**INTRODUCTION**

International Environmental Law (IEL) is in relation of attempt to control pollution and depletion of natural resources within the frameworks of sustainable development. It is a branch of public international law which is a body of law created by states for states to govern problem arises between states.

IEL covers topic such as population, biodiversity, climate change, ozone depletion, toxic and hazardous substances, air, land, and sea and transboundary water pollution, conservation of marine resources, desertification and nuclear damages.[[1]](#footnote-1)

The principle of international environmental law consist of precautionary principle, prevention principle, sustainable development, the polluter pay principle, integration principle and public participation principle.[[2]](#footnote-2)

This paper will elaborate and explain three of the principles and elaborates further under which relevant treaties or conventions that adopted these principles. The discussion will be centre on background of the principle, its meaning and how it is adopted in current international environmental law. The discussion will also focus on the results of the principles via adoption and enforcement of international legal instrument and elaborate on any future improvement that can strengthen the legal instrument and eventually achieve the objective of these principle.

**PRECAUTIONARY PRINCIPLE**

The Precautionary Principle aims to prevent harm from happening rather than manage it after it happened. In common language, this means “better safe than sorry.” The Precautionary Principle denotes a duty to prevent harm, when it is within our power to do so, *even when all the evidence is not in*. In short, the “precautionary principle” supports taking protective action before there is complete scientific proof of a risk; that is, action should not be delayed simply because full scientific information is lacking.

Issues of the 1960s, i.e. the case of DDT (dichlorodiphenyltrichloroethane)[[3]](#footnote-3) have led environmentalist and policy makers to rethink their approach to specifically address uncertainties. This event have paved way during the 1970s for establishment of precautionary principle as a reaction to “the limitation of public policies based on a notion of “Assimilative capacity”. i.e. that humans and the environment can tolerate a certain amount of contamination or disturbance, and this amount can be calculated and controlled “.[[4]](#footnote-4)

 The 1970s also showed the emergence of the principle in the United States. Although the term is not used, the essence of the precautionary principle can be found in several laws such as the U.S. Federal Food, Drug and Cosmetic Act of 1958 (Section 409), which outlawed any food additive that was found to induce cancer regardless of the dose taken.[[5]](#footnote-5)

The precautionary concept found its way into international law and policy as a result of proposals from environmentalists and European governments. The 1982 United Nations World Charter for Nature provided that when “potential adverse effects of an activity are not fully understood, it should not proceed”[[6]](#footnote-6)

On 25 March 1985, the Convention for the Protection of the Ozone Layer (Vienna Convention) was adopted by 20 countries and the European Commission. It is the first multilateral treaty to make explicit reference to precaution”. As there was still no scientific certainty on the causes and impacts of ozone depletion at the time of adoption, the Convention’s later success was due largely to its precautionary nature

In 1987, the Protocol to the Vienna Convention was adopted in Montreal.[[7]](#footnote-7) During the Earth Summit [[8]](#footnote-8)at Rio de Janeiro, Brazil in 1992, the community of nations represented therein came up with the Agenda 21. Chapter 17 thereof refers to the precautionary concept, *viz*:

*“A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, inter alia, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, wastes audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for handling of hazardous substances, and a comprehensive approach to damaging impact from air, land and water” (Agenda 21, Chap. 17).*

This paragraph is not only a manifest endorsement of the precautionary principle, but it also clearly relates the precautionary concept to a number of specific measures which would enhance precautionary policies with respect to oceans, seas and the marine environment.

Significantly, the adoption of the Rio Declaration at the United Nations Conference on Environment and Development (UNCED) in 1992 signified that “the precautionary concept has become essential to international environmental policy”. Principle 15 of the Rio Declaration provides hence:

“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.” (Rio Declaration, 1992)

Along with the Rio Declaration, the Convention on Biological Diversity, (CBD) which also provided for precautionary concept, was adopted in 1992 during the Earth Summit.

Event in year 1992 also paved the way for the convergence of the precautionary principle and the climate change issue in international law. At Rio de Janeiro, the world acknowledged the precautionary principle at the level of international law when it adopted the United Nations Framework Convention on Climate Change ( UNFCCC) under Article 3.[[9]](#footnote-9)

A reference to the afore quoted article was provided in the Preamble of the 1997 Kyoto Protocol[[10]](#footnote-10) and worded as follows, “Being guided by Article 3 of the Convention”. The precautionary principle is thus a norm that parties to the UNFCCC have endorsed.

The result of the precautionary principle are fruitful and works perfectly for the ozone conventions[[11]](#footnote-11) and CBD and its protocols[[12]](#footnote-12) but hardly make any impact on the climate change legal instruments[[13]](#footnote-13). A few factors that contribute to this results will be discussed further where comparison will be make between the ozone conventions and the climate change conventions.

Firstly, the ozone conventions[[14]](#footnote-14) were ratified by nearly all nations but the Kyoto protocol were not ratified by major greenhouse emission nation (the United State) and Canada also later withdraw from the protocol. This comparison showed clearly that all nation are in union to tackle the ozone problem but the same cannot be said for the climate change convention where there are no commitment and effort showed by the biggest greenhouse emission nations.

Secondly, the Montreal protocol enable parties to quickly respond to new scientific information and agree to accelerate reduction required on chemical which it already cover and after such adjustment automatically apply to all countries that ratified the protocol.[[15]](#footnote-15) The Kyoto protocol in other hand does not deter free-riding and non-compliance by its contracting parties to reduce admission by certain period.[[16]](#footnote-16)This comparison showed why the ozone conventions are more successful where contracting parties to the ozone conventions showed interest and effort to do whatever they can to reduces ozone depletion whereas in the Kyoto protocol no enforcement and action taken against the non–compliance parties and against the free rider.[[17]](#footnote-17)

Thirdly, the Montreal protocol provides an effective mean to dispute resolution through the Non Compliance procedure and the procedure intended to create a multilateral mechanism that would build confidence through non confrontation discussion rather than adjudication and help parties pursue amicable solution to problem arising from the protocol.[[18]](#footnote-18) Meanwhile, under the climate change conventions, as discussed earlier there are lack enforcement and also lack of co-operation between parties to settle any dispute. For example, there are dispute between Argentina and United Kingdom on the application of the Kyoto protocol on territories disputed by both nation and China informed that they do not want the protocol to include its territories of Hong Kong and Macao.[[19]](#footnote-19)

Next are the economic benefit. It is clear that ozone conventions are much more successful as there are alternative to CFC[[20]](#footnote-20). The production industries are making alternative to CFC and this also boost the economics because of mass production of CFC replacement which in return generate income to the industries and boost the economics of a nation. Meanwhile the Kyoto protocol are costly to implement as it involved reduction of main source of energy like coal and petroleum to reduce greenhouse emission. The current United States under President Donald Trump even blatantly dismissed the existence of greenhouse gas effect and even provides unconditional support to the energy industries.

In Conclusion, the application of precautionary principle are widely applied in current international legal instrument and saw a huge success in ozone conventions but a slow progress and near failure for the climate change convention. The reasons are as discussed earlier but the application of this principles are vital in recognizing the issue in international environmental law and implementing prevention and also solution to the problem arises.

**PREVENTION PRINCIPLE**

The prevention principle allows action to be taken to protect the environment at an early stage. It is not only a question of repairing the damages after they have occurred but to prevent those damages from occurring at all. It means in short terms: it is better to prevent than to repair.[[21]](#footnote-21)

The principle have similarity with precautionary principle but the main differences is the precautionary principles mainly deals with matters that cause destruction and damages to environmental through scientific analysis on matter not yet proven while prevention principle deals with direct act of human being that bring destruction to the environment.

The importance of this principle was underlined in a major oil spill disaster of “Torrey Canyon” disaster in 1967 where the entire cargo of the vessel had spilled 120 000 tonne of oil in the English Channel and caused major environmental disaster and this incident surely draw the international community attention for a need of legal instruments to govern similar incident based on the prevention principle.

The current formulation of the principle of prevention in the environmental context was introduced in 1972 in principle 21 of the Stockholm Declaration on the Human Environment[[22]](#footnote-22) which stated:

*States have . . . the sovereign right to exploit their own resources . . . and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*

In the year 1973, International Convention for the Prevention of Pollution from ships 1973 (MARPOL) was formed. MARPOL was signed on 17 February 1973 and entered into force on 2 October 1983 with 154 state parties. It is the most comprehensives and current operative international legal instrument on prevention of vessel source pollution with the clear objective to achieve the complete elimination on intentional pollution of the marine environment by oil or other harmful substances and minimizes the accidental discharge of such substance.

The provisions under MARPOL deals with jurisdiction, powers of enforcement, and inspection by States in the prevention of pollution by ships. Article 4 prescribes that any violation is punishable either under the law of that Party or under the law of the flag State. Article 5 provides on the certification and special rules on inspection of ships in order to ensure safety and pollution compliance with “the powers to inspect, detain and prosecute given to flag States and port States”. Besides, the flag States and port States are empowered to demand the certificates in which failure to produce the certificates or improper certificates can result in “sailing permission being withheld” . A valid certificate is a proof that the ship complies with requirements under MARPOL. However, the flag States and port States must not cause undue delay to the ships in which any ships being unduly detained or delayed under articles 4, 5 or 6 must be compensated for any loss or damage suffered.

Another requirement under MARPOL is an oil record book that contains the movement of cargo oil and its residues and are subject to be inspected by any member states at any time. The six Annexes under MARPOL lay out the technical regulation which deal with aspect of operational pollution.

Annexes I regulates on the prevention of pollution by oil from operational measures as well as from accidental discharged by requiring ships to have equipment and plans in cases of oil spills. Annexes II deals with regulation to control pollution by Noxiuos liquid substance[[23]](#footnote-23). Annex III is the prevention of pollution by harmful substances carried by sea in package form. Annex IV prevent pollution by sewage from sea and discharged is prohibited unless a ship has approved sewage treatment plan. Annex V is the prevention of pollution by garbage produced from ships. Lastly, Annex IV regulates on prevention of air pollution from ships by controlling emissions of nitrogen oxides and sulphur oxides.

The provision of MARPOL clearly in line with the prevention principles and it also introduces inspection and enforcement mechanism and it may be apply also on non-member state ships by the state member authority.[[24]](#footnote-24)

Another relevant convention which apply the prevention principle is “*The Basel Convention on the control of transboundary movement of hazardous wastes*” (Basel Convention). On 22 March 1989, 116 countries adopted the Convention and it came into force on 5 May 1992. There are currently 186 parties to the convention with only the United State as the only developed nation which did not ratify it.[[25]](#footnote-25)

The main objectives of the Convention are:

1) To reduce transboundary movement of hazardous waste to a minimum, consistent with sound environmental management

 2) To treat and dispose of hazardous wastes and other wastes as close as possible to their source of generation in an environmentally sound manner

 3) To minimise the generation of hazardous waste and other waste

The Convention regulates the transboundary movement[[26]](#footnote-26) of hazardous and other wastes applying the “Prior Informed Consent” procedure (shipments made without consent are illegal).[[27]](#footnote-27) Shipments to and from non-Parties are illegal unless there is a special agreement.[[28]](#footnote-28) The Convention obliges its Parties to ensure that hazardous and other wastes are managed and disposed of in an environmentally sound manner.

The application of the “prior informed consent” procedure can be simplified as following:

1. The exporting state must notify the transit and importing state of any proposed transboundary movement and the information regarding the waste.[[29]](#footnote-29)
2. Information of the waste must clearly indicate effects on proposed movement on human health and environment.
3. The importing state will respond by giving consent or deny the application or required further information.
4. The import state can prohibit the movement without prior written consent by transit state.[[30]](#footnote-30)
5. The convention provide any transboundary movement of hazardous waste without consent is illegal[[31]](#footnote-31) and this act is criminal[[32]](#footnote-32).
6. Any breach of the convention shall be govern by the contracting party’s national legislation in accordance with the convention.[[33]](#footnote-33)

On 10 December 1999, The Basel Protocol on liability and Compensation (the Basel Protocol) was adopted to deal with liability caused by damages of transboundary movement of hazardous waste. Article 5 of the protocol impose financial compensation on damages to protect claimant and leave it to individual state to impose domestic caps on liability. There are currently just 13 signatories and 11 parties to the protocol.[[34]](#footnote-34)

Examples of wastes regulated by the Basel Convention are Biomedical and healthcare wastes , Used Oils , Used Lead Acid Batteries, Lithium Batteries, Nickel cadmium Batteries , Persistent Organic Pollutant wastes, chemicals and pesticides that persist for many years in the environment ,E-waste etc.

Coming back to the prevention principle, it is now important to see the result of both convention whether their existence and implementation reach the objective and the prevention principle in general. For MARPOL, the statistic show that there has been a decline in the amount of oil entering the sea from seas specifically dues to oil spills. In 1970s, 24.5 spills per year and from 2010 to 2016, the number of spills have greatly reduced to 1.7 spills per year.[[35]](#footnote-35) For Basel convention, after 20 years, toxic waste colonialism are still a problem[[36]](#footnote-36) as there are increase of hazardous waste and the harsh economic pressure.

From the result so far, it seem that MARPOL are more successful compare to the Basel Convention even though both convention apply the prevention principle. However, it cannot be said for certain that the Basel Convention is a total failure as the advancement of technology and human demand have increase the amount of hazardous waste especially by develop country which always look for convenience and cheap way to dispose of their waste.

A few steps and action can be taken to strengthen both convention especially the Basel Convention. First, it is important to persuade the United State to ratify the Basel Convention as they are one top producer of hazardous waste and the facts the involvement of United State can encourage compliance with the convention considering the US having the largest Navy fleet in the world and can monitor transboundary movement of hazardous waste in open international sea. Secondly, there is a need for assistance in term of technology, enforcement team and monetary aid in accordance with co-operation principles[[37]](#footnote-37) stated in both convention from the develop country to developing countries in enforcing the provision of both conventions. For example, developing countries in African continent lack aid to stop act of dumping hazardous waste in their territory by foreign ships[[38]](#footnote-38) even though they are member of both convention. This is where the develop country must play the role in lending the support.

Next, is the United Nations must take proactive action and lobby for a more heavier sanction like economic sanction against nation which is responsible for major oil spills and toxic terrorism. If such sanction can be imposed by UN against Iran for its nuclear programme, there is no reason not to use the same action against environment terrorist.

In conclusion, the prevention principle which is adopted and apply in both convention are necessary to prevent an environment disaster. Both convention have positive and also negative result so far but the existence and enforcement of both conventions are important international legal instrument to prevent any environmental disaster for particular acts cover under both convention.

**THE SUSTAINABLE DEVELOPMENT PRINCIPLE**

The sustainable development implies two main objectives, which are environmental protection and economic development. The economic development can also be referred as a mean of the poverty alleviation.[[39]](#footnote-39)

In the economic development, there should be a priority to the needs of the people, especially those who are in poverty. Even though the present generation is pursuing the economic development and poverty alleviation, this should not cause harm to the environment which the future generations will depend on in order to meet their needs. In other word, although the sustainable development recognizes the economic development as a mean of achieving poverty alleviation, it limits such development on the ground of environmental protection for the needs of the present and future generations.

This principle was first acknowledge in Stockholm Declaration , which refers to the balance between the environmental protection and the economic development, says that in order to provide the maximum benefit to the people, the States should integrate economic development with protection of the environment.[[40]](#footnote-40) While the States have a sovereign right to use their own natural resources, they must ensure that such use does not adversely affect the environment of neighbourhood States[[41]](#footnote-41). The World Charter for Nature mentions about the importance of environmental protection in the economic development. It also emphasises on the specific principles of environmental protection, which are designed to guide the economic development.[[42]](#footnote-42) Next, the Rio Declaration emphasises on the principles in the Stockholm Declaration. It states that States must apply the precautionary principle in balancing between the economic development and the environmental protection.[[43]](#footnote-43)

The principle of sustainable development was stated comprehensively in the **1985 ASEAN AGREEMENT ON THE CONSERVATION OF NATURE AND NATURAL RESOURCES**. It main objective is to conserve wild flora, fauna and renewable resources through the protection of ecosystem, habitats and endangered species and by ensuring sustainable use of harvested one. The preamble of the agreement propounds the inter-relationship between the conservation and socioeconomic development wherein the conservation is deemed necessary to ensure the sustainability of development whereas the socioeconomic development is necessary for the achievement of conservation.

The agreement contains 8 chapter with 35 article which required its contracting parties to apply the sustainable development principle, identified the interdependence of natural resources in attaining a balance ecosystem, ensures the parties that caused damages be accountable, deal with environmental planning measures, establishment of scientific research and public participation, and emphasis on co-operation between members.

Unfortunately, even though this agreement was regarded as ahead of it time, it is not enforce until this date and only 3 out of 6 national which signed it have ratified the agreement. This main reason for this is the contracting member state where not involved in preparing the agreement and the agreement was prepare by other organization[[44]](#footnote-44) which caused the ASEAN member to be reluctant to ratified an convention which they do not understand, did not fully agreed on and will incurred costs in implementation.

In the context of Malaysia, the principle of sustainable development is provided via the provision in the Environmental Quality Control Act 1974. Any prescribed activities like major development project, logging, mining, quarries and other are subject to environment impact assessment (EIA) approval before works can begin.[[45]](#footnote-45) The report is a study to identify, predict, evaluate and communicate information about impacts on environment of a proposed project and to details out mitigating measures prior to project approval and implementation.[[46]](#footnote-46)

However, even with the EIA report requirement, the enforcement and environment effect are still questionable in Malaysia context because of the uncontrolled and devastating bauxite mining activities in Pahang and the rare earth plant issue which is also in Pahang. Nevertheless, to be fair, those two cases make the main headline where environmental effect was obvious. Other project and development are also subject to this requirements in Malaysia and so far there are no major/serious issue except for the two case mentioned.

Going back to the international level, there seem to be hope in the silver lining. The **United Nations Conference on Sustainable Development** (**UNCSD**), also known as **Rio 2012**, was the third international conference on [sustainable development](https://en.wikipedia.org/wiki/Sustainable_development) aimed at reconciling the economic and environmental goals of the global community.

The conference, was organized by the United Nations Department of Economic and Social Affairs and included participation from 192 UN member states including 57 Heads of State and 31 Heads of Government, private sector companies, NGOs and other groups. It was intended to be a high-level conference, including heads of state and government or other representatives and resulting in a focused political document designed to shape global environmental policy.[[47]](#footnote-47) The summit resulted in non-binding declaration by head of 192 nation to emphasise the need of development which is within the limit of sustainability.

In Conclusion, the importance of sustainable development principle in environmental law is undeniable and in my opinion is the most important principle in current age of advancement of technology, wealth and with limited resources. The greed of man will never end but there need to be clear understanding that development without sustainability will be equivalent to us causing our own destruction slowly but surely it will happen.

**CONCLUSION**

This paper have elaborate the 3 principle of international environmental law and how it is applied in international convention and treaties. The result of compliance, strength and weaknesses was discussed and recommendation to strengthen these legal instruments was also make.

It is obvious that the treaties and convention which bring economic benefit and have clear working mechanism like the ozone treaties is achieving its target and same goes to MARPOL where prevention were implemented earlier[[48]](#footnote-48) before the acts occurred. The slow progress of Basel convention and Kyoto protocol are clearly because the large production and consuming of products in current worlds which cannot keep up with the objective of these convention even though it also have working mechanisms in achieving it objectives.

It is important that the world recognized the danger of environment disaster are real and imminent unless real action is taken in accordance with available measures already agreed. Going by the paste of current world and materialistic important, it seem such recognition will have to come in a hard way ( for example, disaster like major flooding because of greenhouse effect) to bring us to our senses but when that time come, everything is already too late.

The world leader, NGO and relevant parties must now act and make in depth analysis why certain convention works and why some not and try to implement the values in the working convention into the other important convention.

In example, introduce and fund a new source of clean energy to combat greenhouse emission and global warming. The source identified are solar, wind, biomass, hydro damn, biofuel to substitute fossil fuel, coal and nuclear energy.

Finally, are we that greedy to begin with? We are being that being gifted with magnificent brain to have critical thinking and why would we let matter like money, ego, power, and politic blind us to obvious danger of environmental disaster. When we are sick we quickly go to see a Doctor and when we are being oppress we united and bring down the tyrant. Is it so difficult to works together and only think of our own benefit and our, family, children and grandchildren benefit. What is the use of billions in bank accounts or unlimited power and recognition if in the end our own children and generation will suffer and eventually the human race will perish.

**THE END**

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