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MEETING OF THE GROUP OF LEGAL AND TECHNICAL EXPERTS ON LIABILITY AND REDRESS IN THE CONTEXT OF ARTICLE 14(2) OF THE CONVENTION ON BIOLOGICAL DIVERSITY
Montreal, 12-14 October 2005
Item 3 of the provisional agenda*

SUMMARY OF CASE-LAW AND CASE-STUDIES PERTAINING TO TRANSBOUNDARY ENVIRONMENTAL DAMAGE

Information note by the Executive Secretary

INTRODUCTION

1. Decision VI/11 of the Conference of the Parties to the Convention on Biological Diversity adopted at its sixth meeting, *inter alia*, requests the Executive Secretary to collect relevant information on case-studies pertaining to transboundary damage to biological diversity including but not limited to case law.

2. As a response to this request the Executive Secretary in the present document provides a summary of the leading case-law including case-studies pertaining to transboundary environmental damage. In section I, the Executive Secretary provides information on pertinent case-law and section II deals with case-studies pertaining to transboundary damage to biological diversity.

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I. CASE-LAW

A. Permanent Court of International Justice (PCIJ)

3. *The Chorzow Factory Case* 1/ has its roots in the Treaty of Versailles signed in 1919. The Treaty contained a requirement that certain territories be transferred from German to Polish control and that the status of certain other lands be determined by plebiscite. The Geneva Convention adopted to implement the Treaty of Versailles, and the plebiscites that followed ceded the region of Chorzow to Poland. Under the Geneva Convention, countries that took over German territory had the right to seize land owned by the Government of Germany and credit the value of that land to Germany's reparation obligations. Any disputes that arose under the Convention were to be referred to the PCIJ.

4. Shortly after Poland took over Chorzow, a Polish court decreed that land belonging to the German company, Oberschlesische Stickstoffwerrke A.G., be turned over to Poland. Litigation ensued on the question of whether the land was "property' of Germany or if it was privately owned by the company. The dispute eventually reached the PCIJ which concluded that the land was privately owned, and that Poland had seized private property. The Court stated that "there can be no doubt that the expropriation ….is a derogation from the rules generally applied in regard to the treatment of foreigners and the principle of respect for vested rights". Thus, the Court enunciated the then existing international law that expropriations were not permitted and if they occurred, full compensation must be paid. The PCIJ clearly stated in this case that a State in breach owes to the affected State a duty of reparation, which must "as far as possible, wipe out the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed". The general principle of international law is that a State which breaches its international obligation has a duty to right the wrong committed.

B. International Court of Justice (ICJ)

Corfu Channel Case (United Kingdom. v. Albania), 1949 I.C.J. 4

5. This case constitutes a landmark case of the ICJ, dealing with the general question of international responsibility of a state not only for its own acts but also for the acts of other entities. In on 22 October1946, two British cruisers and two destroyers entered the North Corfu Strait. The channel they were following, which was in Albanian waters, was regarded as safe. Nevertheless, one of the destroyers, the *Saumarez,* struck a mine and was gravely damaged. The other destroyer, the *Volage*, was sent to her assistance and, while towing her, struck another mine and was also seriously damaged. Forty-five British officers and sailors lost their lives, and forty-two others were wounded.

6. The main principle of law laid down by the case is that a State has an obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States. In this regard, the Court observed that there were "general and well-recognized principles of international law" concerning "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States". This knowledge cannot be inferred from the mere fact of the control exercised by a State over its own territory and waters.

7. The Court drew the conclusion from this case that the laying of the minefield could not have been accomplished without the knowledge of Albania even if it had not happened under its supervision or with its explicit consent. By this, due to its knowledge, Albania had a duty to notify shipping and especially to warn the ships. However, nothing was attempted by Albania to prevent the disaster why these grave omissions gave rise to its international responsibility.

1/ *Factory at Chorzow,* Merits, 1928, PCIJ, Series A, No. 17, p. 29.

8. It has to be seen though that the principle was not further elaborated by the ICJ and kept vague. Nevertheless, the Corfu Channel Case had strong influence on the international law in general, but also on international environmental law as it constitutes one of the foundations of the Stockholm Declaration, the ILC's work and many multilateral treaties of the last decades.

Barcelona Traction, Light and Power Co. Case (Belgium v. Spain), 1970 I.C.J. 3

9. The claim, which was brought before the Court on 19 June 1962, arose out of the adjudication in bankruptcy in Spain of Barcelona Traction, a company incorporated in Canada. Its object was to seek reparation for damage alleged by Belgium to have been sustained by Belgian nationals, shareholders in the company, as a result of acts said to be contrary to international law committed towards the company by organs of the Spanish State. The Court found that Belgium lacked *jus standi* to exercise diplomatic protection of shareholders in a Canadian company with respect to measures taken against that company in Spain.

10. In the Barcelona Traction Case the Court referred to obligations *erga omnes* in respect of which all States would enjoy standing to bring claims, and the normal nationality of claims rule would cease to apply. This is of interest with regard to transboundary environmental damage as it had a great impact on the International Law Commission draft articles on State responsibility. In Article 19(3d) the ILC identifies "a serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment, such as those prohibiting massive pollution of the atmosphere or the seas" as an international crime. By characterizing any conduct gravely endangering the preservation and conservation of the human environment in this manner, this passage reflects the main principle of law formulated in the Barcelona Traction case namely the concept of *obligations erga omnes.* These obligations are obligations towards the international community as a whole. The Court defined the *erga omnes* character of a norm or obligation as those obligations in respect of which all States have a legal interest of observance. The Court stated that such obligations derive, for example, "(...) from the outlawing of acts of aggression, and of genocide, and also from the principles and rules concerning the basic rights of the human person, including protection from slavery and racial discrimination. Some of the corresponding rights of protection have entered into the body of general international law (…); others are conferred by international instruments of a universal or quasi-universal character".

Nuclear Tests Cases (New Zealand v. France; Australia v. France), 1974 I.C.J. 253 and 457

11. France conducted atmospheric tests of nuclear weapons, which released radioactive matter into the atmosphere. Both Australia and New Zealand protested and instituted proceedings before the ICJ concerning the legality of atmospheric nuclear tests conducted by France asserting that these tests caused fall-out of radioactive matter to be deposited on their territory. They asked the ICJ for a declaration and an order that France would not carry out further tests. In reaching its decision the ICJ made clear that *not every* transmission of a chemical or other matter into another State's territory, or into the global commons, would create a legal cause of action in international law. The significant-harm requirement was thus formulated by the Court in this case even though there was no real decision on the merits of the case as France declared before by various public statements that it would cease the conduct of atmospheric nuclear tests. By this, the Court found that the claims of New Zealand and Australia had no longer any object and that, therefore, it was not called upon to give a decision thereon.

Nauru Case (Nauru v. Australia), Communiqué of the ICJ, 19 July 1993

12. The Nauru case was discontinued by an Order of the ICJ of 13 September 1993 as the parties to the dispute had an out-of-court agreement. Nevertheless, the proceedings, even at this early stage

included some environmental implications. The case concerned a claim by Nauru relating to environmental damage through phosphate-mining activities that were carried out during the time when Nauru was administered by Australia. Decisive issues in the case were whether Australia violated its obligations but also whether Nauru had a direct claim against Australia because its activities caused damage to Nauru's environment. Other questions were whether States may be liable in respect of environmental damage, for the damage itself, or rather for failure to rehabilitate the land affected by that damage, and the issue whether reparation would be due from Australia, if found responsible, for the whole or only part of the damage. However, Australia obliged itself to pay Nauru 107 million Australian dollars over a twenty-year period under a "Rehabilitation and Cooperation Agreement" to deal with the rehabilitation of the land after the damage caused by phosphate mining. In addition, a "Joint Declaration of Principles Guiding Relations between Australia and the Republic of Nauru " was designed by the two states. This broad agreement includes not only the abolishment of trade restrictions, but also such items as the promotion of cooperation in fisheries and environmental protection.

Legality of the Threat or Use of Nuclear Weapons (ICJ advisory opinion of 8 July 1996) (ICJ Reports, 1996, p. 15).

13. In this case the Court was asked by the United Nations General Assembly to render its opinion on whether the threat or use of nuclear weapons in any circumstances is permitted under international law.

14. In their statements before the Court, some States argued that any use of nuclear weapons would be unlawful by reference to existing norms relating to the safeguarding and protection of the environment. In responding to this the Court declared that "the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment". The main result of this case was that it extended the transboundary reach of the obligation of State responsibility to include areas beyond the limits of national jurisdiction.

15. The Court further declared that "the issue is not whether or not the treaties relating to protection of the environment are or not applicable during an armed conflict, but rather whether the obligations stemming from these treaties were intended to be obligations of total restraint during military conflict". The Court did not consider that the treaties in question could have intended to deprive a State of the exercise of its right of self-defence under international law because of its obligations to protect the environment. Nonetheless, the Court stated that States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives because respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality.

Gabcikovo-Nagymaros Project Case (Hungary v. Slovakia), 1997 I.C.J. 7

16. This case is recognized as the first real international environmental case adjudicated by the ICJ. It arose out of a 1977 treaty signed by Hungary and Czechoslovakia for the construction and operation of water dams/locks in the Danube River. Hungary abandoned the works, part way through construction, in 1989, and terminated the treaty after the Czech section was almost complete. Hungary relied on five arguments in support of its claim of lawful termination: (i) the existence of the "state of ecological necessity"; (ii) the impossibility of performance of the treaty; (iii) the occurrence of a fundamental change; (iv) the material breach of the treaty by Czechoslovakia, respectively Slovakia which succeeded the former as a party, and v) the developments of new norms of international environmental law.

17. The ICJ found it difficult to support Hungary. The "state of ecological necessity" is the situation of a State whose sole means of safeguarding an essential interest threatened by a grave and imminent peril is to adopt conduct not in conformity with what is required of it by an international obligation to another State. The Court held that for the "state of ecological necessity" to apply the existence of a peril must be grave and imminent; the mere apprehension of a possible peril will not suffice. The environmental dangers highlighted by Hungary were mostly of a long-term nature and were uncertain, and even if Hungary could have proved the project would have caused grave peril for the environment in the area, the peril was not imminent when Hungary abandoned the works. Hungary explicitly invoked the precautionary principle saying that "the previously existing obligation not to cause substantive damage to the territory of another State had … evolved into an *erga omnes* obligation of prevention of damage pursuant to the 'precautionary principle". However, the ICJ did not respond to this point and thus missed an opportunity to interpret and express a full ruling on this issue.

The Fisheries Jurisdiction Case (Spain v. Canada), ICJ Judgement of 4 December 1998

18. The fishing grounds of Newfoundland are the most important areas for the Canadian fishing industry. However, it became necessary to lower the fishing quotas to maintain a sustainable use of the resources. The Canadian Government accused European fishing boats, in particular Spanish and Portuguese, of over-fishing just outside of the exclusive economic zone of Canada and by this, of depleting the fish stocks.

19. On 28 March 1995, Spain filed an Application instituting proceedings against Canada after a Canadian patrol boat boarded the *Estai*, a fishing boat flying the Spanish flag, on the high seas. The boarding was carried out according to the Canadian Coastal Fisheries Protection Act, amended on 12 May 1994 and its implementing regulations. Spain maintained that Canada had violated its obligations under international law, i.e. to respect the freedom of navigation, the freedom of fishing on the high seas and the right of exclusive jurisdiction of a flag State over its ship on the high seas. Canada argued that the ICJ lacked jurisdiction as it had made a reservation to the Court's jurisdiction. The Court declared in its ruling that it had no jurisdiction by identifying the subject-matter of the dispute "arising" and "concerning" "conservation and management measures taken by Canada with respect to vessels fishing in the NAFO regulatory Area" and "the enforcement of such measures" as being covered by the Canadian reservation. Therefore the ICJ gave no ruling on the merits of the case.

C. International Tribunal for the Law of the Sea (ITLOS)

Southern Bluefin Tuna Fish Case (27 August 1999)

20. New Zealand and Australia requested the Tribunal to prescribe provisional measures ordering Japan to cease immediately unilateral fishing for Southern Bluefin Tuna Fish and to restrict its catch to its national allocation. They alleged that Japan had violated its duty to cooperate under Articles 64 and 116 of the United Nations Convention on the Law of the Sea by undertaking unilateral experimental fishing. Further, New Zealand and Australia requested the Tribunal to declare that, pending a final settlement, the parties to the dispute should act in accordance with the precautionary principle and ensure that no further action, i.e. fishing, will aggravate or prejudice any decision on the merits.

21. However, Japan challenged the *prima facie* jurisdiction of the Tribunal and asked alternatively for provisional measures calling on New Zealand and Australia to "urgently and with good faith" recommence negotiations to reach a consensus on the outstanding issues.

22. The Tribunal approved its jurisdiction and also the urgency of the situation, so that a provisional measure had to be taken. In this respect the Tribunal held that the conservation of living resources, such

as the Southern Bluefin Tuna Fish, is "an element of the protection and preservation of the marine environment". Though there was no conclusive assessment of the scientific data and evidence presented by the Parties, the Tribunal found a provisional measure to be justified to prevent further deterioration of the Southern Bluefin Tuna Fish stock. The Tribunal prescribed that all the Parties should refrain from conducting an experimental fishing programme.

23. The Tribunal explicitly applied only a precautionary *approach* rather than the precautionary *principle* to keep a certain degree of flexibility while "underscoring its reticence about making premature pronouncements about desirable normative structures".

D. European Court of Justice (ECJ)

Handelskwekerij G.J. Bier BV vs. Mines de Potasse d'Alsace SA, Case 21-76, 30 November 1976, European Court Reports (1976) I, p. 1735

24. This case deals with the pollution of the Rhine through discharges of salt waste by the Mines de Potasse d'Alsace (MDPA), a potash mining corporation. Affected gardening companies and other Dutch pollution victims initiated proceedings in front of Dutch and French national courts. They reasoned that the excessive salinization of the Rhine was due principally to the massive discharges carried out by MDPA and that it therefore had to be held liable, *inter alia*, for the damages to plantations which only could be limited through expensive measures. However, the Court at Rotterdam, ruled in its judgement delivered on 12 May 1975 that it had no jurisdiction to enter the action. It referred to Article 5 (3) of the Convention of 27 September 1968 on Jurisdiction and the Enforcement of Judgements in Civil and Commercial Matters (Brussels Convention) saying that the case should have been brought in front of a French court for the area in which the discharge took place. Bier etc. brought an appeal against that judgement. The Appeal Court of The Hague, then, referred the question to the ECJ, pursuant to the Protocol on the Interpretation of the Brussels Convention on the interpretation of Article 5 (3) of the said Convention. The Article of the Convention reads: "A person domiciled in a Contracting State may, in another Contracting State, be sued: (…) 3. in matters relating to tort, delict or quasi-delict, in the courts for the place where the harmful event occurred; (…)".

25. Finally, the ECJ ruled that the defendant may be sued, at the option of the plaintiff, either in the courts for the place where the damage occurred *or* in the courts for the place of the event which gives rise to and is at the origin of that damage. Though the ECJ therefore did not touch any substantive questions of the case, it clarified the issue of jurisdiction in cases of transboundary pollution. It is important for the plaintiff to have the possibility of choice of forum as it gives him the opportunity to choose the more advantageous legal system.

French Nuclear Tests Case (Order of the President of the Court of the First Instance of 22 December 1995), Case T-219/95 R

26. Three residents of Tahiti, French Polynesia, sought to have annulled an act of the Commission of the European Union by which the Commission had concluded that the nuclear tests in French Polynesia did not represent a perceptible risk of significant exposure for workers or the general public. The Commission was asked for an evaluation of the situation according to Article 34 of the Treaty Establishing the European Atomic Energy Community (EAEC Treaty) which provides: "Any Member States in whose territories particularly dangerous experiments are to take place shall take additional health and safety measures, on which it shall first obtain the opinion of the Commission. The assent of the Commission shall be required where the effects of such experiments are liable to affect the territories of other Member States." However, the three applicants challenged the decision of the Commission and asked, moreover, for an interim relief, *inter alia*, to suspend the operation of the Commission's decision

and to order the Commission to take all the measures necessary to preserve and protect the applicant's rights under the EAEC Treaty.

27. The Court, however, ruled that the applicants could not prove that the contested decision of the Commission was of individual concern to them, meaning that they did not have the necessary *locus standi*. First of all, the contested decision was not directly addressed to the applicants. Second, they could not prove that they were affected "by reason of certain attributes which are peculiar to them or by reason of circumstances in which they are differentiated from all other persons and by virtue of those factors it distinguishes them individually just as in the case of the person addressed". The Court argued that the decision of the Commission concerns the applicants only in their objective capacity as residents of Tahiti but not in any more specific way.

28. By this, the Court unfortunately did not deal with any substantive questions of the case. Issues like the scope of Article 34 of the EAEC Treaty with regard to any potential damage to the environment or the effect of the precautionary principle laid down in the EEC Treaty were not discussed.

E. Arbitral Awards

Trail Smelter Arbitration (US v. Canada) 1941, 3 U.N.R.I.A.A. 1938 (1949)

29. Being a landmark case in the history of environmental law, the Trail Smelter Arbitration articulated the fundamental principles of no harm and the obligation to prevent and abate transboundary environmental interference causing significant harm. The dispute arose as sulphur dioxide fumes emitted from a smelter situated in Canada caused damage in the territory of the United States of America. However, the tribunal held that not every kind of transboundary environmental injury falls within the scope of environmental damage, and in the absence of substantial, legally provable damage to the environment, State responsibility does not arise. The tribunal further elaborated that "under the principles of international law as well as the law of the United States no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another State when the case is of serious consequence and the injury is established by clear and convincing evidence". Accordingly, the Trail Smelter was required to stop causing any damage. The tribunal then determined the quantum of environmental damage using the market value approach.

Lake Lanoux Arbitration (Spain v. France), 12 U.N.R.I.A.A. 281 (1957)

30. Spain alleged that a hydroelectric power plan by France would, if effectuated, alter the natural flow of the Carol River that crosses from France into Spain. Having adverse effects on Spanish rights and interests, these industrial plans would be contradictory to the 1866 Treaty of Bayonne which regulated the joint use of the river. The tribunal's finding was based on the interpretation of this specific treaty; however, in its analysis it defined environmental damage broadly, as "evidenced by changes in the composition, temperature and other characteristics of the river". In its award, the main principle laid down by the tribunal provides that the exclusive jurisdiction of a State's activities in its own territory finds its limits in the rights of other States. Taking into account "international common law" the tribunal held though, that there was no need of a prior consent or agreement of the interested states, but only a procedural right of the affected state to be heard in advance. By this, the tribunal concluded that the French project did not violate the Treaty or any other rule of international law, finding that there was no serious injury to Spanish interests and that France had sufficiently involved Spain in the preparation of its hydroelectric scheme.

F. General Agreement on Tariffs and Trade (GATT)/ World trade Organization (WTO)

India etc. vs. United States – Import Prohibition of Certain Shrimp and Shrimp Products: Report of the WTO Appellate Body, WT/DS58/AB/R (12 October 1998)

31. The case brought by India, Malaysia, Pakistan and Thailand against the United States of America was directed against a ban imposed by the United States of America on the importation of certain shrimp and shrimp products. The aim of the ban was to protect endangered sea turtles that are listed as endangered or threatened by the Endangered Species Act of 1973 of the United States of America. The catch of those is forbidden under the United States of America law and American shrimp trawlers are required to use "turtle excluder devices" (TEDs). In addition, Section 609 of US Public Law 101-102 provides, among other things, that shrimp harvested with technology that may adversely affect turtles may not be imported into the United States of America. In practice, many countries that caught shrimps without those TEDs were therefore affected by the ban. The United States of America lost the case.

32. However, the WTO Appellate Body made clear that it had "*not* decided that the protection and preservation of the environment is of no significance to the Members of the WTO" and that it had *not* decided "that the sovereign nations that are Members of the WTO cannot adopt effective measures to protect endangered species, such as sea turtles. Clearly, they can and should". The Appellate Body found though in this specific case that the United States applied the ban, which served an environmental objective that is recognized as legitimate under paragraph (g) of Article XX of the GATT 1994, "in a manner which constitutes arbitrary and unjustifiable discrimination between Members of the WTO, contrary to the requirements of the chapeau of Article XX". Indeed, the United States of America provided other western countries with technical and financial aid and accepted longer transition periods for the introduction of TEDs.

The Tuna - Dolphin Case (Mexico vs. Unites States), GATT Panel Report circulated on 3 September 1991, but not adopted

33. In February 1991, Mexico complained under the GATT dispute settlement procedure concerning the ban on its export of tuna to the United States under the United States Marine Mammal Protection Act that sets dolphin protection standards for the domestic American fishing fleet and allows embargo for tuna products of a country that cannot prove to the US authorities that it meets the criteria of the United States dolphin protection standards. The Panel reported to the GATT members in September 1991 and concluded, that the United States was not allowed to ban a product simply because its way of production does not fulfil the United States regulations. Only the quality or the content of a product could justify such treatment ("product vs. process"). In addition, the Panel stated that the GATT rules did not allow a country to use trade measures against another country to impose and enforce its own domestic laws, not even for protecting the environment ("extra-territoriality"). However, the Panel report was never adopted, as Mexico decided not to pursue the case anymore. It held its own bilateral consultations with the United States of America and an agreement outside of GATT was reached. As the embargo also applied to so-called intermediary countries which process and can the tuna, the case was brought up again by the European Union in 1992. However, the Panel report of that case also has never been adopted, as the United States of America did not give its consensus.

G. The United Nations Compensation Commission (UNCC)

34. The Gulf War had an immense impact on the ecological system of the whole region. Biodiversity was gravely harmed by the destruction caused by oil fires and oil spills which affected the flora and fauna of the region and by the climate changes resulting from the air pollution, i.e. harmful gases, that were generated by the oil fires.

35. The UNCC was created in 1991 as a subsidiary organ of the United Nations Security Council. It processes all the claims and pays compensation for above-mentioned losses and damage, i.e. environmental damage and the depletion of natural resources, suffered as a direct result of Iraq's unlawful invasion and occupation of Kuwait. The Commission accepted claims of individuals, corporations and Governments and claims submitted by international organizations for individuals who were not in a position to have their claims filed by Governments. The Commission generally identifies six different categories of claims. One of them, category "F4 ", includes claims for environmental damage.

36. Within the category "F4", one can differentiate between monitoring and assessment claims, claims for expenses incurred for measures to abate and prevent environmental damage or for clean up or restoration measures and those, which seek for compensation for the depletion of or damage to natural resources as such. The latter would directly deal with the loss of biodiversity giving a compensable value to it.

37. However, Saudi Arabia, Iran, Jordan, Kuwait and the Syrian Arab Republic presented a proposal requesting the UNCC Governing Council to agree to a procedure under which awards for the monitoring and assessment claims would be made in advance of the review of the related substantive claims. The Governing Council decided that appropriate priority should be given to the processing of such claims, so that they could be resolved quickly and separately from the resolution of the claims related to environmental damage.

38. By this, the first and also the second instalment of "F4" claims deal only with claims to compensate the costs of assessing and monitoring the environmental damage and those claims for expenses incurred for measures to abate and prevent environmental damage and to clean and restore the environment.

G. National courts

Commonwealth of Puerto Rico v. S.S. Zoe Colocotroni, 456 F. Supp.1327 (1978); 628 F.2d 652 (1980)

39. The crew of a grounded barge discharged crude oil in order to lighten the vessel and free her from the reef upon which she had grounded. The oil slick found its way to a bay off the Puerto Rican coast and damaged a public mangrove forest located in a wetland area. The Commonwealth of Puerto Rico and the Environmental Quality Board (EQB) filed an action in admiralty claiming as damages, among other things, compensation to restore the mangrove forest. In the opinion of the Court, the appropriate standard was the cost of restoration or rehabilitation of the affected area to its pre-existing condition without grossly disproportionate expenditures. Should this not be possible, an alternative measure of damages could be "the reasonable cost of acquiring resources to offset the loss". While the replacement value of destroyed species was not accepted as an appropriate standard in this case, it was suggested that the cost of replanting was a reasonable approach. This case also suggested that rehabilitation of an area to its pre-existing condition and the replenishment of damaged biological resources could be considered as standards of compensation in the context of international regimes.

The Patmos Case (General Nation Maritime Transport Co v. The Patmos Shipping Co.), Court of Messina, 1st Civil Division (Italy), 30 July 1986

40. The Italian Government instituted a claim for ecological damage to the marine flora and fauna as a result of a collision between the Greek tanker *Patmos* and a Spanish tanker in the Strait of Messina, which caused oil to spill into the sea. The Italian Court of Appeal interpreted the 1969 International Convention on Civil Liability for Oil Pollution Damage broadly, conceptualizing environmental damage as "everything, which alters, causes deterioration in or destroys the environment in whole or in part."

Moreover, the Court asserted that the fact that such losses were difficult to compute would not hinder compensation. Instead, it recognized that the environment represents a value of its own thus recognizing that pure ecological damage is recoverable independently of economic loss. The Messina Court of Appeal, therefore, awarded the Government of Italy not only the damages to cover the costs of clean-up measures but also for pure ecological damage, i.e. damage that is not associated with an economic interest but relates, for example, to the reduction of fish stocks as such and other beneficial uses of the marine environment such as recreation and scientific research. For evaluating this kind of damage, the Court relied on principles of equity.

The Red Slicks of Corsica Case (Bastia Fishermen's Union et al. vs. Montedison Co., French Supreme Court (Cour de Cassation, 2nd Civil Chamber), 3 April 1978 (No. 106)

41. This case deals with the consequences of dumping industrial wastes into the Mediterranean Sea by the Milan based Montedison chemical company in 1969. Two company-owned tankers discharged the wastes on the high seas outside Italian territorial waters causing so called "red slicks" that led to an enormous public concern both in France and Italy. Especially affected were the waters of the island of Corsica. There was a visible loss of biomass that resulted in a production decline of fish. The fishermen of the area faced a serious loss of catch. Even though to a considerable extent there was proof of environmental damage through the dumping, the perpetrator was not held liable for some time and the dumping went on. Proceedings before Italian courts resulted in a sentence, which was later revoked on the basis of new legislation. However, the proceedings brought in front of the local French court by the Bastia Fisherman's Union and the French Government Departments of Upper and Southern Corsica were successful in the end. Montedison appealed arguing a lack of jurisdiction of the French courts, but it had no success. The French Supreme Court upheld the appellate decision and dismissed the recourse brought against the decision. Montedison was held liable as an operator, regardless of fault, as damage resulted from the wastes generated by the industry under its care and dumped on the high seas. There was no case of *force majeure* that could have exonerated the company upon proof. Investigating the harm to the environment the Court addressed the impacts of each waste (acid waste, ferrous salts, toxic metallic trace elements) very carefully before it turned to the question of damages that Montedison was ordered to pay.

I. Other forums

Cosmos 954 (Canada v. USSR.) 1979, 18 I.L.M. 899

42. This is the only case, which was handled under the *1972 Space Objects Liability Treaty*. The *Cosmos 954* was a Soviet Radar Ocean Reconnaissance Satellite (RORSAT) powered by a nuclear reactor that re-entered without control over a remote area of Canada. The satellite broke up on re-entry spewing radioactive debris over a large surrounding area. According to article II of the 1972 Space Objects Liability Treaty, the Soviet Union was absolutely liable. However, even if the Soviet Union acknowledged the incident and accepted its duties under the treaty, the question of damages remained an issue. Canada quantified them at approximately $14,000,000 for the clean-up operation that took place, claimed $ 6,041,174, but settled for $ 3,000,000. The damage seems to cover environmental damage to a limited degree in this respect, because of the lack of damage to any specific economic interests. However, it should be noted that the Treaty does not include environmental damage as such in its definition of damage. Related to this issue is the problem of quantifying environmental damage and whether there is a limit to claims. Looking at the agreement reached between Canada and the Soviet Union, which neither covers the actual costs nor the claimed amount of damages, some sort of limit obviously existed.

The Arun Valley Case (World Bank Inspection Panel proceedings 1994/95)

43. The World Bank Inspection Panel received a request from citizens of Nepal on 24 October 1994 claiming that their rights and interests were likely to be adversely affected by acts or omissions of the International Development Association (IDA) carrying out the design and implementation of the IDA project "Arun III", a hydroelectric power station. The requesters claimed to be, or likely to be affected directly by alleged violations of, *inter alia*, the operational directive 4.01 of the World Bank procedures, which deals with environmental impact assessment. The project included major impacts on the environment of the Arun Valley. The Panel found in its final investigation report that there was an insufficient compliance with, *inter alia*, the directive 4.01. The panel of experts dealing with environmental impact assessment had not been convened in the required way, so that it could not follow up on its recommendations. This and other missing but prescribed prerequisites led to the termination of the project.

US – Canada Lobster Dispute (Dispute settlement under the Canada – Unites States Free Trade Agreement, FTA decision May 21, 1990)

44. This case deals with the danger of extinction of the American lobster. The issue was brought up for dispute settlement within the framework of the United States – Canada Free Trade Agreement (FTA). American customs officers rejected the import of Canadian lobsters claiming that that they were too small in size and therefore immature. Canada, however, argued that the small size of their lobsters was due to the cold waters of Canada. The Panel of the FTA sided with the United States and declared that the lobsters were endangered and that the restrictions were legitimately placed on the Canadian lobster. It affirmed that the 1989 Amendment to the United States Magnuson Act, which, *inter alia*, extended the prohibition on the marketing of under-sized lobsters to lobsters harvested in foreign countries as well as to lobsters harvested in States having minimum lobster-size requirements lower than the United States is in line with the United States obligations under GATT Article XI, incorporated into the FTA regime. By this, the majority of the Panel accepted the conservatory character of the 1989 Amendment, though the obvious economic interests of the United States led the minority of the Panel to appraise the character of the Amendment also as a trade restriction. The latter concluded though, that even though the United States measures had some trade effects, in view of lack of necessary data, an estimate of the volume of trade that would be affected by the measures would at best be imprecise.

I. CASE-STUDIES

44bis. There are a number of case-studies pertaining to transboundary damage to biological diversity. These include large-scale driftnet fishing; irrigated agriculture; forest fires; military activities; oil spills as well as spills of other hazardous substances; and invasive alien species.

A. Driftnet Fishing:

45. Large-scale pelagic driftnet fishing represented a serious threat for different kinds of marine species of the North Pacific Ocean in the late 1980s. Not only the targeted fish species but also marine mammals such as whales, dolphins, fur seal etc. decreased in population, as they were unintended but unavoidable by-catch. The United Nations General Assembly adopted a resolution that called on members of the international community to impose a moratorium on all large-scale pelagic driftnet fishing in the high seas effective 30 June 1992 in response to the rising concern especially by the Russian Federation, the United States and Canada[2].

2 See UNGA Resolution 44/225 of 22 December 1989.

B. The Aral Sea

46. Having been exploited by humans for more than a thousand years, the Aral Sea kept its sustainable shape until the beginning of the twentieth century. Then the expansion and mechanization of irrigating agriculture, the opening of the Qaraqum Canal in 1956, the diverting of water from the River Amu Darya into the desert of Turkmenistan and the irrigation of millions of hectares of other land in the 1960s led to an immense drop of the water level of the Aral Sea. As the sea shrank, its salinity increased and the habitat of fish declined rapidly. The fish industry had to be shut down and the declining sea level lowered the whole water table in the region. Many oases near its shores were destroyed which caused the extinction of some species unique to the Aral Sea. The general habitat loss, however, is not only due to the increased salinity but also the additional conversion of delta wetlands into croplands and a shift of plant and animal population that was triggered by the drought and salinity. Indeed, a further threat to the environment came about by the establishment of a more continental climate in the region, induced by the loss of moderating influence of the Aral Sea. However, in 1988 under the Soviet regime a reduction of cotton production brought a gradually water level increase of the Aral Sea. After the collapse of the Soviet Union at the end of 1991 the issue moved into the hands of the five countries bordering the Aral Sea. In 1992 they signed an agreement pledging efforts toward Aral rehabilitation. However, little action has been taken and the situation of the Aral Sea deteriorates continuously3.

C. Fires in Indonesia

47. In 1997 thousands of hectares of Indonesian forest were scorched by wildfires4. The amount of carbon that was spewed into the atmosphere equalled the amount that the entire planet's biosphere removes from it in a year. In fact, the fires are seen as a major cause of the air's sudden increase in carbon dioxide in 1998. However, most of the carbon dioxide did not come from the burning trees but from smouldering peat bogs that became susceptible to fire as forest clearing, drainage and drought led to their withering. The peat bogs lost 25 to 85 cm of their depths in the fires. In the course of those events, of course, also the habitats of a variety of plants and animals were destroyed, and the effects of the fires in an overall perspective are of a global dimension.

D. Military Conflicts: The 1991 Gulf War:

48. The 1991 Gulf War had an immense impact on the ecological system of the whole region. Biodiversity was adversely affected through the impact of oil fires and oil spills on the flora and fauna of the region and by the climate changes resulting from the air pollution generated by the oil fires. A 1994 IUCN assessment of the environmental impact of the war notes adverse effects on both marine and terrestrial ecosystems and species. 5/

E. The Desaguadero oil spill

49. On 1 February 2000, approximately 29,000 barrels of refined crude oil and mixed gasoline spilled into the Desaguadero River in the Southwestern region of Bolivia6. A flash flood had broken the pipeline that transports oil from Bolivia to Chile. The oil spill had an immense effect on the habitat of

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3/ P. Sinnot, "The Physical Geography of Soviet Central Asia and the Aral Sea Problem", in *Geographic Perspectives on Soviet Central Asia*, Ed. by Robert A. Lewis, London and New York, Routledge, 1992, p. 86

4/ See J.S. Levine, T. Bobbe, N. Ray, A. Singh and R.G. Witt. *Wildland Fires and the Environment: a Global Synthesis.* Environmental Information and Assessment Technical Report UNEP/DEIA&EW/TR.99-1. United Nations Environment Programme, 1999, Nairobi, Kenya

5/ See IUCN, The 1991 Gulf War: Environmental Assessments of IUCN & Collaborators, IUCN, Gland, 1994.

6/ See Inter-American Development Bank, *Environmental and Social Impact Report, Bolivia, Transredes Capital Expenditures (2001-2005)*, October 2002

various species of birds and fish in the greater region, as the Desaguadero River is part of a larger basin system covering areas in both Peru and Bolivia. Different species of native fish and birds might have been affected, as the basin is an important stopover for migratory birds. Transredes, the operator of the pipeline, controlled by the Royal Dutch/Shell Group and Enron Development Corp., reacted to the oil spill with a delay of eight days and tried to downplay the disaster. The clean-up measures taken by the operator were highly insufficient thus not satisfactorily abating the consequences of the spill.

F. The Tisza River spill

50. On 30 January, 2000, a dam failure at the plant of Aurul S.A., a joint venture between the Romanian government, the Australian-based mining company Esmeralda Explorations and some small private investors, for production of gold in Baia Mare in Romania caused a spill of nearly 100,000 cubic meters of cyanide and heavy metal-contaminated liquid into the Lupus stream which upon reaching the Szamos, Tisza and Danube rivers killed hundreds of tons of fish and poisoned the drinking water of millions of Hungarian people[7]. Several hundred kilometres of river were polluted with potassium cyanide, which is a fatal substance that causes the breakdown of any cell respiration, so that organisms so to say suffocate from within. As fish are even more sensitive to the substance than humans and the amount of cyanide pollution in the river even equalled to 60 million lethal doses for humans, hundreds of tons of fish in the rivers were killed and the whole ecological balance of the rivers devastated. Although there have been fish-restocking efforts, it is estimated that just partial recovery will take up to 10 to 20 years of this area which covers several parts of special protected areas under the World Heritage Programme, the Ramsar Convention and UNESCO biosphere reserves.

G. Exxon Valdez

51. On 24 March 1989, the oil tanker *Exxon Valdez* struck Blight Reef in Prince William Sound, Alaska and spilled more than 11 million gallons of crude oil. Though this oil spill does not represent one of the largest ones, it is one with the most destructive consequences to the environment as an especially sensitive ecological system was hit[8]. The clean up measures took more than four summers. Some beaches remain still oiled today. Exxon says it spent $2.1 billion for the clean up itself. How many animals died outright from the oil spill could not be assessed properly. So far some of the species are still affected while others have recovered fully or are on their way to recovery.

H. The Jessica oil spill and the Galapagos

52. On 16 January 2001 the oil tanker *Jessica*, owned by Acotramar, ran aground at the entry of the port of Baquerizo Moreno on San Cristobal Island. It carried 160.000 gallons of diesel and additional 80.000 gallons of bunker fuel. The fuel began to spill but the Ministry of Environment, the Ecuadorian Army, the Charles Darwin Research Station and the Galapagos National Park with the assistance of Ecuadorian people and local and international experts succeeded in preventing this accident becoming a major ecological catastrophe for the Galapagos archipelago. However, whereas the immediate effects of the oil spill may have been less than in other cases as a large part of the oil spill crossed the archipelago on a southwest course thus missing the coastline, the total impact of the spill on the ecological system of the Galapagos cannot be estimated. Just recently, scientists confirmed that the *Jessica* spill might have subtle effects that take a long time to develop and can have serious impacts for components of the

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7/ See United Nations Environment Programme, *Rapid Environmental Assessment of the Tisza River Basin,* UNEP, Nairobi, 2004.

8/ See *Five Years Later: 1994 Status Report on the Exxon Valdez Oil Spill*, Exxon Valdez Trustee Council, Alaska, 1994.

Galapagos fauna9. For example an unnatural high mortality among Galapagos marine iguanas could be observed. Those developments prompted the judge handling the lawsuit of the Galapagos National Park against Petroecuador, Ecuador's state-owned oil company and owner of the spilled oil, the ship's insurer Teranova, Acotramar and the ship's captain, to reopen the investigation in that case. The Galapagos National Park sought compensation for damages amounting to US$ 14 million.

I. Invasive alien species

53. Many instances can be pointed out where introduced alien species become invasive resulting in severe disturbances in the pre-existing ecological balance of the ecosystem in which they are introduced. 10/

54. Among the notable cases is the example of the introduction in 1954 of the Nile Perch to Lake Victoria to counteract the drastic drop in native fish stocks caused by overfishing. It is quite illustrative of the possible severe and widespread consequences such introduction can lead to. The Nile Perch has contributed to the extinction of more than 200 endemic fish species through predation and competition for food. The flesh of the Nile Perch is oilier than that of the local fish so more trees are felled to fuel fires to dry the catch. The subsequent erosion and run-off contributed to increased nutrient levels, opening the lake up to invasion by algae and water hyacinth. These invasions in turn led to oxygen depletion in the lake, which resulted in the death of more fish. The far-reaching impact of this introduction has been devastating for the environment as well as for communities that depend on the lake.

55. The water hyacinth is an example of an introduced plant becoming one of the worst aquatic weeds in the world. It's a very fast growing plant with populations known to double in as little as 12 days. Infestations of this weed block waterways, limiting boat traffic, swimming and fishing. It also prevents sunlight and oxygen from reaching the water column and submerged plants, and its shading and crowding of native aquatic plants dramatically reduces biological diversity in aquatic ecosystems. The water hyacinth is now found in more than 50 countries in five regions.

56. Many introductions have caused major environmental or economical and human impacts. The introduction of the zebra mussel (*Dreissena polymorpha*) from Europe to the American Great Lakes in the 1980s is probably the most well known marine transfer in modern times. The zebra mussels are small freshwater molluscs that are native to the Caspian Sea region in Eurasia. They were likely transported to the Great Lakes via ballast water in a transoceanic vessel and released into Lake St. Clair, near Detroit, where the mussel was discovered in 1988. During the following years they have spread rapidly to all of the Great Lakes as well as major parts of the Mississippi river system. Tens of millions of dollars have already been spent repairing the damage caused by the zebra mussel to industrial intake and output pipes and to locks and other waterway structures in the Great Lakes system. Unless checked, further damage by this invasive mollusc over the next 10 years is expected to cost Canada and the United States another $5 billion.

9/ See Lougheed, L.W., G.J., Edgar, and H.L. Snell, (eds.) *Biological Impacts of the Jessica Oil Spill on the Galopogos Environment: Final Report, V.1.10*. Charles Darwin Foundation, Puerto Ayura, Galapagos, Ecuador, 2002.

10/ See IUCN, *100 of the World's Worst Invasive Alien Species: A Selection from the Global Invasive Species Database*, @ www.iucn.org/biodiversityday/100booklet.pdf

57. There are many more examples of adverse invasions both in environmental and economic terms. Ninety percent of species that have become extinct since 1800 were island birds, and 90 per cent of these have fallen victim to an invasive species. Many endemic bird species are in trouble in the Pacific, some directly threatened by predators such as rats and stoats, whilst others are threatened by loss of habitat and food due to smothering of their forests by introduced vines. Ship rats are one of the biggest threats to the survival of birds of the region – they eat eggs and young birds, especially of ground breeding species. In Christmas Island, which was famous for its red land crabs, the crazy ant developed huge super colonies that covered the ground and killed all the red land crabs in its path, although, millions of dollars later, it is hoped to be under control. An example of the impact invasive alien species can have on the economic sector. In Samoa a decade ago an outbreak of taro leaf blight, a fungal disease, decimated taro production, which formed a key part of the Samoan economy. It is estimated to have cost Samoa more than the impact of three cyclones, $US 40 million, to replace domestic consumption, lost exports and the cost of measures to control the disease.
