

The Precautionary Approach in Coastal/Ocean Governance: Beacon of Hope, Seas of Confusion and Challenges

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- The precautionary approach / principle sounds simple, straightforward and seems to be here to stay!
- + Captures common sense notions evident in many cultures
 - An ounce of prevention is worth a pound of cure
 - A stitch in time saves nine
 - Look before you leap
 - Better safe than sorry
- + Provides critical guidance for making environmental decisions

Where there is scientific uncertainty as to environmental effects of a proposed exploitation/use, decision-makers should “err on the side of caution”

- + Seems here to stay
 - Precautionary principle/approach has been embraced in over 50 international legally-binding agreements and over 40 non-binding instruments



– Examples include:

- * Montreal Protocol on Ozone Depleting Substances (1987)
- * UN Framework Convention on Climate Change (1992)
- * Convention on Biological Diversity (1992)
- * FAO Code of Conduct for Responsible Fisheries (1995)
- * UN Agreement on Straddling and Highly Migratory Fish Stocks (1995)
- * Cartagena Biosafety Protocol (2000)
- * Stockholm Convention on Persistent Organic Pollutants (2001)
- * Rio Declaration on Environment and Development (1992)
- * World Summit on Sustainable Development (WSSD) Plan of Implementation (2002)



- Three images help capture how the precautionary approach / principle has been faring in governance practice

1. Beacon of Hope

2. Sea of Confusion

3. Sea of Challenges



1. Beacon of Hope

The precautionary principle/approach may be likened to a lighthouse beacon with various potentially powerful beams for avoiding the shoals of depleted resources, losses of biodiversity and harm to the marine environment:



- Placing the burden of proof on proponents of development / change
- + No approval should be granted unless the proponent establishes some standard of safety/acceptability
- + Examples of standards
 - No significant damage to the marine environment
 - No serious or irreversible harm to marine biodiversity
 - No unreasonable adverse effects on the marine environment

- Establishing prohibitions (for example, no deliberate introduction of non-indigenous species, no import or production of genetically modified organisms)



<http://www.naturalindependent.com/wp-content/uploads/2012/12/gmsalmon.jpg>

- Imposing zero discharge or virtual elimination standards at least for toxic substances that are persistent and bioaccumulate
- Adopting “reverse listing” where only substances listed as safe can be manufactured or marketed

- Legal “revolution” to strong version seen in ocean dumping field
- + London Convention 1972 favours polluters and is permissive in approach.
 - Anything can be dumped with a permit except substances on a “prohibited list”:
 - * Mercury
 - * Cadmium
 - * Organohalogen compounds
 - * Persistent plastics
 - * Various oils
 - * Biological and chemical warfare materials
 - * Radioactive wastes
 - * Industrial wastes
 - * Incineration at sea of industrial wastes and sewage sludge



+ 1996 Protocol to London Convention adopts “reverse listing” approach where listing favours the environment and is precautionary

– Nothing can be dumped unless it is listed on a “safe list”:

- * Dredged material
- * Sewage sludge
- * Fish wastes
- * Vessels and platforms or other man-made structures
- * Inert, inorganic geological material
- * Organic materials of natural origin
- * Bulky items primarily comprising iron, steel, concrete, and similarly unarmful materials for which concern is physical impact (limited to where wastes are generated at locations having no practicable access to disposal options other than dumping)
- * Sequestration of carbon dioxide under the seabed



- Even for waste on the “safe list”, Annex 2 of the Protocol further encourages a precautionary approach through the permitting process:
 - * The permitting authority is encouraged to require ocean dumping applicants to undertake waste prevention audits
 - > Whether waste reduction / prevention at source is feasible, for example, through product reformulation, clean production technologies
 - > If so, applicants should be required to formulate a waste prevention strategy and waste reduction / prevention requirements should be included as permit conditions
 - * Permitting authority is obligated to refuse issuing a permit if appropriate opportunities exist to re-use, recycle or treat the waste without undue risks to human health or the environment or disproportionate costs
 - * The permitting authority is also urged to deny an ocean dumping permit if an environmental assessment does not include adequate information to determine the likely effects of the proposed disposal

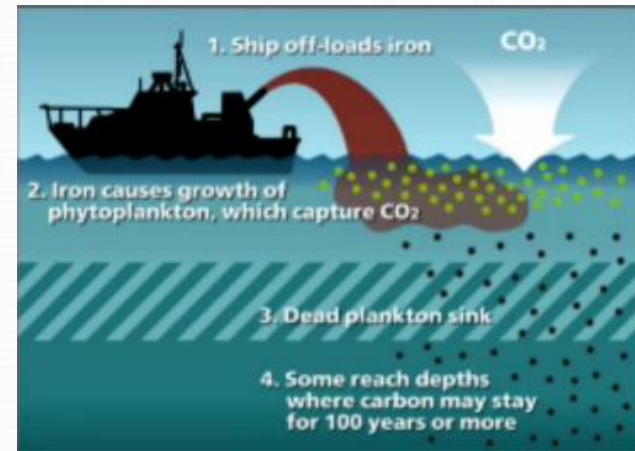


– In October 2013, Parties to the 1996 Protocol adopted amendments to ensure a precautionary approach to future marine engineering interventions, especially ocean fertilization

* New Annex 4 prohibits ocean fertilization activities except for legitimate scientific research

- > Such proposed scientific research must undergo a detailed environmental assessment with specifics set out in a new Annex 5 before a permit is granted
- > Permits to be issued only if the assessment determines that the pollution of the marine environment is as far as practicable prevented or reduced to a minimum

* Additional geoengineering activities may be added to Annex 4 for precautionary controls



- The reverse onus of proof approach in international fisheries has been adopted on occasion in rather narrow circumstances
- + This “powerful beam” version of precaution in international fisheries is exemplified by the banning of large scale driftnets on the high seas
 - Moratoria on all large-scale pelagic driftnet fishing urged to be implemented by all States with moratoria lifting dependent on demonstration of effective conservation and management measures and ensurance of conservation of living marine resources (UN GA Res. 44/225 adopted December 1989)
 - Global moratorium on all large-scale pelagic driftnet fishing to be fully implemented on the high seas, including enclosed and semi-enclosed seas by 31 December 1992 (UN GA Res. 46/215 adopted 20 December 1991)

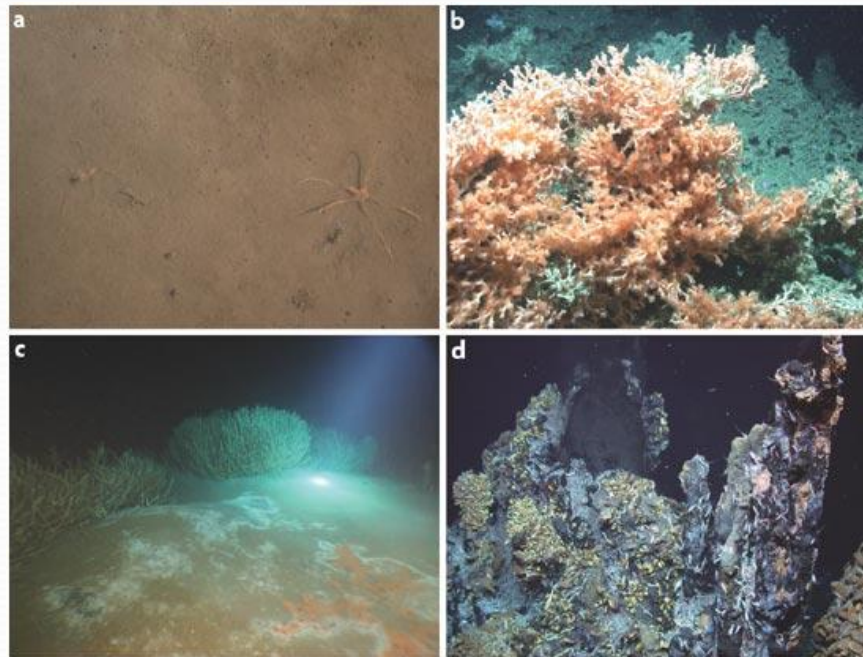


http://weblog.greenpeace.org/deep-sea/images/hammerhead_grace.jpg

- + More recently, the global community has adopted a form of burden of proof reversal to bottom fishing activities
 - Through UN Sustainable Fisheries Resolution 61/105 in December 2006
 - * Called upon Regional Fisheries Management Organizations or Arrangements (RFMO/As)
 - > To close vulnerable marine ecosystems (VMEs), including seamounts, hydrothermal vents and cold water corals, to bottom fisheries
 - > To ensure bottom fishing activities do not proceed unless conservation and management measures have been established to prevent significant adverse impact on VMEs
 - * Urged States negotiating new RFMO/As, such as in the South Pacific, to adopt like precautionary measures on an interim basis



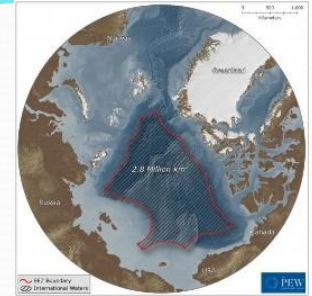
- Through International Guidelines for the Management of Deep-sea Fisheries on the High Seas (2008) States and RFMO/As are urged to close VMEs until appropriate conservation and management measures have been adopted
 - * To prevent significant adverse impacts
 - * To ensure long-term conservation and sustainable use of deep-sea fish stocks



Nature Reviews | Microbiology

<http://www.nature.com/nrmicro/journal/v5/n10/images/nrmicro1745-i1.jpg>

- A strong precautionary approach has also been extended to the central Arctic Ocean (CAO)
- + A draft *Agreement to Prevent Unregulated High Seas Fisheries in the CAO* was concluded on 30 November 2017 by the five Arctic coastal States, plus China, Iceland, Japan, South Korea and the EU
- + Includes various commitments
 - Not authorizing flagged vessels to conduct commercial fishing in the CAO unless conservation and management measures have been adopted by one or more regional or subregional fisheries management organizations or arrangements or pursuant to interim measures that may be adopted by the Parties under the Agreement
 - Establishing, within 3 years of entry into force of the Agreement, conservation and management measures for exploratory fishing



- Adopting, within 2 years of the Agreement's entry into force, a Joint Program of Scientific Research and Monitoring and a data sharing protocol
- Convening meetings at least every two years
 - * To review Agreement implementation
 - * To consider whether to commence negotiations to establish one or more additional regional or subregional fisheries management organizations or arrangements
- + Opened for signature at a ceremony in Ilulissat, Greenland on 3 October 2018



- Precaution has potential to powerfully guide governance within nations also
- + Example of North Pacific Fishery Management Council in the USA imposing a precautionary moratorium on commercial fisheries in Arctic waters off Alaska (pursuant to a 2009 Arctic Fishery Management Plan)
- + Moratorium in effect until further scientific information is available on the fish stocks and their ecosystems



2. Sea of Confusion

Various confusing currents (“swift seven”)

- (i) **Definitional generalities**
- (ii) **Definitional variations**
- (iii) **Uncertainty in terminology**
- (iv) **Wide spectrum of precautionary management measures available**
- (v) **Differing academic views on implications**
- (vi) **Limited and varied interpretations by national tribunals/courts**
- (vii) **Limited interpretations by international tribunals/courts**



(i) **Definitional generalities**

- For example, Rio Declaration, Principle 15

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

+ Definition leaves considerable interpretive leeways

- What exactly are State capabilities?
- How should serious or irreversible damage be defined?
- What should be the role of science in determining risks?
- What are cost-effective measures?



- Definitional generality also hovers over international fisheries law, e.g.,
- + UN Agreement on Straddling and Highly Migratory Fish Stocks (1995) provides:

States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. (Art. 6(2))



- + FAO Code of Conduct for Responsible Fisheries (1995) urges:

States should apply the precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures. (Art. 7.5.1)

+ FAO Technical Guidelines on the Precautionary Approach to Capture Fisheries and Species Introductions (1996) also overflow with generalities

- No clear allocation of burden of proof

Technical Guidelines call for “appropriate placement of the burden of proof” (para. 6(h))

- Vague guidance on standard of proof

Technical Guidelines provide the standard of proof “should be commensurate with the potential risk to the resource, while also taking into account the expected benefits of the activities.” (para. 7(d))



(ii) **Definitional variations**

- The “trigger” for precaution
 - + Threats of serious or irreversible damage (Rio Declaration)
 - + Likely to cause damage or harm (North Sea Ministerial Declarations)
- The “scope” of activities covered
 - + Toxic, persistent, bioaccumulative substances (1987 London Declaration)
 - + All policy sectors (1990 Bergen Declaration on Sustainable Development)



In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent, and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation.

- The “cost-effective” limitation
- + Rio Declaration calls for cost-effective measures
- + Biodiversity Convention does not include the cost-effective limitation

Noting also that where there is a threat of significant reduction of loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat....

(Preamble)



(iii) Uncertainty in terminology

- Approach vs. principle?
- Is there a difference?
- + No - The terms are interchangeable (for example, Rio Declaration uses both terms)
- + Yes - The term approach is preferable because it
 - Better connotes the non-legally binding nature (US and Canada preference in *Beef Hormones Case* (1998) before the WTO Appellate Body)
 - Avoids extreme applications (FAO preference to avoid fishing moratoria and reversal in burden of proof to fishers to show “no harm”)
 - FAO Technical Guidelines on Precautionary Approach state: “[A]lthough the precautionary approach to fisheries may require cessation of fishing activities that have potentially serious adverse impacts, it does not imply that no fishing can take place until all potential impacts have been addressed and found to be negligible.” (para.7(b))



(iv) Wide spectrum of precautionary management measures

- Not just strong versions such as reversal in the “burden of proof”
- Weaker versions also, e.g.
 - + Mandating regulators to apply the precautionary approach
 - + Imposing a best available technology standard
 - + Following an adaptive management approach (learn by doing)
 - + Setting cautious standards to limit impacts (for example, margins of safety to protect children’s health)
 - + Placing the burden on regulators to justify taking precautionary measures through scientific risk assessment

**WORLD TRADE
ORGANIZATION**



- A menu of fisheries management measures
 - + Setting cautious quotas (For example, catch limits so as not to reduce average biomass of target/non-target species by more than 20%)
 - + Terminating open access fisheries and developing management plans within certain time frames
 - + Promoting selective fishing gears/methods
 - + Requiring EIAs before opening new fisheries
 - + Allowing fish to spawn at least once
 - + Establishing limited take marine protected areas



- 1995 UN Fish Stocks Agreement (Annex II) urges application of precautionary reference points to manage straddling and highly migratory stocks.

+ Limit reference points

- Conservation thresholds that should not be exceeded to ensure harvesting is within safe biological limits
- Maximum sustainable yield should be regarded as a minimum standard for limit reference points
- Example would be setting a precautionary level for spawning stock biomass below which it should not fall



- + Target reference points
 - Intended to meet management objectives
 - No examples of types of management objectives given
 - Example might be setting a target of returning a stock biomass to a healthy historical level



- + Precautionary reference points shall be used to trigger pre-agreed conservation and management actions (for example, a recovery plan where a stock falls below the limit reference point)

- One of the most confusing issues regarding precautionary management measures is the relationship between precaution and adaptive management
- + Is adaptive management a separate principle?
- + When might an adaptive management approach be appropriate rather than a strong precautionary approach (reversal of the onus of proof)?
 - Limited guidance from the IUCN (Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management (2007))
 - Not much guidance in State practice



(v) Differing academic views on implications

- Enthusiastic and “little doubt” about precautionary approach in environmental governance

+ Richard C. Hildreth et al.

The precautionary approach entails a reversal of the burden of proof. Reversing the burden of proof requires shifting the burden from those who seek to regulate an activity to those who propose and would benefit from the activity.

(“Roles for a Precautionary Approach in Marine Resources Management”
(2005) 19 *Ocean Yearbook* 33, 36)



- Skeptical and “lots of doubt” about PP providing guidance
- + Jaye Ellis and Alison FitzGerald

The precautionary principle “does not tell decision-makers or individual actors what to do or when; it does not reverse the burden of proof; and it does not place environmental concerns ahead of social and economic ones.”

(“The Precautionary Principle in International Law: Lessons from Fuller’s Internal Morality” (2004) 49 *McGill L.J.* 779, 782)

- Authors have lamented over the literary explosion and confusion
- + Jaye Ellis, “Overexploitation of a Valuable Resource? New Literature on the Precautionary Principle” (2006) 17 *European Journal of International Law* 445-462
- + Arie Trouwborst, “The Precautionary Principle in General International Law: Combating the Babylonian Confusion” (2007) 16 *RECIEL* 185-195



(vi) Limited and varied interpretations by national tribunals / courts

- Courts in majority of countries have yet to address interpretation and jurisprudential implications of the precautionary principle / approach.
- Varied national interpretations / approaches to precaution with courts / tribunals displaying a spectrum from strong to weak embraces (over 200 cases in Commonwealth countries alone)
- + Example of strong embrace
 - India Supreme Court case – The high point of judicial activism
 - *Case Against Cultured Shrimp (S. Jagannath v. Union of India and Others, [1996] INSC 1592 (11 December 1996)*
 - Public interest lawsuit brought by non-governmental organization, seeking to
 - * Ensure enforcement of a national coastal zone regulation prohibiting intensive shrimp culture farms within 500 metres of the high tide mark



- * Force application of pollution control and environmental assessment laws to commercial shrimp farms outside the prohibited zone
- Supreme Court of India enthusiastically embraced the precautionary principle
 - * Indicated that the precautionary principle is an essential feature of the concept of sustainable development which has been accepted as part of customary international law (though its salient features have yet to be finalized by international law jurists)



- * Interpreted what the precautionary principle means in the context of domestic law
 - > Governmental environment measures must anticipate, prevent and attack the causes of environmental degradation
 - > Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
 - > The “onus of proof” is on the actor or the developer / industrialist to show that his / her action is environmentally benign



- * Issued various orders/directions including
 - > Removal of all shrimp culture ponds from 500 metre coastal prohibited zone
 - > Establishment by the central government of a regulatory authority to ensure precautionary pollution controls and EIA of shrimp industrial developments outside the prohibited area



- + Case representing a “weak” version of precaution
 - *Homalco Indian Band v British Columbia (Minister of Agriculture, Food and Fisheries)* (2005), 39 BCLR (4th) 263 (British Columbia Supreme Court)
 - Homalco Indian Band challenged governmental grant of approval to raise Atlantic salmon on a fish farm instead of previously stocked Pacific salmon
 - Grounds of challenge included government failure to adequately consult with the Indian band and failure to properly apply the precautionary principle



- Indian band argued strong “reverse onus” approach to precaution
 - * No approval of farming Atlantic salmon should be granted until the British Columbia ministry and industry proponent can prove there is no risk to wild salmon
 - * Gaps in scientific knowledge and research make such proof impossible
 - * Therefore, no approval should be allowed



- British Columbia Ministry and aquaculture proponent argued
 - * Against a strong “reverse onus” approach
 - * In favour of a weakened version
 - > “[T]he principle really means that lack of scientific knowledge is not a basis for failing to pass regulations or controls to avoid potential serious or irreversible damage to the environment.”
 - > We have already passed precautionary regulations, for example, regarding escape prevention requirements through technical standards for net pens



– British Columbia Supreme Court agreed with the government / industry position on precaution

* The precautionary principle does not require governments to halt all activity which may pose some risk to the environment until that can be proven otherwise.

* The decisions on what activity to allow and how to control it often require a balancing of interests and concerns and a weighing of risks. Court suggested an adaptive management approach would be a proper means of accommodation which should be the topic of further discussions / consultations.



- British Columbia Court found there had not been adequate consultation with the Indian band
- * Court left it to Department of Fisheries and Oceans to further consult with the Indian band



<http://www.agf.gov.bc.ca/fisheries/images/bcsalm1.jpg>

(vii) Limited clarifications provided by two of the main international tribunals

International Court of Justice (ICJ)

International Tribunal for the Law of the Sea (ITLOS)

Two images help capture the roles of the ICJ and ITLOS in addressing the precautionary approach

- Paltry Progressions
- Jurisprudential Jousting



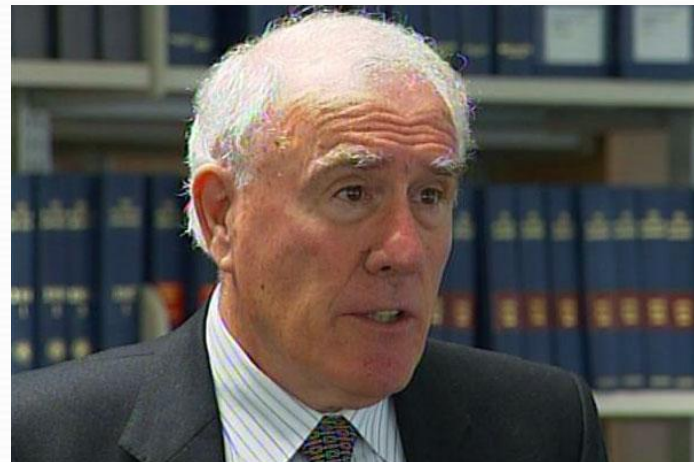
- **Paltry Progressions**

Both the ICJ and ITLOS might be described as adopting “cautious approaches” to precaution with two ICJ and three ITLOS cases demonstrating the phenomenon

+ ICJ cases



- *Nuclear Tests (New Zealand v. France)* (1995)
 - * Proposed underground nuclear testing in the South Pacific by France
 - * New Zealand seeking to reopen its previous case against France in 1973/74
 - > ICJ judgment of 20 December 1974, dealing with French atmospheric nuclear testing, left open the possibility of litigative resumption if the judgment was “to be affected” by subsequent events
 - > France had withdrawn its acceptance of compulsory ICJ jurisdiction in 1974
 - * New Zealand arguing precautionary principle meant French obligation to
 - > Undertake an EIA before nuclear testing
 - > French burden of proof to demonstrate no environmental contamination
 - * No decision on merits because of lack of jurisdiction
 - * Dissenting opinion of Geoffrey Palmer suggested the precautionary principle may be a principle of customary international law but did not flesh out what the content might be



- *Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay) (2010)*
 - * Argentina contesting the construction of two pulp mills in Uruguay adjacent to a transboundary river
 - > Various procedural violations of the Statute of the River Uruguay (1975 Treaty) argued including shortcomings in notifications and consultations
 - > Various substantive obligation breaches also argued such as the prevention of pollution
 - * Argentina, as a key proposition, argued the precautionary approach should place the burden of proof on Uruguay to establish that the mills will not cause significant damage to the environment
 - * The majority of the ICJ, avoiding any detailed discussion of the precautionary approach, simply concluded in para. 164
 - > A precautionary approach may be relevant in the interpretation and application of the provisions of the Statute
 - > It does not follow that the precautionary approach operates as a reversal of the burden of proof



– Other ICJ cases have also only “tangentially touched” on precaution

* *Legality of the Threat or Use of Nuclear Weapons* (1996)



* *Case Concerning Gabčíkovo-Nagymaros Project (Hungary v. Slovakia)* (1997)

+ ITLOS cases

– *Southern Bluefin Tuna Cases* (August 1999)

- * Australia and New Zealand arguing Japan should be stopped, based on the precautionary principle, from unilaterally increasing catch levels of southern bluefin tuna
- * Tribunal did not expressly address the precautionary principle but gave it an “implicit” mention

[I]n the view of the Tribunal the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna ... (para. 77)

* Tribunal’s Provisional Measures Order

- > Required Japan to refrain from further “experimental fishing”
- > Encouraged resumption of negotiations among the parties with a view of reaching agreement on conservation and management measures
- > Encouraged Australia, Japan and New Zealand to make further efforts at reaching an agreement with other States and fishing entities engaged in southern bluefin fishing



- * Two judges (Shearer and Laing) in separate opinions indicated the provisional measures ordered were based on precaution
- * Judge Laing raised question of whether the precautionary principle should reverse onus of proof to the party wishing to increase catch levels, but felt question should be left to full arbitration
- * Arbitral Tribunal ultimately declined jurisdiction (Award of 4 August 2000)



– *Case Concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore) (2003)*

* Malaysia seeking provisional measures requiring Singapore to suspend land reclamation activities, to provide full information about the projected works, to afford Malaysia full opportunity to comment upon the works and to negotiate with Malaysia concerning unresolved issues



* Malaysia arguing various breaches of the 1982 Law of the Sea Convention provisions including failure to undertake an adequate environmental impact assessment

* Malaysia also argued breach by Singapore of the precautionary principle under international law

* The Law of the Sea Tribunal avoided detailed addressing of the precautionary principle.



> Simply noted that the possible implications of land reclamation on the marine environment required “prudence and caution” whereby Malaysia and Singapore must establish mechanisms for exchanging information assessing the environmental risks or effects and devising ways to deal with the environmental impacts

> Tribunal prescribed provisional measures

† Calling upon Malaysia and Singapore to cooperate and to enter into consultations in order to promptly establish a group of independent experts to study the effects of Singapore’s land reclamation and to propose measures to address any adverse effects

† Directing Singapore not to conduct its land reclamation in ways that might cause serious harm to the marine environment

- *Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons or Entities with Respect to Activities in the Area* (Seabed Disputes Chamber, ITLOS, 2011)
 - * At the request of Nauru, the Council of the International Seabed Authority (ISA) requested an advisory opinion regarding the legal responsibilities and extent of liability of States sponsoring deep seabed mineral activities.



- * The Chamber noted that the two sets of Regulations adopted by the ISA on prospecting and exploring for polymetallic nodules (2000) and for polymetallic sulphides (2010) both require sponsoring States to apply a precautionary approach, as reflected in Principle 15 of the Rio Declaration, in order to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area (para. 125)

- * The Chamber did not provide a detailed discussion or jurisprudential analysis of the precautionary approach.
 - > The Chamber merely noted the various questions of interpretation left open by the Principle 15 text, such as “serious or irreversible damage”, “cost-effective measures” (paras. 128, 129)



- > The Chamber indicated that the precautionary approach is also an integral part of the general obligation of due diligence of sponsoring States, which is applicable even outside the Regulations:

This obligation applies in situations where scientific evidence covering the scope and potential negative impact of the activity in question is insufficient but where there are plausible indications of potential risks. A sponsoring State would not meet its obligations of due diligence if it disregarded those risks. Such disregard would amount to a failure to comply with the precautionary approach. (para. 131)

- > The Chamber further observed that in light of the growing number of treaties and other instruments incorporating the precautionary approach, “This has initiated a trend towards making this approach part of customary international law.” (para. 135)



• Jurisprudential Jousting

- + Two ICJ judges stand out for jousting in the environmental context against the dominant judicial philosophy towards international law – *legal positivism*
 - International law is solely based upon State consent and negotiation
 - The “legal will” of States may be found in the three sources of International Law set out in Art. 38 of the ICJ’s Statute
 - * Treaties
 - * Customary international law
 - * General principles of law recognized by civilized nations (common principles drawn from domestic legal systems)



+ Judge Cancado Trindade (Member of the ICJ, 2009-present)

- In the *Pulp Mills* case, Separate Opinion, he lamented over the missed opportunity for the ICJ to affirm and elaborate on the general principles of international environmental law including the precautionary principle
 - * “It escapes my comprehension why the ICJ has so far had so much precaution with the precautionary principle.” (para. 67)
 - * “The Hague Court ... is not simply the International Court of Law, it is the International Court of *Justice*, and, as such, can not overlook *principles*.” (para. 220)
- He noted the historical and scholarly debate whether the category of general principles of law recognized by civilized nations opens the door to *natural law* principles
 - * General principles based upon human values and common sense
 - * General principles recognizing the laws of nature (environmental limits and thresholds)



- He embraced and encouraged a natural law approach to the category of general principles
 - * “General principles of law emanate ... from human conscience, from the universal juridical conscience, which I regard as the ultimate ‘material source’ of all Law.” (para. 62)
 - * “[I]t is imperative to keep on swimming against the current, to keep on upholding firmly the application of general principles of law, in addition to the pertinent positive law.” (para. 206)
 - * Examples of principles having an axiological dimension and reflecting values of the international community include prevention, precaution, sustainable development and intergenerational equity (para. 210)
- Judge Cancado Trindade did expand somewhat on the precautionary principle
 - * Calls for consideration of alternative sources of action in the face of probable threats or dangers (para. 71)
 - * Requires before the issuance of authorizations *reasonable* assessment in the face of probable risks and scientific uncertainties which may include
 - > A complete environmental impact assessment
 - > Careful environmental risk analysis
 - > Further environmental studies (para. 96)
- He stopped short of a reverse burden of proof analysis

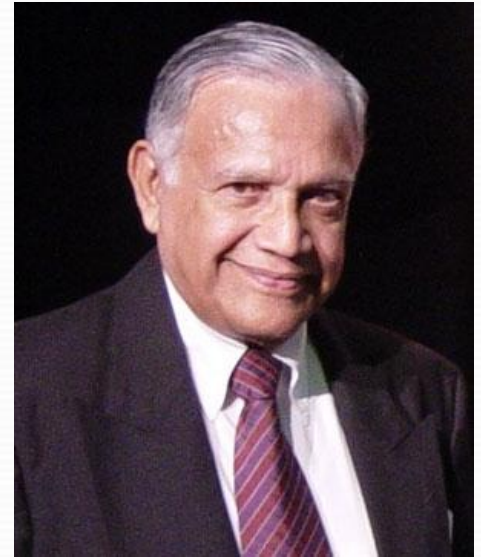


- Judge Weeramantry (Member of the ICJ, 1991-2000)

- Also a proponent of “judicial activism” in developing the principles of international environmental law

- * His main philosophical approach might be described as “sociological jurisprudence”, that is, looking to historical and present social/cultural practices for general principles of international law, e.g.

- > Sustainable development principle in relation to balancing development and environmental dimensions of harnessing streams and rivers may be derived from numerous legal systems including Asia, the Middle East, Africa, Europe , the Americas, the Pacific and Australia (Separate Opinion in the *Gabcikovo-Nagymaros* case)
 - > Prohibition on hyper-destructive weapons in times of war may be deciphered from various ancient civilizations (Dissenting Opinion in the *Legality of the Threat or Use of Nuclear Weapons* case)



- * He also recognized the potential “supplementary door” of natural law in general principle evolution
 - > Key principles of environmental law, such as the precautionary principle, trusteeship of the earth resources, the burden of proving safety lies upon the author of the act complained of, and polluter pays, do not depend for their validity on treaty provisions
 - > They are part of customary international law
 - > They are part of the *sine qua non* for human survival (Dissent in *Nuclear Weapons* case, pp. 502-504)
- Judge Weeramantry in his dissent in the *Nuclear Tests* case (1995) would have allowed New Zealand to reopen the 1973/74 case and he indicated likely support for New Zealand’s key principled arguments
 - * Reverse burden of proof to France
 - * Environmental impact assessment requirement before proceeding



3. Sea of Challenges

Putting the precautionary approach into practice has not been easy as demonstrated in the fields of fisheries management and climate change

(i) Practical and political realities have made for “rough sailing” in fisheries management



- Practical constraints
- + Limited financing and human resources for research in support of setting reliable precautionary reference points
 - For 2018, over 50 per cent of the FAO Members reported insufficient personnel to generate data in support of sustainable fisheries management
 - Only about 50 per cent of key national stocks are considered to have reliable estimates on stock status
- + Major knowledge gaps include
 - Stock status
 - Catch data and effort data
 - Ecosystem factors
 - Level of IUU fishing

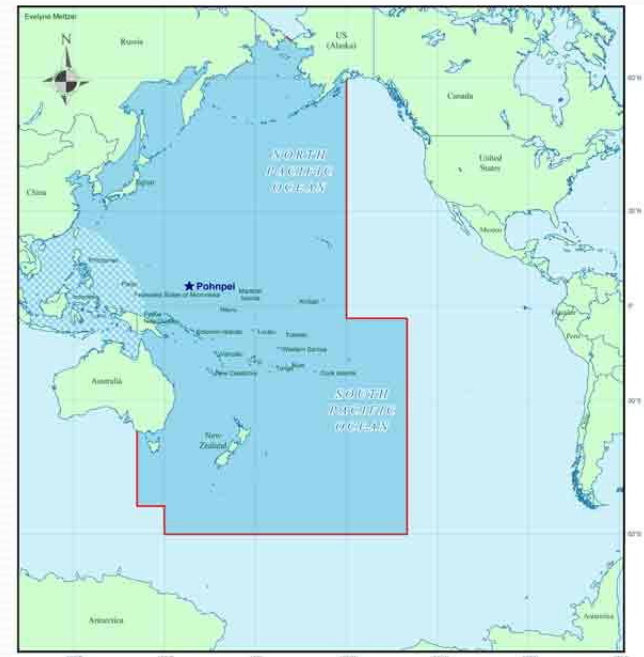


- Political realities
- + Three political realities stand out in precautionary approach implementation at both the national and regional levels
 - Setting high total allowable catches even when scientific information is lacking or limited
 - Ignoring or over-riding precautionary scientific advice because of socio-economic pressures
 - Failing to legally require the following of precautionary scientific advice in establishing fisheries management measures



- Implementation difficulties exemplified by Western and Central Pacific Fisheries Commission and its management of Pacific bluefin tuna

+ The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (opened for signature on 5 September 2000, in force 19 June 2004)



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Map Reproduction: Modified Global Overview of Straddling and Highly Migratory Fish Stocks, Evelynne Melikian, working paper 04/2005

Western and Central Pacific Fisheries Commission (WCPFC)
 ★ Headquarters: Pohnpei, Federated States of Micronesia

— RFMO Boundary
 ▨ Boundary not defined

- Post-UNFA
- Commission members agree to apply the precautionary approach (Art. 5)
- Commission is mandated to determine stock-specific reference points based on the best scientific information available (Art. 6)

- + Scientists have assessed the Pacific bluefin stock to be near historically low levels and heavily overfished with depletion to 2.6% of unfished levels
- + Reaching agreement on reference points has not been possible



- At the 2017 meeting of the Northern Committee (28 August - 1 September), the Committee committed to developing limit and target reference points through a management strategy evaluation (MSE) process (2019-2024)



(ii) “Rough waters” in the climate change context also

- The Paris Agreement, adopted in December 2015, might be described as discretionary rather than precautionary
- + Negotiations largely focused on achieving a long-term global average temperature goal set out in Article 2:
 - Holding the increase in the global average temperature to well below 2° C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5° C above pre-industrial levels ...
- + Oceans only mentioned once in the Paris Agreement text in the Preamble:



Noting the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of “climate justice”, when taking action to address climate change ...

- + Mitigation commitments stand out as very discretionary
 - Each Party required to prepare and communicate a nationally determined contribution (NDC) towards mitigation with successive NDCs (every 5 years) expected to be progressive and ambitious (Art. 4(2)(3))
 - Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets (Art. 4(4))
 - All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies ... (Art. 4(19))
 - Parties aim to reach a global peaking of GHG emissions as soon as possible and to achieve a balance between anthropogenic emissions by sources and removals by sinks in the second half of this century (Art. 4(17))



- Future progressions will largely depend on implementation efforts under the Paris Agreement
- + Ramping up national CO₂ mitigation commitments
 - Current pledges on nationally determined contributions (NDCs) to GHG emission cuts are estimated to fall way short of meeting even the 2^o C target
 - * Intergovernmental Panel on Climate Change (IPCC) Special Report on the Impacts of Global Warming of 1.5^oC above Pre-industrial Levels, issued in October 2018, estimates a global warming of about 3^oC by 2100 in the wake of current mitigation ambitions



- Adverse impacts of ocean acidity on coral reefs and some aquaculture operations already suggest the 1.5^o C target may be imperative

- Donald Trump's announced withdrawal from the Paris Agreement has put a further concern on whether mitigation efforts will be adequate



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Conclusion: Cautions about Precaution

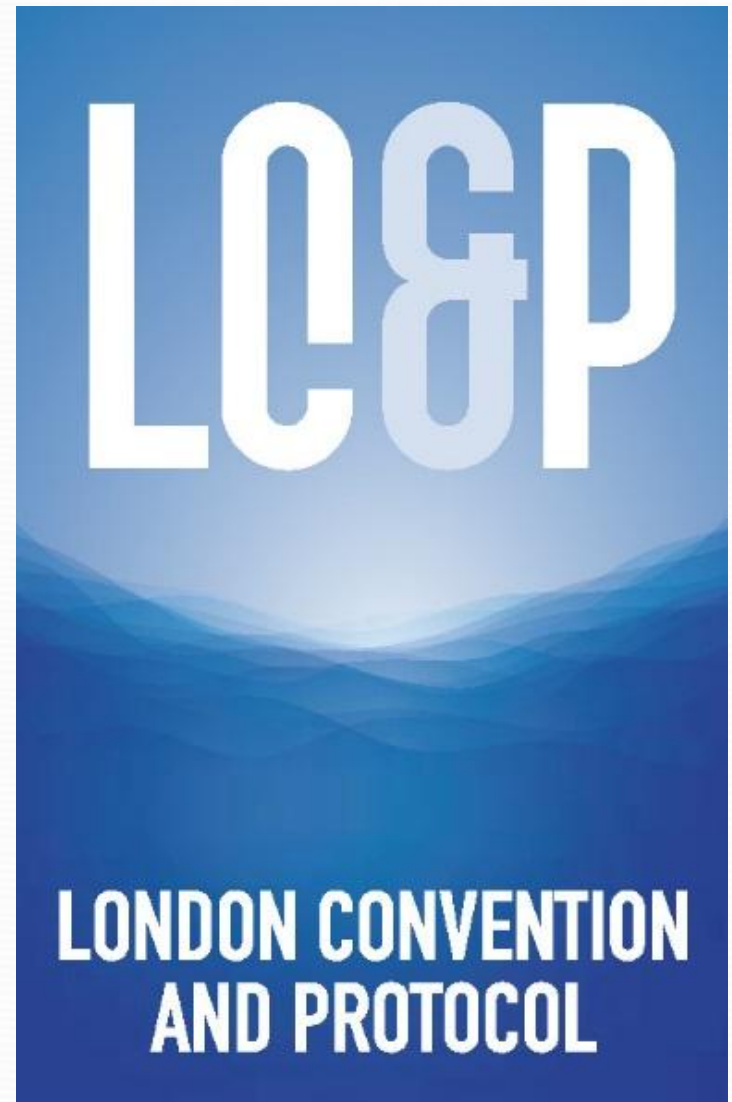
- Does not fill the numerous global “governance gaps”, e.g.,
 - + No convention on land-based pollution/activities (“soft” Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, 1995)
 - + No comprehensive convention on sea-bed activities (MARPOL 73/78 only covers oily platform drainage [not to exceed 15 ppm] and garbage disposal from rigs [no disposal except for ground food wastes if more than 12 nm from land])
 - + No comprehensive chemicals convention
 - + No integrated management arrangements for the high seas



- Does not fix weak international environmental standards that exist, for example
 - + Sewage from ships
 - + MARPOL Convention's Annex IV continues an antiquated, non-precautionary distance from land approach
 - Allows ships to discharge comminuted and disinfected sewage (from approved systems) at a distance of more than 3 nautical miles from land
 - Allows sewage which is not comminuted or disinfected to be discharged at a distance of more than 12 nautical miles from land



- Does not ensure political will for countries to adopt and implement international agreements promoting the precautionary approach, e.g.,
 - + 1996 Protocol to the London Convention
 - Only 50 Contracting Parties as of 10 October 2018
 - + 1995 UN Fish Stocks Agreement
 - Only 89 Parties as of 27 October 2018



- Does not automatically become operative at the national level
- + Future incorporation will largely depend on
 - Further national legislative and regulatory embraces



- Further national policy formulations

- Does not “swim alone”
- + Numerous other principles of sustainable development must also be put into practice
- + Those principles include
 - The ecosystem approach
 - Public participation
 - Social equity
 - Intergenerational equity
 - Integration (Especially integrated coastal management)
 - Polluter pays
 - Environmental impact assessment
 - Pollution prevention
- Nevertheless, precaution continues to be a fundamental principle and aspirational beacon in the global quest for sustainable seas and healthy coastal communities!

