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Item 6.4 of the provisional agenda*

REPORT OF THE AD HOC TECHNICAL EXPERT GROUP ON GAPS AND INCONSISTENCIES IN THE INTERNATIONAL REGULATORY FRAMEWORK IN RELATION TO INVASIVE ALIEN SPECIES
(*Auckland, New Zealand, 16-20 May 2005*)

I. PROCEDURAL REPORT

1. The expert group met from 16 to 20 May 2005 in Auckland, New Zealand.

2. Twenty-three participants were present, including experts selected from among nominations by Parties to the Convention (Argentina, Australia, Bahamas, Cameroon, Canada, China, European Community, Hungary, Japan, Poland, St. Lucia, Thailand, United Republic of Tanzania), and observers (New Zealand, United States of America, European and Mediterranean Plant Protection Organization, Global Invasive Species Programme, Interim Commission on Phytosanitary Measures, International Plant Protection Convention Secretariat, IUCN – The World Conservation Union, North American Plant Protection Organization, OIE – World Organisation for Animal Health, Secretariat of the Pacific Regional Environment Programme). A full list of the participants is contained in annex I. The Bureau of the Subsidiary Body on Scientific, Technical and Technological Advice was represented by the expert from Thailand.

3. The meeting was opened by a representative of the Executive Secretary to the Convention on Biological Diversity at 9 a.m. on Monday 16 May 2005. A representative of the Government of New Zealand welcomed participants. The secretariat then explained the purpose of the meeting, its mandate, and the expected outputs.

4. The meeting adopted its agenda on the basis of the provisional agenda proposed by the Executive Secretary in document UNEP/CBD/AHTEG-IAS/1/1.

5. The meeting elected Mr. John Hedley of New Zealand as its Chair, and Mrs. Mary Fosi Mbantenkhu of Cameroon as its Rapporteur.

6. The work was undertaken entirely in plenary.

* UNEP/CBD/SBSTTA/11/1.

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7. The substantive work of the meeting occurred under agenda item 3. Under agenda item 3.1, the meeting was requested to further clarify gaps and inconsistencies in the international regulatory framework for invasive alien species. The meeting had, as a starting point for this agenda item, document UNEP/CBD/AHTEG-IAS/1/2 prepared by the Executive Secretary. The meeting discussed this agenda item at length, going through each element of paragraph 7 of decision VII/13, and clarified a number of specific gaps and inconsistencies in the international regulatory framework for invasive alien species. The group noted that the list it had identified may not be exhaustive, but covers what are believed to be the most important gaps and inconsistencies.

8. After some initial consideration of agenda item 3.1, subsequent discussions in the meeting considered simultaneously the items under agenda item 3.1, agenda item 3.2 (development of practical options on how to address gaps and inconsistencies in the international regulatory frameworks), and agenda item 3.3 (identification of appropriate standard-making authorities, if any, or other appropriate options in the event that the potential need for standards or other measures is identified).

9. The group identified specific possible actions for addressing the identified gaps and inconsistencies in the international regulatory framework, and also identified some important considerations that it considered relevant to some or all of the gaps. Consequently, the group made a number of general observations and recommendations in addition to developing options for how to address specific gaps and inconsistencies in the international regulatory framework.

10. In discussing the gaps in the international regulatory framework for invasive alien species, the AHTEG noted that other expert meetings under the Convention on Biological Diversity (e.g., the Workshop on the Joint Work Programme on Marine and Coastal Invasive Alien Species scheduled for 27 to 29 June 2005) or elsewhere may address particular pathways in more detail. The results of such meetings may also be useful for SBSTTA as it considers how to move forward in its consideration of gaps and inconsistencies in the international regulatory framework. Furthermore, some pathways may warrant further study or analysis prior to determining which practical actions are most appropriate.

11. Regarding agenda item 4 on other matters, two participants noted that, in relation to the broader programme of work on invasive alien species under the Convention on Biological Diversity, the outstanding procedural and substantive issues related to decision VI/23* should be re-examined by the Conference of the Parties. Another participant also noted that ambiguity regarding that decision is a potential impediment to progress in other international fora on issues related to invasive alien species.

12. The meeting adopted the substance of its draft report, and requested the Chair, the Rapporteur, and the secretariat to make final editorial changes and other minor changes as necessary.

13. The participants thanked the Government of New Zealand for hosting the meeting.

14. The meeting was closed at 3 p.m. on Friday, 20 May 2005.

* Regarding decision VI/23, one representative entered a formal objection during the process leading to the adoption of this decision and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324). This footnote applies to all subsequent references to decision VI/23 in this report.

II. SUBSTANTIVE REPORT

15. This substantive report of the meeting of the Ad Hoc Technical Expert Group on Gaps and Inconsistencies in the International Regulatory Framework in Relation to Invasive Alien Species consists of a summary of main conclusions (section A), general observations and recommendations (section B), and analysis of specific gaps and inconsistencies in the international regulatory framework (section C). A list of acronyms used in the report is found in annex II.

A. Main conclusions

16. Actions taken to address invasive alien species need to be taken at the right level(s), which might be international, regional, national and/or sub-national. Regional (including sub-regional) actions may be particularly appropriate in many cases.

17. In many cases, problems are not caused by gaps in the international regulatory framework, but actually lie with inadequate implementation at national level.

18. Gaps in the international regulatory framework do not necessarily limit the ability of governments to address such gaps at national level.

19. For most pathways for the introduction and spread of invasive alien species, the most important factor influencing implementation of article 8(h) is national capacity.

20. Collaboration among international bodies and instruments is important in the context of addressing issues related to invasive alien species.

21. A significant general gap in the international regulatory framework relates to lack of international standards to address animals that are invasive alien species but are not pests of plants under the International Plant Protection Convention. Some of the specific gaps identified in this report, including in particular various conveyances as pathways for invasive alien animals, could be viewed as subsets of this broader issue. Options to deal with this general gap include:

(a) Expansion of the mandate of the World Organisation for Animal Health (OIE) beyond a limited number of animal diseases;

(b) Development of a new instrument or binding requirements under an existing agreement or agreements such as the Convention on Biological Diversity or other appropriate frameworks;

(c) Development of non-binding guidance.

22. Further consideration of these options is appropriate, and should involve relevant international bodies and instruments.

23. Other major gaps in the international regulatory framework relate to hull fouling and civil air transport. For both of these gaps, relevant international organizations are in the process of addressing the issue of invasive alien species to varying degrees.

24. Specific gaps and inconsistencies were also identified for particular aspects of the following pathways:

- Aquaculture / Mariculture
- Ballast water
- Military activities
- Emergency relief, aid and response
- International development assistance
- Scientific research
- Tourists
- Pets, aquarium species, live bait and live food
- Biocontrol agents
- *Ex-situ* animal breeding programmes

- Incentive schemes (including carbon credits)
- Inter-basin water transfer and canals
- Unintended protection of invasive alien species
- Inconsistency in terminology

25. Specific actions have been proposed for each of the above gaps and inconsistencies, often involving the following:

- Implementation of existing international agreements
- Regional approaches
- Action by national government agencies
- Collaboration among government agencies
- Collaboration among international bodies and instruments
- Sharing of best practices
- Development of codes of practice
- Education and public awareness

26. The AHTEG noted that at national level, Governments have responsibilities related to export of species that may invade neighbouring states. Also, actions or inactions at national level may result in unintentional introductions of invasive alien species into other States.

B. General observations and recommendations

27. The AHTEG made a number of general observations and recommendations in order to clarify the context within which gaps and inconsistencies, and associated possible solutions, should be considered and addressed. Many of these observations and recommendations are cross-cutting issues relevant to some or all of the gaps identified by the AHTEG.

1. The scope of the term "alien species"

28. The issue of alien species is not limited only to movement of species between countries, but may also be relevant to movement of species within countries. The IPPC, for example, uses the term "areas", which can be part of a country, an entire country, or parts of several countries. Thus, it was noted that the in-country movement of a native species into an area in which it is not naturally present should be addressed as part of considerations related to alien species, primarily at national level.

29. Similarly, the movement of a native species which has been subject to selective breeding or other processes that has altered its genetic characteristics, should also be addressed as an IAS issue. It was noted that the decisions of the Conference of the Parties do not always refer to both alien species and alien genotypes, which might incorrectly imply that the latter are not always covered.

2. Standard setting

30. The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) enables sanitary and phytosanitary measures to be taken, in the context of trade, to protect human, animal or plant life or health, provided that those measures either conform to international standards or are scientifically justified on the basis of assessment of risks. The SPS Agreement recognizes international standards developed by relevant international organizations, in particular standards established under the 1997 International Plant Protection Convention (IPPC), the World Organisation for Animal Health, or the Codex Alimentarius Commission.

31. There is a lack of formal standards set at the international level to deal with some pathways, in many cases because there is no standard setting body with a mandate to develop SPS-recognized standards. In particular, there is a general gap in relation to animals that are invasive alien species but are

not marine, 1/ aquatic or terrestrial pests 2/ of plants under the IPPC (e.g., snails, snakes, rats, birds, ants, fish, etc., which are not directly or indirectly injurious to plants in a particular case). Some of the specific gaps identified by the AHTEG could be viewed as subsets of this broader gap.

32. Controls on most pathways for invasive alien species have to be implemented at the national level, and international standards do not in themselves constitute controls. Furthermore, international standards are not the only way to provide a framework for national measures, as these can be provided in a variety of ways by a wide range of organisations. International standards do, however, have a number of potential benefits:

(a) National measures based on international standards developed by standard-setting bodies, recognized by the SPS Agreement or the SPS Committee, are presumed to be consistent with the provisions of the SPS Agreement.

(b) Standards are likely to result in greater harmonization of measures at the international and national level, reducing compliance costs.

(c) Standards may be more likely to be implemented than other forms of guidance.

33. Potential ways to address the lack of standards for animals which do not qualify as pests of plants under the IPPC that could be investigated include:

(a) Expansion of the mandate of the World Organisation for Animal Health beyond a limited number of animal diseases;

(b) Development of a new instrument or binding requirements under an existing agreement or agreements such as the Convention on Biological Diversity or other appropriate frameworks;

(c) Development of non-binding guidance.

34. Further study may be appropriate in order to provide a more definitive assessment of whether and how to address this lack of international standards for animals that are invasive alien species but do not qualify as pests of plants under the IPPC. It will be important to weigh the benefits and costs of creating standard(s) and/or a new authority or instrument. A discussion convened under the auspices of the Convention on Biological Diversity involving relevant international bodies and instruments (e.g., CBD, IPPC, OIE, FAO, WTO) may be appropriate in order to facilitate such study.

3. Capacity-building and awareness

35. In relation to most pathways for invasive alien species, the most important factors influencing implementation of article 8(h) are national capacity for implementation and awareness of the need for action. Addressing gaps at the international level can in some cases help to facilitate national implementation of measures to address invasive alien species, in particular for Governments that have limited capacity, and depend in part on international or regional frameworks as guidance for national implementation. Nevertheless, addressing those gaps may have little impact if awareness and capacity for implementation at national level are limited.

36. Given this, the AHTEG emphasized the need for capacity building efforts (including technology transfer, training, etc.) and support to awareness programmes as a high priority.

4. Information-sharing

37. Information-sharing is a practical mechanism that can help to address many gaps in the international framework for invasive alien species. For example, sharing of experiences can serve to raise awareness of approaches for addressing invasive alien species, and can serve as the basis for development

1/ The AHTEG noted that although the scope of the IPPC is all types of plants, implementation of the IPPC in many countries does not cover marine plants.

2/ The IPPC defines a pest as "any species, strain or biotype of plant, animal or pathogenic agent [directly or indirectly] injurious to plants or plant products".

of regional or international approaches if appropriate. More generally, dissemination of case-studies; development and dissemination of best practices (e.g., the manuals that are proposed for development under GISP, and best practices disseminated through the Inter-American Invasives Information Network); development of early warning systems; development of global, regional or national alert lists; and other forms of information-sharing mechanisms can help to build understanding and capacity. The importance of these types of mechanisms has been identified by the Conference of the Parties (e.g., paragraphs 27 and 28 (f) of decision VI/23), but there has not been effective implementation. In this regard, the group emphasized the constraints resulting from lack of resources, and recognized the potential role of the clearing-house mechanism and other information-sharing mechanisms.

5. Liability

38. The existence (or lack thereof) and nature of liability regimes for damages caused by invasive alien species may be an important issue. Liability regimes, depending on their formulation, could have positive and negative implications for addressing the issue of invasive alien species. The AHTEG did not have the expertise to fully address the issue, but noted that it may warrant further consideration, and recommends that it be raised at the Experts Meeting on Liability and Redress under the Convention – Article 14(2), that is scheduled for October 2005.

6. Precaution

39. The texts of some international agreements contain language related to precaution in decision-making. In that regard, the AHTEG noted that:

(a) There are various interpretations of precaution in the extensive literature on the subject;

(b) Contradictions could arise in the legal interpretation, for particular cases, of when a national measure is justified or not;

(c) Since capacity to resolve uncertainties varies widely among countries, application of precaution in decision-making will be very case-specific;

(d) International guidance to develop a common understanding of the use of precaution in decision-making may be useful.

7. Regional approaches

40. It was agreed that regional approaches can provide opportunities to address issues on invasive alien species. First, alien species seldom respect national borders, and regional approaches may be the most appropriate level at which to address particular issues. Second, due to capacity limitations, regional approaches allow pooling of resources and expertise, and increased efficiencies. For developing countries, cooperation with other countries can help alleviate some resource constraints.

41. At the same time, however, regional developments may result in removal of national border controls which can serve to control movements of invasive alien species. In addition, taking actions at regional level may be more difficult due to legal considerations and the need for coordination.

42. It was noted that the term “regional” should be regarded in a flexible way, as regions may be defined in many ways including politically (e.g. members of a particular convention or agreement) or biogeographically. Within politically defined regions, there may be sub-regions as well. As an example, implementation of the NEPAD environment action plans is divided amongst 5 sub-regions in Africa, and each will address the issue of invasive alien species in their respective sub-regional environment action plans. In addition, many conventions have regional bodies (and in some cases sub-regional groupings within the regions), such as the regional organisations under the IPPC.

43. The AHTEG noted that any actions taken to address invasive alien species need to be taken at the right level(s), which might be international, regional, national and/or sub-national.

44. In addition to geographic regions, there is value in having cooperative arrangements between countries facing similar issues, such as between small island developing states (e.g., Palau has developed a strategic approach to alien species that is modelled on an approach developed in the Bahamas).

8. Responsibilities as exporting countries

45. Parties should view their responsibilities for addressing invasive alien species not only from their perspective as importers, but also from their perspective as exporters.

46. Under Article 3 of the Convention on Biological Diversity, States "have…the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction". A range of ways in which Parties might, as appropriate, address those responsibilities were identified, including, as examples:

(a) Making information available on species which are being exported (e.g., via internet-based mechanisms such as the clearing-house mechanism);

(b) Notifying potential importing countries of relevant information about particular species that may be invasive (e.g., through alert lists);

(c) Controlling exports where requested to do so by the Government of the importing country, where that country does not have adequate controls in place itself;

(d) In exceptional circumstances, refusing to export the species.

9. Collaboration

47. Collaboration among international bodies and instruments is important, particularly among the Convention on Biological Diversity, IPPC, World Organisation for Animal Health, ICAO, IMO and other instruments that play a key role in relation to invasive alien species. Some specific areas where collaboration is particularly important are identified in the context of the gaps discussed in this report.

48. Collaboration between the secretariat of the Convention on Biological Diversity and other secretariats, including through joint work plans or other means as specified in decisions of the Conference of the Parties (e.g., paragraph 4 of decision VII/13), is an important activity for the secretariat. For the case of standard-setting bodies, for example, there is a joint work plan between the Convention on Biological Diversity and IPPC secretariats, and both the IPPC and the Convention on Biological Diversity have incorporated each others' expertise in relevant meetings in their respective work programmes. Similar collaboration with the World Organisation for Animal Health may also be appropriate. In addition, the Secretariat of the Convention on Biological Diversity is seeking observer status in the SPS Committee and other committees under the WTO, as requested by the Conference of the Parties (see decisions VII/13, VII/26, VI/20). It is important that adequate resources are available within the secretariat of the Convention on Biological Diversity to deal with the issue of invasive alien species.

49. Close collaboration at a national level between the agencies involved in different conventions and sectoral areas is also necessary. For example, collaboration between environment agencies and agencies dealing with agriculture, forests, fisheries, oceans and transport is vital for effective prevention and management of invasive alien species. One aim of such collaboration at national level should be to ensure that national Governments raise invasive alien species issues at relevant international fora.

C. Specific gaps and inconsistencies

1. Conveyances as pathways for invasive alien animals

50. For the case of animals that are invasive alien species but are not marine, 3/ aquatic or terrestrial pests 4/ of plants under the IPPC (e.g., snails, snakes, rats, birds, ants, fish, etc., which are not directly or

3/ The AHTEG noted that although the scope of the IPPC is all types of plants, implementation of the IPPC in many countries does not cover marine plants.

4/ The IPPC defines a pest as "any species, strain or biotype of plant, animal or pathogenic agent [directly or indirectly] injurious to plants or plant products".

indirectly injurious to plants in a particular case), there is a general gap in the international regulatory framework, as discussed earlier in section B(2) of the report of the meeting. Animals are addressed in this report in the context of some specific pathways, but there are also numerous conveyances as pathways for invasive alien animals such as vessels, floating timber, equipment and machinery, household goods, packaging and containers, and waste materials.

51. It should be noted that for some of these pathways, such as floating timber, human activities may not create new pathways for introductions, but may rather augment the rate of introductions or timing of introductions and thus increase the risk of spread and establishment of invasive alien species. These movements are often treated as if they were natural, but are within the scope of invasive alien species under the Convention on Biological Diversity, because they are indirectly caused by human activities.

52. Regarding the general gap related to many invasive alien animal species, possible actions identified in section B(2) of this report include:

(a) Expansion of the mandate of the World Organisation for Animal Health beyond a limited number of animal diseases;

(b) Development of a new instrument or binding requirements under an existing agreement or agreements such as the Convention on Biological Diversity or other appropriate frameworks;

(c) Development of non-binding guidance.

53. As noted in section B(2), further study may be appropriate in order to provide a more definitive assessment of whether and how to address this general gap, and a discussion convened under the auspices of the Convention on Biological Diversity involving relevant international bodies and instruments (e.g., CBD, IPPC, OIE, FAO, WTO) may be appropriate in order to facilitate such study.

54. Other possible actions to fill this specific gap related to conveyances as pathways for invasive alien species include:

(a) Sharing of national experiences, best practices, or case studies;

(b) Regional or national responses including, for example, (i) pathway- and species-specific risk analysis, (ii) education and awareness-raising, especially of border control officials, (iii) adaptation of IPPC standards for application to animals that fall outside the scope of IPPC;

(c) Development of regional guidance or standards under appropriate regional bodies or institutions;

(d) Research and study of other less-known conveyance pathways by relevant bodies or institutions (e.g., the GISP working group on pathways, and the ICES Working Group on Ballast and Other Shipping Vectors).

2. Aquaculture/mariculture

55. There are no specific binding international requirements that address impacts (including transboundary impacts) of the use of alien species in aquaculture (freshwater and marine, as well as land-based systems). Impacts include those caused by the cultured species themselves, associated disease organisms (though some fish and shellfish diseases are covered by OIE), or other alien species that may be introduced as hitchhikers on cultured species or equipment and goods associated with the sector.

56. In the context of the Convention on Biological Diversity, the Conference of the Parties has, in decision VII/5 on marine biological diversity, recommended that Parties and other Governments use native species and subspecies in mariculture (paragraph 45(g)), and expressed support for regional and international collaboration to address transboundary impacts of mariculture on biodiversity, such as spread of disease and invasive alien species (paragraph 51). In addition, the revised programme of work on inland waters biodiversity, adopted in decision VII/4, calls on Parties to prevent the introduction of invasive alien species and restore, where appropriate, indigenous wild-capture fisheries in preference to other aquaculture developments (annex, activity 1.4.5).

57. There are voluntary codes, including the FAO Code of Conduct on Responsible Fisheries (Article 9 on Aquaculture Development, which the Conference of the Parties urged Governments to implement in paragraph 46 of decision VII/5), and the ICES Code of Practice on the Introduction and Transfers of Marine Organisms (2004). In addition, the governing body of the Ramsar Convention has urged its Parties to ensure that measures are in place to prevent or control invasive alien species (resolution VIII.18).

58. Some general but binding obligations can be found under two United Nations agreements. Firstly, the United Nations Convention on the Law of the Sea contains a general requirement for Parties to take measures "to prevent, reduce and control pollution of the marine environment resulting from … the intentional or accidental introduction of species alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto" (Article 196). Secondly, the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, which has not yet entered into force, includes an article on alien species requiring States to take measures to "prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourse States" (Article 22).

59. In addition to the possible actions described in section B(2) of this report for addressing the general gap in the international regulatory framework for invasive alien animal species which are not pests of plants under the IPPC, the following options would address particular aspects of this pathway:

(a) Development of regional binding requirements under the agreements developed pursuant to the Regional Seas Conventions and Action Plans (there are 16 such Regional Seas Agreements – each of these is unique in its arrangements, but all can address particular issues such as invasive alien species by adding technical annexes or activities to their action plans or protocols);

(b) Development of certification schemes for aquaculture to address invasive alien species, possibly under Regional Seas Agreements, taking into account existing efforts such as those of the Global Aquaculture Alliance;

(c) Development of binding requirements under existing regional agreements governing inland water systems;

(d) Encouraging Governments to implement the ICES Code of Practice on the Introduction and Transfers of Marine Organisms, the FAO Code of Conduct on Responsible Fisheries, and article 196 of UNCLOS;

(e) Recommending that governments ratify and implement the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses.

3. Ballast water

60. There is a general provision in UNCLOS relating to alien species (article 196), but it does not specifically address ballast water. The International Convention on the Control and Management of Ships' Ballast Water and Sediments was adopted 13 February 2004. Its purpose is "to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments". This Convention is not yet in force.

61. There are technical issues relating to implementation and effectiveness of the Convention (e.g. the need for better technology to allow treatment of ballast water, the possibility of new ship designs that would eliminate the need for ballast water discharge, and concerns about the effectiveness of ballast water exchange at sea) but these will be addressed progressively by the IMO.

62. The Convention does not apply to all types of vessels. 5/ Furthermore, the Convention does not limit ballast water discharges in the high seas in the short-term. However, in the long term, the Convention requires the phasing out of ballast water exchange at sea (progressively in each size class of vessels), and once this has been completed, there would no longer be unmanaged discharges to the high seas.

63. Actions to ensure the existing legal instrument is fully effective lie with the IMO member States. Achieving full implementation could be supported by:

(a) Urging Governments to ratify and implement the Ballast Water Management Convention as soon as possible;

(b) Urging national Governments to address, within national legislation, the issue of domestic translocation of ballast water, including requiring equivalent compliance with the Ballast Water Management Convention for vessels that carry less than 8 metric tons of ballast water (e.g., recreational vessels), as stipulated in the guideline for Equivalent Compliance for Small Craft which is under consideration by the Marine Environmental Protection Committee of the IMO;

(c) Requesting that Governments increase the degree of communication and coordination between national agencies responsible for inputs to and implementation of the Convention on Biological Diversity and IMO;

(d) Encouraging the regional seas conventions and action plans to support implementation of the Ballast Water Management Convention, and to encourage regional harmonisation in implementation.

4. Hull fouling

64. There is a general provision in UNCLOS relating to alien species (article 196), but no specific instruments relating to invasive alien species transferred by hull fouling. The AHTEG noted this as a major gap in the international framework. Few countries have put in place national controls, and countries cannot control vessels which are moving through their waters under innocent passage common law rights. In addition, the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (2001) may inadvertently increase the risks associated with hull fouling.

65. The AHTEG noted that the risks associated with hull fouling will vary depending on the type of vessel and the nature of vessel movements. Vessels which are very slow (e.g. oil rigs) individually pose far greater risks than fast moving vessels. In addition, marine invasions associated with hull-fouling are more likely to occur when vessels are close to shore, even when transiting coastal waters. Furthermore, freshwater invasions associated with hull-fouling can occur through either overland transport of fouled vessels, or the movement of vessels in international watercourses including canals.

66. A major problem also arises from the cleaning of hulls, which often occurs at sea or in coastal areas, rather than in controlled dry docks. The AHTEG noted that there are practical methods available to reduce hull fouling and the risk of invasion. These are, however, not widely implemented for various reasons such as cost, practicality, and incorrect use of paint types.

67. The sixth meeting of the Conference of the Parties called on the International Maritime Organization (IMO) to develop mechanisms to minimize hull fouling as a matter of urgency. It was recognized that in the case of ballast water, a general progression to an international instrument involved national controls in some countries, an international code of practice, and finally an international legal instrument. A similar progression would be possible for hull fouling, given that the IMO has already indicated a willingness to consider addressing the issue.

68. Any IMO action would, however, be limited to the scope of the IMO mandate (flagged vessels). These limitations may exclude those vessels that are believed to pose the most serious hull fouling threat such as recreational vessels, barges, etc. In addition, the exclusion of military and other government-

5/ For example, military vessels, vessels owned and operated by a Party within its own jurisdiction and on the high seas or by exemption from another Party, and vessels that carry less than 8 tonnes of ballast water.

owned vessels (including icebreakers) from IMO treaties is also a gap, specifically in the Antarctic Treaty area.

69. The AHTEG noted that the 28th Antarctic Treaty Consultative Meeting is likely to consider hull-fouling. The United Nations Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS), which reports to the General Assembly of the United Nations, may be the body best placed to consider solutions for those situations where the IMO mandate is limited.

70. Possible actions include:

(a) National controls on hull fouling, including for recreational vessels, for example through regulations and standards;

(b) Encouraging harmonization of national legislation within regions to avoid transferring risks between nations, including through regional mechanisms such as the Regional Seas Conventions and Action Plans, or regional fisheries organizations (primarily under FAO) for the case of fishing vessels;

(c) Re-iteration of the call by the Conference of the Parties to IMO regarding the need to address the issue of hull-fouling;

(d) Encouraging Governments to raise the issue of hull fouling as a matter of urgency with the IMO Marine Environment Protection Committee, and at the Antarctic Treaty Consultative Meeting;

(e) Encouraging progress on the consideration of hull-fouling in the context of the Antarctic Treaty Consultative Meeting;

(f) Inviting UNICPOLOS to (i) recognize the serious threat posed by hull fouling (particularly of small vessels) and the limited mandate of the IMO to address the full scope of the issue, and (ii) recommend to the UNGA a mechanism for addressing this.

5. Civil air transport

71. The International Civil Aviation Organization (ICAO) is the international body with jurisdiction for civil aviation. ICAO has recently recognized aviation as a significant pathway for the dissemination of invasive alien species (Resolution 35-19). This resolution urged all Contracting Parties to support one another's efforts to reduce the risk of introducing, through civil air transportation, potentially invasive alien species to areas outside their natural range. The ICAO Council was requested to develop guidance material and, if appropriate, standards and recommended practices, and to continue working with the appropriate organizations in this regard.

72. In addition, it was noted that ICAO has in the past developed disinsection guidelines (for preventing insects being inadvertently transported by aircraft).

73. Many of the alien species moved by aviation are within the mandate of the IPPC, OIE or WHO, and the standards that they have prepared or will prepare in future are relevant to controls of this pathway.

74. Possible actions include:

(a) The Conference of the Parties could welcome ICAO resolution 35-19 on invasive alien species and invite ICAO to address invasive alien species as a matter of urgency;

(b) The Executive Secretary could work with the ICAO secretariat, as appropriate, to support their work to develop guidance;

(c) Encourage the ICAO secretariat to coordinate their work with that of other relevant bodies (including the secretariats of the Convention on Biological Diversity and IPPC) in order to ensure that comprehensive guidance is provided efficiently;

(d) Encourage collaboration at national level among agencies (e.g., civil aviation, transport, plant protection, environment) so that all relevant issues are raised through national participation in ICAO.

6. Military activities

75. Military activities can involve deliberate (e.g., staff pets) or unintentional (e.g., snakes) introduction or spread of alien species. The military are exempt from many international instruments. For example military vessels owned and operated by a Party and used for government business are exempt from IMO agreements. The AHTEG also noted that it may be more difficult to deal with the issue of invasive alien species during times of military conflict.

76. Possible actions include:

(a) Collaboration between the Convention on Biological Diversity and other relevant United Nations bodies to develop and promulgate codes of practice for the restriction of movements of alien species during military operations;

(b) Governments could develop internal procedures within their military forces to avoid the introduction of potentially invasive species into new areas, taking into account relevant international guidance, and to detect and rectify any problems of invasive alien species created during military operations;

(c) Urge Governments to ensure that they promote good practice in relation to invasive alien species in any military aid or joint exercises;

(d) Development of guidance at the United Nations level to address the introduction and spread of invasive alien species, for cases where joint military aid or exercises fall under the auspices of the United Nations (e.g., peacekeeping operations).

7. Emergency relief, aid and response

77. Humanitarian or other emergency relief (e.g., for oil spills) or aid efforts can lead to the introduction or spread of invasive alien species (e.g., as hitchhikers on vehicles and equipment and in food), in particular because the short-time period typical of urgent preparation of humanitarian responses makes incorporating invasive alien species considerations difficult. In addition, the emergency itself that is being responded to, may have created an invasive alien species problem (e.g., a natural disaster may result in dispersal of species).

78. Possible actions include:

(a) Development of international codes of practice for minimizing potential spread of invasive alien species on equipment, supplies and vehicles associated with emergency relief, aid and response efforts;

(b) Development of procedures for ensuring that assessments to determine aid requirements include identification of any issues of invasive alien species caused by the emergency;

(c) Development of emergency response procedures (e.g., codes of practice or guidelines such as the IUCN Guidelines for Restoration of Tsunami-Affected Areas) for dealing with cases where invasive alien species are dispersed following a natural disaster or event. Such procedures could be developed under relevant international bodies such as the United Nations Office for the Coordination of Humanitarian Affairs, which serves as the integrated United Nations emergency response mechanism to activate and provide international assistance to countries facing environmental emergencies;

(d) Urge Governments to implement any such codes in national aid operations or in the operations of NGOs within their country;

(e) Urge Governments and other donors to take measures to minimize the introduction and spread of invasive alien species as part of their emergency relief, aid and response efforts.

8. International development assistance

79. Both intentional and unintentional introductions of invasive alien species can occur through development assistance. Examples include the movement of species by vehicles and equipment, and the use of invasive species in international development assistance programmes.

80. Possible actions include:

(a) United Nations organizations involved in international development assistance could be encouraged to, in consultation with the Convention on Biological Diversity and other relevant bodies or agreements, develop or use existing codes of practice to minimize use, dispersal and establishment of invasive alien species;

(b) Governments to develop, through collaboration between biosecurity, biodiversity and aid organisations, national controls or codes of practice;

(c) Organizations involved in international development assistance to adopt appropriate procedures (e.g., mitigation measures), taking into account relevant international codes of practice or other guidance.

9. Scientific research

81. Scientific research was identified as a significant pathway. Examples include the movement of organisms for research purposes, the reintroduction of species as part of biodiversity management programmes, the spread of pests and diseases on contaminated equipment (e.g., wading apparel used in aquatic research), and the movement of biological specimens. Researchers may pose a particular risk to biodiversity because they have access to sites of high conservation value that may be closed to the general public, and may carry equipment or organisms into those sites.

82. Botanic gardens were identified by the AHTEG as a major source of alien species introductions, even promoting the deliberate spread of new horticultural species. More recently some botanic gardens have been involved in public awareness about invasive alien species issues. Botanic Gardens Conservation International has, at its second congress in 2004, noted that the issue of invasive alien species is important.

83. Possible actions include:

(a) Urge countries to put in place national controls to minimize the risk posed by scientific research, without unduly constraining research activities;

(b) Relevant international and regional organizations (e.g., Botanic Gardens Conservation International, International Union of Forestry Research Organisations) as well as professional societies could develop codes of practice for scientific research. One example is the EPPO draft guidelines for the intentional import of live organisms that are pests of plants or potential pests of plants;

(c) Request the Executive Secretary or an appropriate body to identify existing guidelines on scientific research, for example in relation to researchers' access to sites of high conservation value, and disseminate these through the clearing-house mechanism or other appropriate information-sharing mechanisms.

10. Tourists

84. All types of travellers are a pathway for alien species, which may be moved deliberately (e.g., tourists taking living souvenirs home) or accidentally (on clothes or in luggage and equipment). It was noted, however, that there are some specific features that set tourists apart from other travellers:

(a) Governments may be reluctant to impose thorough quarantine controls on tourists, for fear of damaging the industry;

(b) Tourists are more likely to visit sites of high conservation value;

(c) Tourists are likely to be moving between similar sites (e.g., wildlife viewing areas), increasing the risk of spreading invasive alien species.

85. Possible actions include:

(a) Request SBSTTA to ensure that future work relating to sustainable tourism fully addresses this issue;

(b) Urge countries and regional bodies to adopt suitable measures to address this pathway, taking into account the Guidelines on Biodiversity and Tourism Development adopted in decision VII/14 of the Conference of the Parties, with particular emphasis on tourism in sites of high conservation value;

(c) Education and public awareness, including potential development of codes of practice under relevant international organisations (e.g. the World Tourism Organization, the International Air Transport Association);

(d) Gathering and dissemination of information on best practices through the clearing-house mechanism or other appropriate information-sharing mechanisms.

11. Pets, aquarium species, live bait and live food

86. There are no specific international standards that address risks of invasions associated with trade in pets and aquarium species that are not pests of plants under IPPC, such as fish, reptiles, or insects, or that address risks of invasions associated with live bait and live food. It was noted that there has been an increase in such trade due to internet-based transactions.

87. In addition to the possible actions described in section B(2) of this report for addressing the general gap in the international regulatory framework for invasive alien animal species which are not pests of plants under the IPPC, the following options would address particular aspects of this pathway:

(a) Raise awareness with consumers, including through the industry and through internet sites that facilitate transactions or may otherwise be visited by consumers of pet and aquarium species;

(b) Consideration of the issue by the International Postal Union;

(c) Codes of practice developed by industry, including to address disposal and discard;

(d) Development of requirements or guidance by regional or national organizations;

(e) National controls (e.g., permit systems) on import and potentially on export (e.g., if requested to do so by the Government of the importing country where that country does not have adequate controls in place itself).

12. Biocontrol agents

88. The IPPC has developed a standard (revised International Standard for Phytosanitary Measures #3) on Guidelines for the Export, Shipment, Import and Release of Biological Control Agents and Other Beneficial Organisms (e.g., pollinators). However, animals used in biological control of animals are not specifically addressed in the international regulatory framework. Marine organisms used in biocontrol are referred to in the ICES Code of Practice on the Introductions and Transfers of Marine Organisms, which is voluntary.

89. In addition to the possible actions described in section B(2) of this report for addressing the general gap in the international regulatory framework for invasive alien animal species which are not pests of plants under the IPPC, the following options would address particular aspects of this pathway:

(a) Development of measures at national level, for example on the basis of International Standard for Phytosanitary Measures #3;

(b) Sharing of national procedures between countries.

13. Ex situ animal breeding programmes

90. There is a gap in the international framework for addressing movement of alien animal species for *ex-situ* breeding. This may include exchange of animals between breeding programmes, among safari parks or similar operations, or breeding of wild animals for hunting or fish for sports fisheries. The Convention on International Trade in Endangered Species (CITES) controls movements of certain categories of endangered species, and some such species can be invasive. The issue of invasive alien species has been addressed in resolution 13.10 of the Conference of the Parties of CITES, and has resulted in some consideration of invasiveness in the granting of CITES permits. In particular, resolution 13.10 recommended that Parties consider the problem of invasive species and consider opportunities for synergy between CITES and the Convention on Biological Diversity, and also instructed the CITES Secretariat to establish cooperation with the Secretariat of the Convention on Biological Diversity and the IUCN Species Survival Commission's Invasive Species Specialist Group.

91. In addition to the possible actions described in section B(2) of this report for addressing the general gap in the international regulatory framework for invasive alien animal species which are not pests of plants under the IPPC, the following options would address particular aspects of this pathway:

(a) Agreements within breeding programmes to address the potential impacts of animal movements;

(b) Sharing of best practices (e.g., the IUCN Species Survival Commission's Guidelines for Re-Introduction) through regional and international organizations, and the animal breeding industry (e.g., IUCN, the World Zoos Organization);

(c) National controls on activities, including risk assessments of whether species should enter the country, controls on movements of fish between water bodies and drainage basins, and controls to ensure containment of animals within safari parks, zoos, etc.

14. Incentive schemes (including carbon credits)

92. Countries may potentially make use of invasive alien species as part of economic or other incentive schemes. A significant incentive programme identified by the AHTEG was the carbon credits scheme of the Kyoto Protocol, but they recognized that there are others (e.g., for salinity or erosion control at the national and international level).

93. The risks of invasive alien species being introduced through incentive schemes have been reviewed in some fora.

94. One particular example examined was the preamble to decision 19/CP.9 of the UNFCCC, where Parties recognized that Parties evaluate, in accordance with their national laws, risks associated with the use of potentially invasive alien species in forestation/afforestation projects.

95. The AHTEG noted, however, that some countries do not have mechanisms to adequately take into account the potential for alien invasions from forestry and afforestation. As a result, some incentive schemes may inadvertently encourage the use of alien species that could negatively affect biodiversity. The AHTEG noted with concern that some invasive alien species continue to be used for carbon credits purposes.

96. The AHTEG recognized that in some cases the use of alien species may be appropriate, where there are mitigation processes in place in the country to ensure that any spread of the alien species from a plantation of such species is controlled.

97. A possible action could be for the Convention on Biological Diversity to invite the UNFCCC to encourage Parties to put in place national measures which avoid the use of invasive alien species, or to establish processes to prevent or mitigate the impacts of those species.

15. Inter-basin water transfer and navigational canals

98. Human activities can cause introduction and spread of invasive alien species through water transfer schemes. Also, canals that connect previously isolated water bodies or drainage basins may enable species to move between such water bodies or basins, or may facilitate such movement (e.g., via vessels), that may lead to introduction or spread of invasive alien species. This is an issue in relation to both new projects, and also continued spread of organisms through existing canals. In the context of the Convention on Biological Diversity, the programme of work on inland waters adopted by decision VII/4 of the Conference of the Parties and calls on Parties to, within the context of transboundary catchments, watershed and river-basin management, and especially in relation to inter-basin water transfers, provide appropriate mechanisms to prevent the spread of invasive alien species (activity 1.4.4). The 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, not yet in force, includes an article on alien species requiring States to "take measures to prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourse States."

99. Possible actions include:

(a) The Convention on Biological Diversity could urge Parties to ratify the Convention on Non-Navigable Uses of International Watercourses, and to implement the alien species article as a matter of urgency;

(b) Regional approaches including, for example, requiring impact assessments to ensure consideration of invasive alien species issues within water transfer schemes and navigation canal projects;

(c) National implementation of activity 1.4.4 of the programme of work of the Convention on Biological Diversity on inland waters annexed to decision VII/4;

(d) Development of technical advice on methods to reduce the introduction or spread of invasive alien species through canals and pipes.

16. Action or inaction to address spread of invasive alien species

100. In many cases, actions or inaction at national level may result in unintentional introductions of invasive alien species into other States. Neighbouring states may be particularly vulnerable. The specific case of aquaculture has been addressed (see section C(2)), but there is also a broader gap not limited to aquaculture. Examples include:

(a) Deliberate introduction of a species without considering the potential risk to the neighbouring state;

(b) Deliberate introduction of a species without agreement from another state that claims or shares the same waterbody (e.g., where there are disputed Exclusive Economic Zones);

(c) Failure to control a potentially invasive alien species, so that its numbers increase and it begins to naturally spread across the border;

(d) Failure to participate in regional control programmes, making such control programmes ineffective;

(e) Failure to warn a neighbouring state of an imminent threat, reducing the ability of the neighbouring state to take effective early actions.

101. Inaction in the context of the World Heritage Convention (UNESCO 1972) may lead to significant loss of global values. Under that Convention, Parties assume responsibility for specific World Heritage Sites, which can be established for the purpose of protecting *inter alia* important and significant habitats for conservation of biological diversity. Such sites are subject to human use, and therefore invasive alien species may be introduced inadvertently. Inaction by a Party to respond to invasive alien species, including failure to make provisions through national management plans, legislation and

regulations, could impair the values of a property, resulting in the removal of the property from World Heritage listing.

102. It was also noted that there are technical problems in addressing this issue. For example most States do not have in place controls on exports, there are difficulties in assessing risk to other States, and lack of action to control species in the country are likely to relate to wider capacity gaps.

103. There have been good examples of inter-country cooperation, including regional control and containment programmes, information provision from an exporting state to an importing state about the risks of the invasive alien species, etc.

104. At a general level, Articles 3 and 14.1 of the Convention on Biological Diversity are relevant. Article 3 states that States "have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction". Article 14.1 requires Parties to, *inter alia*, ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account. In addition, of course, Article 8(h) requires Parties to, as far as possible and appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.

105. More specifically, for those species that are pests of plants under the IPPC, the IPPC requires cooperation and requires States to report outbreaks of pests of plants (Article 8.1(a)). The Ballast Water Management Convention has a similar obligation to report outbreaks of harmful aquatic organisms and pathogens.

106. Possible actions include:

(a) Development of national procedures and/or controls that will ensure consideration of impacts on neighbouring States when decisions are being made or actions undertaken;

(b) Development of regional approaches (e.g. as is currently the case under the African Union);

(c) Action by potentially affected States, for example by offering to help other States to deal with particular invasive alien species that may cross the border;

(d) Parties to the Convention on Biological Diversity could be requested to share information on domestic occurrences of alien species that may be invasive elsewhere, as is the case of pest reporting under the IPPC, for example through the clearing-house mechanism or other appropriate reporting mechanisms;

(e) Encourage Parties to take into account the issue of invasive alien species when implementing their international obligations to maintain World Heritage sites or other such sites.

17. Unintended protection of invasive alien species

107. There are cases in which invasive alien species may be inadvertently protected by national, regional or international laws or agreements. For example, national laws may protect particular groups of species without specifying that the protection is limited to native species. In such cases, an invasive alien species may be inadvertently protected. At the national and international levels, agreements that aim to protect or conserve biodiversity using site-based approaches, such as protected areas or the Ramsar Convention, may preclude human intervention in whole or in part. In such cases, it may not be possible to take measures to control an invasive alien species that might be present at such a site.

108. Possible actions include:

(a) Encourage national Governments and international bodies to ensure that relevant laws and provisions do not inadvertently constrain the use of appropriate measures to address invasive alien species;

(b) Encourage governments to raise the issue of invasive alien species at the meetings of the Antarctic Treaty Consultative Meeting, and to support the development of measures to address threats of invasive alien species in the Antarctic Treaty area.

18. Inconsistency in terminology

109. Terminology used in relation to invasive alien species differs among various international bodies and agreements. In many cases, terms are clear to users in the context in which they are used (e.g., the definition of "economic" in the case of the plant protection community), but those terms may be misinterpreted in other fora. Furthermore, difficulties in translation among languages can exacerbate the problem of interpretation of terms.

110. Possible actions include:

(a) Relevant bodies could be encouraged to develop guidance (e.g., supplements to the Glossary of Phytosanitary Terms in the case of the IPPC) to clarify the appropriate interpretation for particular terms;

(b) Governments should, at national level, encourage collaboration and communication among relevant agencies, which will help to resolve misunderstandings related to terminology (e.g., ICPM-7 has encouraged collaboration between plant protection and environment sectors at national level on the issue of invasive alien species);

(c) Collaborative workshops involving multiple sectors (e.g., the 2003 workshop on Identification of Risks and Management of Invasive Alien Species Using the IPPC Framework, which was held in Braunschweig, Germany brought together plant protection and biodiversity sectors);

(d) The Executive Secretary of the Convention on Biological Diversity should consider the issue of terminology in joint work with other secretariats (e.g., as in the case in the joint work plan between the Convention on Biological Diversity and IPPC secretariats), as part of the implementation of paragraph 28(b) of decision VI/23;

(e) Raising awareness within national government agencies, through the appropriate design of training and operational materials;

(f) The Conference of the Parties should consider clarifying terminology related to invasive alien species in the context of the Convention on Biological Diversity.

Annex I

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Annex II

ACRONYMS

CHM	Clearing-house mechanism of the Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EPPO	European and Mediterranean Plant Protection Organization
FAO	Food and Agriculture Organization of the United Nations
GISP	Global Invasive Species Programme
IAS	Invasive alien species
ICAO	International Civil Aviation Organization
ICES	International Council for the Exploration of the Seas
ICPM	Interim Commission on Phytosanitary Measures
IMO	International Maritime Organization
IPPC	International Plant Protection Convention
IUCN	The World Conservation Union
NEPAD	New Partnership for Africa's Development
OIE	World Organisation for Animal Health
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SPS	Sanitary and Phytosanitary
UNCLOS	United Nations Convention on the Law of the Sea
UNICPOLOS	United Nations Informal Consultative Process on Oceans and the Law of the Sea
WTO	World Trade Organization
