

Dr. Wooldridge

130. That sounds very reasonable, yes.

Chairman

131. I take it that we have now come to the end of questions and comments from the parties. I don't think the Panel has any further questions at this stage unless my colleagues do. I am going to ask the legal adviser to put the question on the Panel's behalf.

Joost Pauwelyn

132. It seems that everyone agrees that there should be a consumer-ready requirement or something; but what about the specific definition given in Australia's measure, the 450 grams and the skin-off/skin-on? If you compare that specific definition to, for example, the definition given by New Zealand to just require consumer packaging. How would you compare these two definitions, or do you think that the New Zealand definition would meet the same level of protection?

Canada

133. Yes, if I may Mr. Chairman, I am not sure it can fairly be characterized that everyone agrees that there should be some form of consumer-ready packaging. I'm not even sure it can be agreed among the experts, assuming they agree something.

Australia

134. Mr. Chairman, the question I think is very similar to, in fact I think question 32, which we will respond to on Friday.

Chairman

135. But it is addressed to the experts, so we will take it.

Dr. Bruckner

136. As I said, I still feel very uneasy with this whole issue. One could, for instance, ask Australia what is the possibility of people getting the consumer-ready product of 450 grams with skin-on requesting that the skin be removed, if they prefer it that way. What I am trying to say is the possibility of even skin being disposed in waste of what is perceived a safe consumer-ready product, is that a factor or not. So it is coming back to the question that has been asked here, in terms of the comparison of New Zealand. I told Australia that, in view of me countering their scientific arguments, I can't oppose that, but I still feel uncomfortable with the decision.

Dr. Wooldridge

137. I'm not quite sure that I'm fully *au fait* with what the question is asking, but I would like to say I have no problem with the idea of bringing in this issue of consumer-ready products. I think it is relevant to consider this and any other issue which might be appropriate when doing a risk assessment. I think I actually understood what Australia was getting at and why they were doing it, in that it might well be the case that a consumer-ready product is treated differently to a non-consumer-ready product. I was unhappy that there was no evidence that convinced me that that was in fact the case. And I actually think that the people from whom evidence of that might be available did not appear to have been consulted. Unless I missed it somewhere in the rather large amount of paperwork. But I wasn't convinced by those parts which I studied closely.

Kari Bergholm

138. May I have a follow up question, because I still think that something is missing here, at least for my understanding. There is still missing, for my understanding, some elements here. If we accept that the requirement of consumer-ready packages is justified, what is the justification to put the limit of 450 grams? Is there a scientific justification to put the limit of 450 grams, instead of 1 kilograme, or 200 grams, or from where comes this 450 grams? Does that limit reduce the risk in a significant way? Then I have a comment to Dr. McVicar, when you said that skin is a low level product that is discharged. In my country, some skin is considered as a special delicacy. So if a product is without skin, it is a low-level product in my country, so the markets are different. Tastes are different. But going back to my question, it is really what is the scientific justification for this 450 grams result? We already have your answer as to what is the significance of skin or no-skin, but for this 450 grams, that is still …

Chairman

139. This is for the experts. Dr. McVicar?

Dr. McVicar

140. Can I respond to that? As I said in my written response to the questions, I cannot see a cut-in point or a cut-out point at 450 grams which would justify that particular aspect from a disease point of view. Diseases which are present through the life of the fish will be as present beyond the 450 grams as they were under, and may manifest themselves under stress conditions at any point during the life of a fish, if they are persisting in a low-level state so they can reproduce. As I said, and I speculated, maybe wrongly, possibly because of my involvement in the risk analysis with Australia, possibly justifiably, that I could see that some logic that this would be a consumer-ready product in a size

which would be consumed and directly cooked, that that was an assumption, which I think Australia should respond to.

141. The second point about skin, if I could just briefly mention it. I am aware that skin, for instance in Iceland, is a very valuable leather product and is treated as such as well, so it is not exclusively low value, and I accept your comments of my ignorance about the Finnish habits as well.

Chairman

142. No doubt Australia will wish to come back to that point when we get to the meeting on Friday but do you wish to …

Kari Bergholm

143. But I would like to hear the opinion of the other experts on my question, if they have any.

Dr. Wooldridge

144. Yes, my understanding was that the 450 grams was the size of the portion, not the actual size of the fish. Consequently it may be, though it is to me not obvious from the information we have been given, but it may be that there is somewhere some evidence that that is a typical size which a consumer would cook in one go, or treat in one way that is different to another. Now, I didn't find that evidence, but that isn't to say that it doesn't exist. I think if it does exist, well it's a shame it isn't shown in there, but my understanding is that this is not a case of the amount of infectious agent potentially present in the portion size, but that it is a case of what the exposure pathway following on from different portion sizes might be. So the fact that the bacterial or parasitalogical or viral load is not affected by the portion size, except as far as a unit load is concerned, but that it is an exposure pathway problem; that Australians are saying, as far as I understand it, that if you have a portion that somebody will cook in a kitchen as is, they are going to treat bits and pieces of it in a different way, so the exposure pathways will be different.

Chairman

145. I'm not sure that I gave Dr. Brückner the opportunity to respond.

Dr. Brückner

146. My perception is the same as that of Dr. Wooldridge. I think in the Australian 1999 IRA there was an annex of a letter from one of the traders, and I have the same idea that it is also the size being preferred by the trade.

Australia

147. If I could just clarify the points, basically I think we are in close agreement with what Dr. Wooldridge and Dr. Brückner have said, that I think it comes down to perhaps two elements. One is the definition, if you like, and that was a commercial matter based very heavily on advice that we got on consumer behaviour and the likelihood that that is the amount of product that the consumer would cook and eat themselves. The second element then is the factual basis for the measure and that gets to those three facts that I mentioned, that that sort of portion would be likely to be consumed by a householder in its entirety. And if it was processed, then again the waste would be minimal. I think that perhaps gets to one of the points that Dr. Brückner raised earlier. And then the third element that there is resort for the further processing in certified premises.

Chairman

148. Can I just clarify that the concern then is about waste disposal, not from domestic consumption but from commercial large-scale consumption?

Australia

149. The disposal is certainly in commercial processing, the disposal there is the greatest concern. These other elements, that the consumer-ready size is 450 grams, limits then the wastage in those other areas. So I think it is those three factors together that lead us to the position.

Chairman

150. Do you want to add anything further or …

Australia

151. Just to put into the record, if I could Mr. Chairman, that it is in fact paragraph 68 through 71 of our comments on Dr. Wooldridge's comments that I think do go to this question of the definition of consumer-ready product. But we will come back to this certainly on Friday.

Canada

152. Thank you, Mr. Chairman. I think you just asked the question that I was going to be seeking clarification of. Having read page 201 of the 1999 Report to which Australia referred, it was my impression as well that the concern that the consumer-ready requirement was trying to address was commercial processing, and having read the exposure pathway assessments throughout the 1999 Report, that was also my impression, because of the conclusions drawn regarding other pathways. I think I will just return to that on Friday rather than pursuing it here.

Chairman

153. Well, it does seem that we have in that case exhausted the process this afternoon. I will give the experts the opportunity of making any final closing remarks that they feel that they wish to make, to summarise what they have said, or to highlight any particular points which they think are important, and make it as long or as short as you wish. Dr. Brückner.

Dr. Brückner

154. I don't think I've got anything to add to what has been said, but I think in retrospect, when we look at this dispute in later years, and I think Dr. Wooldridge will agree with me, I can't recall any previous incident where an issue in terms of the SPS Agreement, questioning the relevance of a qualitative versus a quantitative and the place of that in future decision-making, has been debated so intensively. Maybe it is good that it came to the fore. That's just that. I hope this dispute gets settled and good luck.

Chairman

155. Thank you very much.

Dr. McVicar

156. Thank you, Mr. Chairman. I have written down just a few comments earlier on just what I feel would summarize my position as I see it. I won't repeat my earlier statements, quite obviously,

but it is evident to me that as a practical scientist there will always be scope for disagreement on what is considered to be an appropriate level of protection. I really equate that with what I would call a precautionary approach, as opposed to a less precautionary approach, and if you look at this at the extremes, I think you can see where I am coming from. If you take the one extreme of precautionary approach you do nothing until you've proved the negative. That's impossible and not permitted under trade rules. Or the opposite extreme, you allow everything until you get a positive consequence, in which case it is too late by that time. It is an obvious statement that the stances, and what has been deemed appropriate measures; clearly different approaches are being taken by the two parties here. From a scientific point of view, the differences evident in the hazard identification and risk assessment sections of the 1999 documents are not major, and probably do not significantly influence the conclusions arising from that. But as the scientists appear to be in general agreement, it is in the translation of the science into policy that, it seems to me anyway, the disagreement then appears.

157. I've heard criticism that more quantitative analysis was not carried out, and firstly I don't think this is required, and I think we have covered that point already. And, secondly, even a full quantitative analysis might resolve differences in view about whether a particular measure is warranted or not, or might not in fact resolve differences. An example, from a different view completely, and it's a serious example: the risk of an individual being struck by lightning can be quite accurately measured, but this doesn't stop people partaking in outdoor activities. A much lower level of risk can be calculated from BSE, but this was sufficient to actually have beef banned from the UK throughout the world. So, it is down to perception of risk, and perception in the individual, and it becomes a cultural and political aspect thereafter, which is void of science. I am not advocating a uniform numerical kick-in point for imposition of risk reduction measures. That clearly is impossible. I have no answer on the question how to define what is an acceptable level of risk and, as I have said earlier on, a negotiated agreement seems to be the only sensible route to take on this.

158. I have been amazed at the amount of effort and paper this exercise has generated, and in the time available it has been difficult for me to seek out and remain on top of the issues. Particularly in the latter stage, I have had an advantage over some of my other colleagues and experts here, in that I was familiar with the Australian risk assessment documents while they were being developed. I have considered all of the risk assessments produced by Australia in relation to SPS and OIE requirements and have been satisfied that they meet the criteria for qualitative assessment. As a fish disease scientist who has also been dealing with legislation, I could follow the logic as presented by Australia in the hazard identification risk assessment sections of each of the risk assessments. Inevitably for such a major piece of work, which has been produced in a very short time, there are areas which could be improved, but I have not detected problems which I believe could affect the main conclusions. When it comes to the risk management sections, I have less to say as a scientist, for obvious reasons. But it is disappointing that so little information is available on the contribution of each of the risk reduction measures, (i.e. their efficacy) in achieving a reduction in risk to meet Australia's ALOP. The requirement to remove skin is an example, and we have spoken about this earlier on today. I don't mean this as a criticism of Australia's IRAs as such, but as more a plea for more real research done in an area of science on a worldwide basis. The lack of good data on which to base decisions is a thread running through the whole of this discussion we have had. The question facing the Panel is what to do in the interim period, while this information is actually being generated.

Chairman

159. Thank you. Dr. Wooldridge.

Dr. Wooldridge

160. One of the big issues, I would agree, that seems to have been discussed in the written and the spoken submissions, is the issue of qualitative versus quantitative risk assessments. I believe that attempting to quantify risk assessments clarifies issues greatly. It clarifies a number of issues. It

certainly points up where you do not have adequate data, and provided you are thorough enough in collecting the data that is currently thought to be the best, it can give you a good guideline as to the kind of levels of probability that a risk might be posing. Having said that, I agree there is no requirement to undertake a quantitative risk assessment. However, there are two big worries that I have regarding this particular qualitative risk assessment, and one of them I would apply to qualitative risk assessments in general. The one, as I have already said, that I have about this particular risk assessment is the exposure issue. I am not convinced that it was dealt with in a full and appropriate manner. However, if it had have been, in my opinion, dealt with fully, i.e. the general chapter on exposure had been brought in and discussed with regard to each of the particular diseases and the overall likelihood of establishment, then as I said in my answers, I believe that the likelihood of establishment would probably have come out lower in most cases. I say "probably", because having not done it I can't be sure, however, so I don't know whether that would necessarily give a different level of assessed risk. But what we are dealing with here is what is acceptable, and it might well have been, and that would still have been perhaps Australia's prerogative to decide that that lower level was still unacceptable. Therefore what I'd like to see is the highest quality risk assessments possible, regardless of what is considered to be the acceptable level of risk, because muddling the two up, and I think we are in danger of doing that here, means that one tends therefore to be less clear in actually assessing the risks. I feel that maybe there is a worry that if you actually reduce the risks to the level which they really might be, then they would look so small that one couldn't possibly justify applying certain measures. Nevertheless, I don't agree with that. I think it would still be the prerogative of Australia to set its own acceptable level of risk. I am just disappointed that the assessed risk wasn't actually dealt with slightly more fully from that point of view.

161. The other problem was the over-complexity in the terms used to actually specify the qualitative levels. It is part of the same issue really. I would have preferred to see a less specific attempt to discriminate. Something that simply said this is low risk, but nevertheless this low risk is still too high to fit under our acceptable level. From a methodological point of view I would have been happy with that. I fear it was an attempt to be over-complex here that caused me problems. I am conscious that that might have actually not necessarily clarified it terribly much, but I guess what I'm trying to say is I want to see good risk assessment separated from what people believe to be acceptable levels of risk, and then the two things should be looked at. But I don't think trying to be very precise on a qualitative assessment is the way to do it.

Chairman

162. Thank you very much. Well, as I indicated earlier the transcript of this meeting will form part of the attachment to the report at the end of the day, so everything that has been said will be reflected in that way. But if the experts feel that they wish to clarify in writing or confirm or elaborate on anything that they have said, could they please let us have that within the next two days. Friday morning in other words, so that we can deal with that before the end of the formal meeting.

Australia

163. In Dr. Wooldridge's final comment, she mentioned in introducing her final points, that there were two points she wished to make, one which was specific to qualitative risk assessments, Australia's 1999 risk assessment, the other which was a more general criticism of them. I just wondered, was it the second point about the complex terms, is that a general criticism of ….

Dr. Wooldridge

164. Sorry, yes, I mean as I said earlier, you cannot avoid being subjective, I don't believe, when you are doing a qualitative risk assessment. And given that, I just think it is a big error to try and become too precise, too complex. I think if you can differentiate between a high, a medium, a low and a negligible risk, I don't actually think in a qualitative assessment you can go further than that. I

think to attempt to do so spoils, in my opinion completely ruins, what might otherwise be a reasonable way of looking at the risks.

Chairman

165. Well, I think that brings the substance of the meeting to a conclusion. I would just like to make one procedural timetable suggestion to the parties to see how this would suit them. Tomorrow afternoon we are scheduled to meet with the parties and the third parties for a session that might not turn out to be a very long session. We wonder whether the parties might like to take the opportunity, after the third party session is finished, to then go into the meeting which we had scheduled for Friday, and just deliver the formal statements tomorrow afternoon, so that you then have time after that to consider what your questions are going to be to each other. Then we would meet on Friday morning to take those questions. I don't know whether you are in a position to do that, but it might at least give you a break between the two parts of the meeting if we advance the formal statements to Thursday afternoon. Any views on that?

Canada

166. I am happy to give you Canada's views first, Mr. Chairman. We would prefer to deliver our prepared statement on Friday after we have had a chance to fully consider the questions you have put to us today, what we have heard today in addition, and the third parties' comments.

Australia

167. That would be Australia's position also. We would prefer to stick with Friday morning.

Chairman

168. That's alright. We thought we could probably start earlier on Friday. Yes, lets contemplate that one. Because the real reason is that we are in such a tight time-frame we need time ourselves to consider the outcome of the whole meeting, so we really want to have the whole of Friday afternoon, so we would like to finish the session on Friday morning. Formal statements will take a certain amount of time, but perhaps if we were to start a little earlier, say 9.15 am, would that suit? Good, with a view to trying to complete the session with the parties in the morning.

169. Thank you very much I think it only remains now for me to record the Panel's thanks to the three experts for all the work that they have put into this and for very kindly bearing with us during this afternoon's session. And thank you very much for responding so promptly and so comprehensively to everything that has been put to you. Thank you very much, and on that note I think we are now adjourned.

ATTACHMENT

CANADIAN DELEGATION LIST

Matthew Kronby	Head of Delegation Counsel Trade Law Division Department of Foreign Affairs and International Trade
Hélène Belleau	Trade Policy Officer Technical Barriers and Regulations Division Department of Foreign Affairs and International Trade
Iola Price	Director Aquaculture and Oceans Science Branch Fisheries and Oceans Canada
Gilles Olivier	Head Molluscan Development and Fish Health Section Science Branch Fisheries and Oceans Canada
Ken Roeske	Chief Trade Policy Fisheries and Oceans Canada
Marnie Ascott	Trade Analyst International Affairs Division Canadian Food Inspection Agency
Heather Murphy	Paralegal Trade Law Division Department of Foreign Affairs and International Trade
Brendan McGivern	First Secretary Permanent Mission of Canada to the United Nations and the World Trade Organization
Lynn McDonald	Third Secretary Permanent Mission of Canada to the United Nations and the World Trade Organization

AUSTRALIAN DELEGATION LIST

Stephen Deady	Heat of Delegation Assistant Secretary, WTO Branch Department of Foreign Affairs and Trade
Joan Hird	Director Disputes Investigation and Enforcement Unit Department of Foreign Affairs and Trade
Digby Gascoine	Director Policy and International Division Australian Quarantine and Inspection Service
Sarah Kahn	Director Animal Quarantine Policy Branch Australian Quarantine and Inspection Service
Peter Beers	Head Aquatic Animal Section Animal Quarantine Policy Branch Australian Quarantine and Inspection Service
Phil Sparkes	Minister and Deputy Permanent Representative Permanent Mission of Australia to the WTO
Simon Farbenbloom	First Secretary Permanent Mission of Australia to the WTO
Dara Williams	Third Secretary Permanent Mission of Australia to the WTO

ANNEX 2

Revised Working Procedures

The Panel will follow the normal working procedures of the DSU where relevant and as adapted to the circumstances of the present proceedings. In particular,

1. The Panel will meet in closed sessions.

2. The deliberations of the Panel and the documents submitted to it shall be kept confidential. For the duration of the Panel proceeding, the parties to the dispute are requested not to release any papers or make any statements in public regarding the dispute, except as provided for in paragraph 3 of Appendix 3, ie.,

> "...Nothing in this Understanding shall preclude a party to a dispute from disclosing statements of its own positions to the public. Members shall treat as confidential information submitted by another Member to the panel which that Member has designated as confidential. Where a party to a dispute submits a confidential version of its written submissions to the panel, it shall also, upon request of a Member, provide a non-confidential summary of the information contained in its submissions that could be disclosed to the public."

3. Before the substantive meeting of the Panel with the parties, both parties to the dispute are expected to transmit to the Panel written submissions and subsequently written rebuttals in which they present the facts of the case, their arguments and their counter-arguments, respectively.

4. At its substantive meeting with the parties, the Panel will ask Canada to present its views first. Subsequently, and still at the same meeting, Australia will be asked to present its point of view.

5. Parties shall submit all technical and scientific evidence to the Panel no later than in their rebuttal submissions, unless in response to subsequent questions by the Panel. Exceptions to this procedure may be granted upon a showing of good cause. In such cases, the other party shall be accorded a period of time to comment, as appropriate.

6. In the interest of full transparency, the presentations, rebuttals and statements will be made in the presence of both parties.

7. Both parties should provide a copy on diskette (Word or similar) together with the printed version (10 copies) of their submissions on the due date.

8. Written submissions and rebuttals shall be provided at the latest by 5 p.m. on the due date, (except if such a date falls on a Friday in which case the material has to be delivered by 12 noon at the latest) so that there is still time for distribution to the Panel members on that date. Moreover, each party's written submissions, be they first submissions or rebuttals, (and responses to questions, if any, put by the Panel) will be made available to the other party by each of the parties involved at the same time as they are made available to the Panel.

9. The working language for the submissions and the meeting with the parties will be English only.

10. If necessary, the Panel will put questions to the parties to clarify any point that is unclear. Answers to questions shall be submitted in writing by the date specified by the Panel.

11. Any material submitted shall be concise, as brief as possible and limited to the only question of relevance in this particular procedure: implementation.

12. To facilitate the drafting of the report as far as possible in the extremely limited time available to the Panel, parties are requested to submit an executive summary of their submissions and rebuttals.

13. The parties to this procedure have the right to determine the composition of their own delegations. This may include private counsel and advisers. The parties shall have responsibility for all members of their delegations and shall ensure that all members of the delegation, as well as any other advisors consulted by a party, act in accordance with the rules of the DSU and the working procedures of this Panel, particularly in regard to confidentiality of the proceedings.

ADVICE FROM EXPERTS

14. The Panel will seek technical and scientific advice from experts. In view of the short time available for the proceeding, the Panel, after consulting the parties, already selected at an early stage in the proceedings the following three individuals: Drs. Gideon Brückner, James Winton and Marion Wooldridge. The Panel may consider it appropriate, in particular in light of the issues raised in the parties' submissions, to seek advice from other individuals. If so, the parties will be provided with an opportunity to make known any objections in respect of specific candidates before the Panel finalizes its selection of additional experts.

15. The Panel will prepare specific questions for the experts. The parties will have an opportunity to comment on the proposed questions, or suggest additional ones, before the questions are sent to the experts.

16. The experts will be provided with all relevant parts of the parties' submissions on a confidential basis.

17. The experts will be requested to provide responses in writing; copies of these responses will be provided to the parties. The parties will have an opportunity to comment on the responses from the experts.

18. A meeting with the experts will be held prior to the meeting with the parties. The parties will be invited to be present at the meeting with the experts, and provided the opportunity to immediately comment on the statements of the experts.

TREATMENT OF INFORMATION DESIGNATED AS CONFIDENTIAL

19. Any information that has been designated as confidential by the party submitting it and that is not otherwise available in the public domain shall not be disclosed in the report of the Panel. However, the Panel may make statements of conclusion drawn from such information without referring to the author of the information.

20. After the circulation of the Panel report or, in case of an appeal, after the circulation of the Appellate Body report, the Panel, Secretariat staff, parties and third parties shall return any information that has been designated as confidential to the party that submitted it, unless the latter party agrees otherwise

The Panel may amend these working procedures at any time. In such circumstances, the Parties will be consulted and immediately informed of the changes.

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