

Negotiations of the Montreal Protocol to Protect Global Ozone Layer (O₃) from Chlorofluorocarbons (CFCs) by Using UNEP as Global Forum in Promoting the Precautionary Principle Based on Global Environmental Governance and Law Perspectives

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Abstract: Global environmental governance and law principles provide the focal framework for global collaboration along with the global community in order to safeguard Mother Nature at the national, regional and global levels. At each level, the conscientiousness has driven out to be progressively more multifarious as new protagonists and concerns are drawn into the global governance process. Some of the global environmental governance scholars have suggested that a global forum might have an influence on the negotiations for creating Multilateral Environmental Agreements (MEAs) by promoting the precautionary principle. Moreover, the existence of such a forum would lead to global cooperation in order to achieve sustainable development. The Montreal Protocol has managed to seek global environmental cooperation among almost all of the states in the world, which made the Montreal Protocol become a successful one. Therefore, the primary purpose of this study is to explain the influence of the United Nations Environment Programme (UNEP) global forum in the global environmental governance by promoting the precautionary principle with regard to the Montreal Protocol's early negotiations and the relations of the interstates' participation response. This study has adopted the qualitative approach, which is based on the meetings' proceeding reports of the Montreal Protocol. This study has also acknowledged that the global forum of UNEP had played an essential role as a strong environmental forum by promoting the precautionary principle in order to influence the Montreal Protocol's early negotiations and the response of the interstates' participation. Based on the results of the analysis, we have identified the main themes as activities and committees, while the eight sub-themes are meetings, workshops, conferences, coordinating committees, secretariat, advisory panel, working groups and Governing Council. Finally, the preliminary findings indicate that UNEP as a global forum which promotes the precautionary principle in the negotiations of the Montreal Protocol was important in terms of to lead for further development and expansion of the rules on global environmental governance and law in order to seek global environmental cooperation to protect global ozone layer (O₃) from Chlorofluorocarbons (CFCs).

Key words: Global ozone layer, montreal protocol, law perspectives, CFCs, UNEP

INTRODUCTION

Global environmental governance and law principles provide the focal framework for global collaboration along with the global community in order to safeguard Mother

Nature at the national, regional and global levels. At each level the conscientiousness has driven out to be progressively more multifarious as new protagonists and concerns are drawn into the global governance process. It begun with two nations, Great Britain and France, which

negotiated for the Convention on Fisheries Conservations 1867 and until today, we have witnessed >150 nations negotiate for the Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997 (Breitmeier, 1997; Sands, 2003).

These two above-mentioned environmental agreements point out that the global governance offers the same function, which is to ensure a framework that able to provide an assortment of members of the global community, which may cooperate and collaborate. This cooperation and collaboration will create customary conduct and subsequently reconcile differences.

Global governance for environmental protection: A number of players are involved in the global legal order that deals with environmental issues, predominantly in the negotiations for Multilateral Environmental Agreements (MEAs). Besides country representatives, those playing an essential role, are observers to the Montreal Protocol on Substances that Deplete the Ozone layer 1987 and the Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997 negotiations, who would identify global institutions and non-governmental players energetically involved in negotiations (Seaver, 1997; Barrett, 2003). Global governance is described by this observable fact that the likely exclusion of the rights of individuals leaves it unique. There have been a number of explanations that discuss those situations. Countries are engaged because they have to deal with legal aspect. Global institutions are involved due to their role established by countries to deal with specific environmental concerns. Meanwhile, a range of non-governmental players participates in the negotiations for the MEAs such as scientific community, business entities and global environmental civil societies (Harris, 2002).

Some of the global environmental governance scholars such as Breitmeier (1997), Seaver (1997), Harris (2002), Sands (2003) and Breitmeier *et al.* (2006) have suggested that global forums of global institutions might influence the negotiations for creating MEAs. Moreover, the existence of the global forum of global institutions would lead to global cooperation in order to achieve sustainable development and subsequently to protect global environment.

Global institutions for environmental protection: The global institutions have taken a somewhat *ad-hoc* approach towards the setting up for the MEAs. In the early days, MEAs did not generally develop eminent organizations to manage or supervise the implementation of those provisions of the MEAs. In 1945, after the Second World War, the number of global institutions had

grown in the form of formal or informal acclimatising existing institutions bequeathed have authority in the field of environmental matters. Almost, all global institutions currently are having some responsibility for the negotiations and implementation of MEAs. However, these global institutions are decentralised in nature, which can be categorised into three groups. These three groups are global institutions associated with the United Nations, regional institutions outside the United Nations' structure and institutions developed by global environmental laws (Breitmeier, 1997; Sands, 2003).

United Nations (UN): The UN Charter does not stipulate expressly that it has authority over environmental and human habitat issues. According to Article 1 (1-3) of the UN Charter, these provisions have highlighted the roles of the UN, which comprise the preservation of global security and peace, the espousal of actions to reinforce global peace and the triumph of cooperation in solving global humanitarian, economic, cultural or social problems. Nevertheless, in the late 1960s, there was concern by the UN on the environmental and human habitat issues. Under the United Nations General Assembly (UNGA) 1972, through resolution 2997, the United Nations Environment Programme (UNEP) was formed (Breitmeier, 1997; Sands, 2003).

United Nations Environment Program (UNEP): The UNEP has played an important function in the emergence of MEAs. The UNEP, which is based in Nairobi, has the ultimate goal of promoting global environmental cooperation in order to protect global environment and human habitat with emphasis on sustainable development. The UNEP has managed to successfully build global environmental cooperation for establishing several MEAs, which include the Vienna Convention, the Montreal Protocol, the Basel Convention and the Convention on Biological Diversity. The UNEP is also, endowed with secretariat roles to these MEAs (Breitmeier, 1997; Harris, 2002; Sands, 2003).

Precautionary principle: According to Article 38 (1) of the Statute of the Global Court of Justice, sources of the global law are:

- Global conventions
- Global custom, as an evidence of a general practice accepted as law
- The general principles of law recognised by civilised nations
- Judicial decisions of the Global Court or Tribunal

Table 1: General principles of law that concern with global environmental protection

No.	Principles of law
1	Precautionary principle
2	Preventive principle
3	Polluter-pays principle
4	Good neighbourliness and global co-operation principle
5	Common but different responsibility principle
6	Principle 21 of the stockholm declaration and principle 2 of the rio principle

Modification from Sands (1995)

Table 2: List of global conventions that required scientific evidence in taking actions

No.	List of global conventions
1	Global whaling convention, 1946
2	Antarctic seals convention, 1972
3	World heritage, 1972
4	London convention, 1972
5	Bonn convention, 1979

It is clearly that the general principles of law are being considered as the sources of the global law. Basically, there are seven general principles of law that concern with global environmental protection, which is highlighted in Table 1.

Therefore, this study will concentrate and discuss one of the above-said general principles of law, which is the precautionary principle and this study will look into the role of the principle in protecting the environment in order to achieve sustainable development based on the global legal perspectives.

The precautionary principle gives direction and assistance in the development and appliance of the global environmental law where, there is scientific doubt (Sands, 2003). This principle derived from the traditional approach in dealing with global environmental protection. According to the traditional approach, where all parties concerned have been called and these parties created their institutions in order to adopt and apply decisions that are found upon scientific evidences or knowledge and information accessible at that particular occasion (Harris, 1991; Sands, 1995). This traditional approach has been highlighted in the following global conventions that have been listed down in the Table 2.

Basically, this traditional approach put forward that act shall only be taken where there is scientific findings that noteworthy environmental harm is taking place and on other hand, in the absence of the scientific evidence, therefore, no action may be necessary.

However, in middle 1980s, where a change of the traditional approach has been shown. Example of a change of the traditional approach has been shown include Ministerial Declaration of Global Conference on the Protection of the North Sea, 1984, which allows states to take action without the scientific evidence of damaging effects since the damage of the marine environment cannot be remedial or irreversible for a short period (Sands, 2003). In addition, the Montreal Protocol, 1987, which applies precautionary principle approach rather

than the traditional approach, where allows states to take action without the scientific evidence of damaging effects in dealing with controlling emission of (chlorofluorocarbon) CFCs.

In 1990, the Bergen Ministerial Declaration on Sustainable Development in Economic Commission for Europe (ECE) region was the first instrument to link with the sustainable development principle and the precautionary principle (Sands, 1995). According to paragraph 7 of the Bergen Ministerial Declaration on Sustainable Development, 1990 states that:

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

Since, the above-said Declaration, there are a number of the environmental treaties that have adopted the precautionary principle into those instruments. In 1991, Bamako Convention has linked and put together the precautionary principle and the traditional approach, where this formulation in Bamako Convention does not need to be irreversible or serious and lesser the entrance, at which scientific proof might need action. According to the Article 4(3)(f) Bamako Convention, 1991 states that:

The preventive, precaution approach to pollution, which entails, inter alia, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. These parties shall co-operate with each other in taking the appropriate measures to implement the precautionary principle to pollution prevention through the application of clean production method.

As for parties involved in the Transboundary Watercourses Convention, 1992 agreed upon to adopt the same approach in Bamako Convention, 1991. Based on the Article 2 (5) (a) of the Transboundary Watercourses Convention, 1992 provides that:

By virtue of which action to avoid the potential transboundary impact of the release of the hazardous substances shall not be postponed on the ground the scientific research has not fully proved a causal link between those substances, on the other hand and the potential transboundary impact on the other hand.

Some environmental treaties do not specifically express in adopting the precautionary principle as part of their instruments but these environmental treaties noted the precautionary principle in their Preamble. For an example, the Biodiversity Convention, 1992 does not expressly specifically adopt the precautionary principle but in the Preamble of the Biodiversity Convention, 1992 provides that:

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

Moreover, the Earth Summit at Rio de Janeiro in the year 1992 has adopted the precautionary principle. It is clearly that shown and highlighted in the Principle 15 of the Rio Declaration. The principle 15 of Rio Declaration states that:

Where, there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as reason for postponing cost-effective measures to prevent environmental degradation.

Scope of this study: The success of the global environmental cooperation in the MEAs is based on the consensus agreement among member states. Hence, this study is looking into the ability of the UNEP as a global environmental institution in influencing the global environmental cooperation of the MEAs by focusing on one of the successful MEAs such as the Montreal Protocol 1987. The Montreal Protocol has been enacted for the protection of the ozone layer by taking precautionary measures to control world emissions of substances that deplete the ozone layer (Sands, 2003). Awareness of the existence of ozone layer i.e., O₃ at the stratosphere and threat of Chlorofluorocarbons (CFCs) as ozone depletion substance increased radically in the early years of 1970s (Seaver, 1997; Breitmeier, 1997; Breitmeier *et al.*, 2006). Moreover, scientists as well as policy makers had made a lot of initiatives to capture global attention on the threat of CFCs towards the ozone layer. As a result, in the middle of the 1980s, ozone layer problems became a global concern (Breitmeier, 1997; Breitmeier *et al.*, 2006). Starting from this point, the global concern became the catalyst for the global environmental cooperation and gave birth to the Montreal Protocol 1987 (Barrett, 2003; Sands, 2003).

Therefore, this study concentrated on global institutions associated with the United Nations with focus on the United Nations Environment Programme (UNEP). Under the Montreal Protocol, this study has also

acknowledged that the global forum of the United Nations Environment Programme (UNEP) had played an essential role as a strong environmental forum by promoting the the precautionary principle in order to influence the Montreal Protocol's early negotiations and the response of the interstates' participations and cooperation.

Objectives of this study: This study embarks on the following objectives:

- To identify and analyse the themes and sub-themes related to the influence of the global forum of the UNEP for promoting the precautionary principle in the early stage of negotiations that build up the global environmental cooperation in the Montreal Protocol
- To explain the influence of the global forum of the UNEP for promoting the precautionary principle in the early stage of negotiations that build up the global environmental cooperation in the Montreal Protocol

MATERIALS AND METHODS

This study applied the qualitative set-up. In line with the qualitative approach, the Montreal Protocol has been employed as a case study in this study. Hence, this study was done by analysing some of the relevant meeting documents of the Montreal Protocol.

Documents selection: This study is intimately linked to the global environmental cooperation in the Montreal Protocol, the influence of global forum approach and also the response of the member states. Therefore, the following documents have been selected as the main documents of this study. The documents are as follows: -

- (1) Meeting reports of the First Session-Ad-Hoc Working Group of Legal and Technical Experts for the Preparation of a Protocol on Chlorofluorocarbons to Vienna Convention for the Protection of the Ozone Layer' on 1-5 December 1986 at Geneva, Switzerland
- (2) Meeting reports of the Second Session-Ad-Hoc Working Group of Legal and Technical Experts for the Preparation of a Protocol on Chlorofluorocarbons to Vienna Convention for the Protection of the Ozone Layer on 23-27 February 1987 at Vienna, Austria
- (3) Meeting reports of the first meeting-Ad-Hoc working Group of Legal and Technical Experts for the Harmonization of Data on Production, Imports and Exports of Substances that Deplete the Ozone Layer on 9-11 March 1988 at Nairobi, Kenya

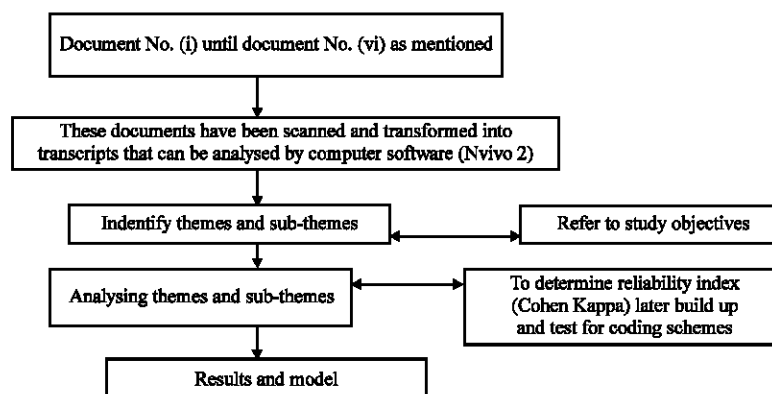


Fig. 1: Documents analysis process flow chart

- (4) Meeting reports of the Second Meeting-Ad-Hoc Working Group of Legal and Technical Experts for the Harmonization of Data on Production, Imports and Exports of Substances that Deplete the Ozone Layer on 24-26 October 1988 at The Hague, Netherlands
- (5) Meeting reports-Meeting of Parties (Montreal Protocol) on 2-5 May 1989 at Helsinki, Finland
- (6) Meeting reports of the First Session-Open-Ended Working Group Of The Parties' (Montreal Protocol) on 21-25 August 1989 at Nairobi, Kenya

These above-said documents have been selected because they represent the early stage of negotiations of the Montreal Protocol. The first two documents represent negotiations in the making of Montreal Protocol itself, while the last four documents represent negotiations to persuade and attract more nations to become as members of the Protocol.

Documents analysis: All the above-mentioned documents were analysed by using Nvivo 2 software. By using Nvivo 2 software, the researchers have built up and tested the coding schemes. This action was necessary in order to determine the reliability. According to Maxwell (2005), there are a few necessary steps in analysing documents by using the software. All the documents are identified and selected for the purpose of fulfilling the study objectives i.e., the above-mentioned documents. These documents are numbered (1-6). Later, these documents are scanned in order to transform them into transcripts that can be analysed by computer software (Nvivo 2). By using computer software (Nvivo 2), the researchers identified themes and sub-themes based on the above-mentioned selected documents, which are in line with the study objectives. Following that, researchers are required

to determine the reliability of the coding schemes during the process of identifying themes and sub-themes by using computer software (Nvivo 2). This determination of reliability is based on the reliability index of Cohen Kappa. This process is required to be repeated many times, until the coding schemes manage to obtain the highest level of the reliability. Finally, these themes and sub-themes are built up by displaying these results in the form of a model.

This process of documents analysis has been laid down in Fig. 1.

RESULTS AND DISCUSSION

Based on the documents analysis on the global forum of UNEP in the early negotiations of the Montreal Protocol, two main themes and eight sub-themes have been identified (Table 3 and Fig. 2). The themes are activities and committees, while the sub-themes are meetings, workshops, conferences, coordinating committees, secretariat, advisory panel, working groups and Governing Council.

Activities: When referring to the influence of the UNEP global forum in the negotiations of the Montreal Protocol, it is clear that the activities have played essential roles in the negotiations. This is highlighted in document No. (3), which indicate that activities that have been conducted by the global forum of UNEP have managed to obtain global attention.

The first meeting of the Ad Hoc Working Group of Legal and Technical Experts for the Harmonization of Data on Production, Imports and Exports of Substances that Deplete the Ozone Layer was held at UNEP headquarters in Nairobi from 9-11 March 1988 (Para 14, document No. (3))

Table 3: Themes and sub-themes of documents analysis of the global forum of UNEP for promoting the precautionary principle in the montreal protocol

Themes	Sub-theme
Activities	Meetings, workshops, conferences
Committees	Coordinating committees, secretariat, advisory panel, working groups and governing council

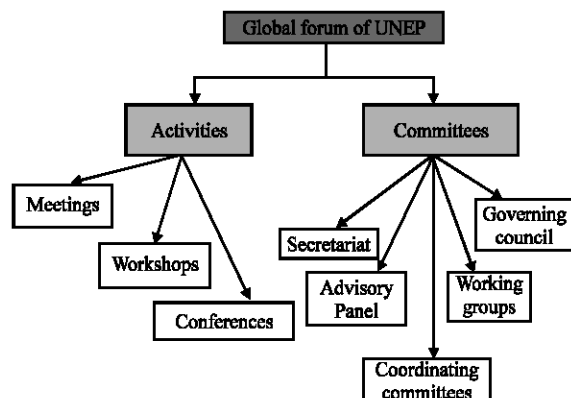


Fig. 2: Model of themes and sub-themes of documents analysis of the global forum of UNEP for promoting the precautionary principle in the montreal protocol

Activities/meetings: This study has shown that activities that have been conducted by the global forum of the UNEP through meetings were also being considered as factors that influence states to participate in global environmental cooperation of the Montreal Protocol. This has been highlighted in documents as stated:

A representative of the UNEP Secretariat, Mr. Peter Usher, informed delegates of the series of scientific and technical meetings and economic workshops that had been held by UNEP in order to provide a sound basis for discussions on a protocol by the Vienna Group (Para 60, document No. (1))

Activities/workshops: Besides the meetings, which have been highlighted above, workshops have also been mentioned for consideration in order to influence the negotiations of the Montreal Protocol. This is highlighted in document No. (1).

Those of the two part UNEP workshop on the control of chlorofluorocarbons which reviewed all aspects of the production, emissions, use of CFCs and of current regulations for their control and, at its second part, compared different control strategies for the CFCs and other ozone modifying substances against an agreed set of criteria (Para 62, document No. (1))

Activities/conferences: In addition to the discussion under the main theme activities, which was based on document No. (5), member states during the negotiations always ensure that the Montreal Protocol must take into consideration the activities that have been conducted by the global forum of the UNEP in order to obtain the global cooperation through conferences.

Initiatives to support activities in programmes (such as conferences) of global organizations (such as UNEP) and financing agencies that could contribute towards implementing the provisions of the Protocol (Para 352, document No. (5))

Committees: The second main theme that has influenced the negotiations of the Montreal Protocol from the perspective of the UNEP global forum, it is also clear that the committees have played essential roles. This has been highlighted in document No. (6).

Several delegations expressed the need to make the trust fund a discrete fund that would be administered by UNEP. These delegations expressed a preference for UNEP because of the Organization's experience with the ozone issue and the belief that UNEP (Para 209, document No. (6))

Committees/coordinating committees: These committees also included the coordinating committees. These coordinating committees really help to influence states around the globe to join and ratify the Montreal Protocol. This is highlighted in document No. (1).

Mr. Usher said the UNEP Coordinating Committee on the Ozone Layer (CCOL) had met three times in the past year and had provided to the Vienna Group summaries of assessments of ozone layer modification and its impact and also a policy support document setting out in easy understood terms some of the issues concerning the ozone layer and the factors which affect its depletion which the Vienna Group should consider in elaborating a protocol (Para 61, document No. (1))

Committees/secretariat: This study has shown in document No. (4), that the secretariat also brought benefits to states around the world during the negotiations of the Montreal Protocol because these

committees through the secretariat, which was established by the global forum of UNEP managed to gain the global cooperation and attention.

Until the secretariat to the Montreal Protocol is established, should the responsibilities of the secretariat as provided in article 7 regarding the collection of data be performed by the UNEP secretariat in its capacity as interim secretariat to the Protocol..... (Para 88, document No. (4))

Committees/advisory panel: The advisory panel manage to bring cooperation and attention to member states especially to the developing nations in accepting the Montreal Protocol as one of the global environmental laws. This was highlighted in document No. (6).

The advisory group to the Executive Director of UNEP was of the opinion that although remedial action could only be taken in the form of an amendment to the Protocol by the Parties (Para 94, document No. (4))

Committees/working groups: In addition, document No. (2) has highlighted that committees, which have been established by the global forum of UNEP's working groups were able to persuade the member states to join the Montreal Protocol.

Mr. Chairman then introduced the report of the first session meeting of the Ad Hoc Working Group contained in document UNEP/WG.151/L.4. In particular, drew attention to the work of the Ad Hoc Working Group on Institutional and Financial Matters contained in Annex II to the report which had brought many of the matters concerned with finance and administration of the proposed protocol close to agreement (Para 69, document No. (2))

Committees/governing council: The creations of committees, which were established by the global forum of UNEP in order to gain global cooperation, must first go through the Governing Council's approval. This is shown by document (5).

To that end the Meeting requests the Executive Director to secure the necessary consents of the Secretary General of the United Nations and the Governing Council of UNEP (Para 457, document No. (5))

CONCLUSION

This study suggests that the practice of rationalisation of the activities of global institutions is intimately connected to the success of the negotiations between member countries. The establishment of global institutions, which include global environmental institutions need to be a stronger basis to employ the appropriate activities and committees in order to ensure global attention and cooperation. As referring to the above-mentioned study on global forum of UNEP under the Montreal Protocol, that global forum should be encouraged to secure adequate resources in order to get global attention and cooperation through her activities and committees. This explained that the importance of these activities and establishment of committees are essential for the global cooperation among member states of the Montreal Protocol.

The global forum of UNEP's impact on activities and the establishment of committees under the Montreal Protocol were very strong to the extent that the environmental protection issues were the ultimate goal. However, the global economics and equity matters were also discussed in the negotiations of the Montreal Protocol. Nevertheless, the global forum of UNEP under the Montreal Protocol has managed to minimise the conflict between the global environmental issues and the global economics and equity matters by promoting the the precautionary principle. The establishment of the Article 4 in the Montreal Protocol as trade restriction has shown the acceptance on the the precautionary principle in order to protect global ozone layer (O₃) from Chlorofluorocarbons (CFCs). Finally, the preliminary findings indicate that UNEP as a global forum which promotes the precautionary principle in the negotiations of the Montreal Protocol was important in terms of to lead for further development and expansion of the rules on global environmental law in order to seek global environmental cooperation for achieving the global environmental protection goals.

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