

Theoretical Underpinnings of Toxic Chemical Regime Formation: The Road to Rotterdam Convention

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Abstract

The balance between human activities in developing toxic chemicals do not always take into account the effect on environment. Regime construction is often seen as a seamless process especially when one considers the outcome attained in any convention. Often what is left out is that any regime must be defined by science as well as political actors. Getting the balance between these two competing concerns calls for compromise. There have been several attempts to address the effects of toxic chemicals to the environment. This paper seeks to trace the theoretical origins of the toxic chemical regimes and address how they have been formulated. The effect of any regime often boils down to the question of compliance and implementation. This paper seeks to therefore highlight some of the realities of compliance and implementation of the toxic chemical regimes.

1. Introduction

Environmental historians make a grand claims that the last fifty years have seen the rise of techno scientific practices and modes of governmentality that together make the molecular realm newly legible and politicizable¹. The reality is that the mid twentieth century witnessed a rapid expansion of the chemical industries. With this expansion there was an intrusion of chemical technology into practically all branches of the economy and everyday life. Many states have passed law and regulations regarding the evaluation and control of chemicals in the environment and require information to be

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¹ Michelle Murphy “*Environmental History*”. (2008), Oxford University Press, Vol. 13 No 4. (Oct) pp. 695-703

submitted to national authorities before chemicals can be manufactured or used.

After the Second World War, there seems to be a systematic growth in the production and use of chemical weapons for commercial purposes. Understanding the nature of environmental global politics on chemical weapons and toxic chemicals entails recognizing the importance of international regimes. This paper seeks to examine the theoretical underpinnings of the construction, compliance and enforcement of the regime on toxic chemicals management on the environment. Chemicals have both positive and negative effects on the environment with the latter being more appalling and concerning. These concerns have led to the formulation of numerous regimes that deal both directly and indirectly with Chemicals. Although pollution, waste management, hazardous waste management, biodiversity have separate regimes this paper argues that they are all connected to the toxic chemicals regime.

2. Conceptualizing International Regimes

There is limited disagreement on the concept of International Regimes which may be defined in two ways². First, it is a set of norms, rules or decision making procedure whether implicit or explicit that assist in finding an agreement which informs international behavior. The second definition of regime is the principle, norms, rules, operating procedures and institutions that actors create or accept to regulate or coordinate action in a particular area of international relations. For purpose of this paper norms are standards of behavior while principles are belief of fact, causation and rectitude. Rules are specific prescriptions or prescription for actions. Operating procedures are prevailing practices for work within the regime including methods of making, implementing, operating, evaluating and expanding the regime and policy.

Formation of environmental regimes, such as toxic chemical regimes, requires an in-depth understanding of regime construction, negotiations,

² Chasek Pamela S, et al. *Global Environmental Politics, Dilemmas in World Politics* (2006) 4th Ed, Westview Press. USA

implementation and impact. John Ruggie³ is often credited for introducing international regime as a set of mutual expectations, rules, regulations, plans, organizational energies and financial commitments which have been accepted by a group of states. Haas defined regimes as collective arrangement among nations designed to create or more effectively use scientific and technical capabilities to manage an international phenomenon⁴. Keohane and Nye also defined regime instrumentality as creation or acceptance of procedures, rules or institutions for certain kind of activity which governments regulate and control transnational and interstate relations⁵. They also define regime as a network of rules norms and procedures that regulate behavior. In 1963 a group of leading scholars attempted defines regimes as targeted principles, policies and traditions that are internationally accepted with a view to standardize and extend regime study⁶. Regimes take the form of treaties, protocols, agreements, accords and conventions among others.

2.1 Regime Theory

Regimes are found in many areas of international relations and as a result regime theory has received attention from scholars on the longstanding debate on power, interest, ideas and cooperation under the anarchical system of global politics. Environmental regimes require all stakeholders including governments to surrender part of their sovereignty for external interjections in regards to the usage or exploitation of resources whenever there is any reason. However a counter argument is that International environmental regimes have

³ John Gerard Ruggie, "*International Response to Technology: Concepts and Trends*" International Organization (1975) Vol. 29 pp. 570 He introduced the concept international regime and epistemic communities into international relations field by adopting the Karl Polanyi term embedded liberalism. A foreign policy Magazine has named him one of the 25 most influential international relations scholars in United States and Canada.

⁴ Ernst Haas, "*On Systems and International Relations*" World Politics, (1975), pp. 27.

⁵ Robert O. Keohane and Joseph S. Nye *Power and interdependence* (1977) Boston: Little Brown. pp. 5, 19.

⁶ Stephen Krasner, *International Regimes*, Ithacia Cornell University Press (1983) pp 2.

assisted states to reinforce their internal judicial procedures, legal dispensation, which helps consolidate their statehood thereby contributing to enhanced projection sovereignty.

There are several assumption made under this environmental regime theory. First, the assumption among others, is that the international politics is concerned with power plays. It is not an ordered realm but dominated by anarchy. This explains the progenitor's approach which demonstrates the impact and mitigation of structural anarchy in the international system. The power plays are compounded by the absence of a hierarchical structure governing international politics. The second assumption is based on the institutional processes leading to the formation of the treaty. This assumption concentrates on environment organization's actual operation. The assumption considers views taken by **constitutionalist** who study treaties and the formal structure of international organization. The third assumption is that scholars and 'State men' must learn how these interest can be realized despite structural anarchy, extensive common interests existing among states and their people.

The last assumption is based on functionalists' argument, associated with David Mitrany who opines that scholarly and political focus of international cooperation must center, not on formal interstate politics, rather on providing opportunities for technical cooperation⁷. Indeed cooperation between states may lead to erosion of domestic legislative function in favor of a more global legislation. However the functionalist idea has been developed to anticipate global institution and regional organization as an effective way of creating international governance. The effect of this is debatable. The complexity of actors involved (states and individuals), as well as the reality of coherence of the actors, presents a mirage. Yet interdependence in environmental politics is a reality and is one of the main concerns of the study on environmental regimes⁸.

⁷ David Mitrany, *The Functional Theory of Politics* London, London School of Economics St Martin Press (1975).

⁸ Chasek Pamela S, et al. *Global Environmental Politics, Dilemmas in World Politics* (2006)

2.2 Regime Construction Stages

Although States are consistent in their unending competition for power as a means of defense, no State acting alone can solve the environmental crisis that has global scale consequences⁹. Regime formation is founded on the relationship between knowledge and power. Regime formation is not about fixing the environmental problem that exists, rather it is the consideration of the broader issues of politics that are at play in the international system¹⁰. Therefore regimes, exist (to attempt) to tame the excesses identified within the environmental problem. Regime building developed by liberal institutionalism which led to the green diplomacy movement which is arguably one of the solution to save the world from global environmental collapse¹¹.

Regime formation is largely informed by the existence of a foundational environmental **problem**. There must be a concrete definition of the issue before any action can be taken. The main concern is how to develop a regime so that it attains the status of an express legal commitment politics notwithstanding. This introduces the poignant question which addresses the issue of who is best suited to define environmental policy matters; the politician or the scientist¹². It is also posited by Broadhead¹³ that there are two prong approaches to framing the environmental problem. Firstly, the source of knowledge production is critical. Scientist are central in the formulation of the issue. Science is a major source of knowledge production in environmental politics since it aids in identifying the problem with precision which is critical in framing the environmental issue¹⁴. Secondly there is also a network of

⁹ Caroline Thomas, *The Environment in International Relations*, London, Chameleon Press Limited (1992)

¹⁰ Lee-Ann Broadhead, “*International Environmental Politics: The Limits of Green Diplomacy*” (2002)

¹¹ Ibid

¹² Chris Methmann, *The Sky is the Limit: Global Warming as Global Governmentality*. European Journal of International Relations, (2011), Volume: 19 issue: 1, page(s): 69-91

¹³ Lee-Ann Broadhead, “*International Environmental Politics: The Limits of Green Diplomacy*”

¹⁴ Owen Green (1994), “*Environmental Issues; The Globalization of World Politics*” ed By John Baylis and Steve Smith. Oxford University Press.

professionals with recognized expertise and competence in a particular domain and are authoritative in a given area and form what is called *epistemic community*¹⁵. They go beyond the basic scientific expertise in a given field to define the problem based on epistemology and scholarly research. This paper suggests a healthy mix of the two is critical to attaining a clear regime.

The second stage after framing the environmental problem is **fact finding**. Facts must be gathered correctly before a decision to define a problem is made. Cogent evidence must be available to support the reality of existence of a problem. The debate is that facts may be made to look what the fact finder desires. The fact finder ought to be objective and neutral. Hard evidence presented by credible members of the international community such as scientists inform the quest by interest groups or the political players with a view to formulating the international agenda on environmental discourse. Organizations such as United Nation Environmental Programme (UNEP) frequently play a critical role in the articulation and dissemination of the best available evidence as it is collected and debated through variety of channels such as bureaucracies, academia, and businesses among others¹⁶.

Under fact finding stage the foundation of knowledge production must attempt to satisfy **four elements**¹⁷. These are (1) normative and principled belief on a value based rationale for social action, (2) shared casual belief based on practice contributing to the problem that invites policy action toward a desired outcome, (3) shared notions of validity and (4) common policy enterprise associated with the problem to which professional competence is directed. These are cumulative and hard to arrive at policy formulation. The *epistemic community* should not be seen to replace the need for participation and expression of democratic will by influential elements such as hegemonic actors.

¹⁵ Ibid

¹⁶ Lee-Ann Broadhead, "International Environmental Politics: The Limits of Green Diplomacy" (2002)

¹⁷ Peter Haas "Banning Chloroflourocarbon: Epistemic Community Efforts to Protect Stratospheric Ozone" International Organization Winter (1994) pp 187-224

Once the foundational problem is determined decisively by concerned states the formulation process takes the often treacherous trajectory of negotiations, advocacy, data gathering, which leads high level conference that produces and agreement. The states will then sign the agreement and thereafter ratify the same in their respective nations as postulated in their internal legislation. Ratification is ideally the international act in which a state indicates its consent to be bound to a treaty. Often this is the easy part. Compliance and implementation is where the rubber meets the road.

Toxic Chemicals have both positive and negative impacts on the atmosphere. Their reaction with the atmosphere, may provide a positive impact for more chemical production or negative impact with harmful effects on human beings and environment. The latter is always concerning. Negative impacts from toxic chemicals, manifested through neurobehavioral effects as one example, can have two feedbacks¹⁸. The first negative feedback is adverse health impacts that dampen the ability of the system to self-perpetuate. The second negative feedback occurs when the widespread use of compensatory chemicals leads to increasing environmental degradation and adverse health impact¹⁹. A positive feedback occurs as we increase our discovery, production and use of chemicals and other resources to compensate for the adverse impacts from toxic chemicals, e.g. pharmaceuticals, more infrastructure to cope with toxic chemical-induced impacts. The issue is whether we allow profits over environment since the negatives always outweigh the positives.

The atmosphere is a complex, self-perpetuating system and yet current trends of environmental degradation and resource consumption threaten its future. Toxic chemicals constitute a small but critical fraction of total chemical use that enables activities and infrastructure in the technosphere. What if the toxic

¹⁸ Miriam L Diamond, "Toxic chemicals as enablers and poisoners of the technosphere" Special issue: Perspectives on the technosphere, *Anthropocene Review*, (2017) Vol. 4(2) 72–80

¹⁹ Kolpin DW, Furlong ET, Meyer MT et al. Pharmaceuticals, hormones, and other organic

Waste water contaminants in US streams, 1999–2000: A national reconnaissance. *Environmental Science & Technology* (2002) Vol 36: 1202–1211

chemicals are, at the same time, increasing risks to the atmosphere's future? Management of these health effects requires resources, including chemicals that could themselves cause additional impacts. Moreover, the negative health impacts impose direct and indirect costs that divert resources from innovating sustainable solutions for perpetuation of the technosphere. The effect of toxic chemicals is an ongoing concern that requires more study. This reality led to the continuous attempt to address the environment concerns raised by the increase of toxic chemicals.

3. Tracing the Road to Rotterdam

Having considered the brief foundational concept of regime construction, we now shift gears to a more specific regime on toxic chemical formulated in Rotterdam. The theoretical journey to Rotterdam can be traced back from early 1960 in Rachael Carson's publication of the *Silent Spring*. The book documented the dangers of pesticides to human health, introduced a renewed zeal for understanding scientifically the invincible threats to the environment. Previously the dominant debates focused on other aspects of social interaction and not the environment. The traditions focused on restrictions based on legal principles such as oceans and rivers among others promoted by dominant theory of cooperation and not concern for the environment. Initially states approached the issue of toxic chemicals by developing national legislation to deal with environmental effects of such chemical waste. This thinking was affected by the need to consider the global effect of the environment to entire mankind. For instance in 1967 the Swedish Government was supported by the United States to host the Stockholm convention which was the first global conference convened to discuss the Human Environment. 114 States (excluding the Soviet bloc) attended this conference and approved a declaration containing 26 broad principles on management of the global environment.

One can discern chemical regime by effort to define chemical waste found in **Principle 6**²⁰. The principle provided that "*The discharge of toxic substances*

²⁰ Declaration of the United Nations Conference on the Human Environment-Stockholm Declaration 1972

or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems. The just struggle of the peoples of ill countries against pollution should be supported". This was in response to the issue raised by Rachael Carson's *Silent Spring* and the high profile accidents such as the 1968 tragedy in Yoshio Japan where many people were poisoned after eating rice contaminated with high level of polychlorinated biphenyls. In the late 1960 and early 1970 a new risk assessment led many industrialized countries to adopt domestic regulations on relatively small set of hazardous chemicals²¹.

Another initiative at the 1972 Stockholm conference in connection with **Principle 6** was introduction of the principle that the just struggle of the people(s) of all countries against pollution should be supported. A register of all the International Register of Potentially Toxic Chemicals (IRPTC) was set up with the objective of availing access to existing data on effects of chemicals on man and his environment²². Also it acted as an aid to identify gaps in knowledge on the effect of chemicals, potential hazards from chemicals, provide information for national, regional and global policies among others. The information contained in the register is published in periodical bulletins and other documents. This idea was supported by the UNEP which led the development of the International Code of Conduct for the distribution and use of pesticides in 1985 and the London Guidelines for Exchange of Information on Chemicals in international trade of 1987²³.

²¹ Chasek Pamela S, et al "Global Environmental Politics, Dilemmas in World Politics" 4th Ed, Westview Press. USA (2006).

²² Kucherenko, A., & Huisman, J. The International Register of Potentially Toxic Chemicals (IRPTC) of UNEP. Environmental Conservation, (1982). Vol. 9(1), 59-63

²³ Jonathan Krueger and Henrik Selin "Governance for Sound Chemicals Management: The Need for a More Comprehensive Global Strategy" Global Governance 8 (2002): 323-342

4. Initiatives on Toxic Chemicals

There were some significant inroads made to the theoretical underpinnings of the toxic regime especially in Europe. The European Union has used some of the international initiatives to support and strengthen their new policies such as attempts to harmonize international standards by trying to “pull along” less advanced or more reactive European countries to protect the European Union from potential trade-related disputes as a result of chemicals restrictions²⁴. Some of the international treaties and programs influencing current European approaches to chemicals management include the following. First, the Oslo and Paris (OSPAR) Convention for Protection of the Marine Environment of the North-East Atlantic. The OSPAR Convention, adopted in 1992, build on two previous conventions addressing marine pollution in the Northeast Atlantic. This convention of Northeast Atlantic nations, including the European Commission, encourages binding decisions of states to protect the marine environment by requiring the prevention of pollution that is land based. For instance the 1998 OSPAR Strategy on Hazardous Substances establishes a process for eliminating hazardous inputs in the region within one generation through development of tools for assessing risks of potential hazardous substances in the marine environment by identification and prioritization of chemicals of concern.

Second, the 2001 Stockholm Convention on Persistent Organic Pollutants which established a legally binding means to address threats to health and the environment caused by persistent organic pollutants (POPs). It recognized an international production phase-out of twelve substances, including already restricted pesticides; polychlorinated biphenyls; and dioxins and furans. It also provided for financial and technical assistance to developing countries in recording inventories and destroying existing stocks of POPs, Also international research and monitoring of POPs; and a “precautionary” process

²⁴ Joel Tickner and Ken Geiser “The Problem of Current Toxic Chemicals Management: New Solutions” Department of Work Environment, Baywood Publishing Co., Inc. (2004) Vol. 14(1) 43-58,

was added to the new POPs convention based on evidence of risk and long range transport, even where information is not available²⁵.

Third, Joel Tickner and Ken Geiser posits that, the United Nations has undertaken several other initiatives to reduce risks from the global circulation of chemicals²⁶. The Global Mercury Assessment seeks to characterize and reduce risks to health from exposure to mercury. The Regionally Based Assessment of Persistent Toxic Substances builds on the Stockholm Convention to establish a comprehensive regionally based assessment of the damage, threats, and concerns posed by persistent toxic substances and to evaluate and agree on priorities for intervention.

Fourth, the Rotterdam Convention on Prior Informed Consent (PIC), adopted in 1998, facilitated information exchange about hazardous chemicals, their international trade, and restrictions on their use. It provides policy guidance, identifies priorities, produces information, develops strategies and makes recommendations for collective action on chemicals classification and labeling, pollution prevention, and hazard reduction. The United Nations is now trying to unify its disparate efforts under the rubric of a newly established Strategic Approach to International Chemicals Management. Key sectors of society ought to come together in common understanding of the nature and gravity of the challenge posed by toxic chemicals to the environment and seize the opportunity to revise their agenda²⁷. This is unlikely since the behavior of man is to resist change even when aware of the seriousness of the potential threat. The way of thinking of the modern scientific method engenders allows for an operational rationality that lead to use of technology. This debate led to the conceptualization of the Bundtland Commission and Enlightenment Thought. After the Bundtland Commission there was a systematic approach to manage the message on the question of sustainable development.

²⁵ Joel Tickner and Ken Geiser “The Problem of Current Toxic Chemicals Management: New Solutions” Department of Work Environment, Baywood Publishing Co., Inc. (2004) Vol. 14(1) 43-58,

²⁶ Ibid

²⁷ Paul Raskin et al, Great Transition: The Promise and Lure of the Times Ahead Boston Stockholm Environmental Institute (2002).

4.1 Chemical Weapons

Another initiative on toxic chemical is the Convention of prohibition of the development, production stockpiling and use of chemical weapons and their destruction (CWC) which came into force in 1997. This landmark Convention complemented and reinforced the 1925 Geneva Protocol prohibiting the use of chemical and biological weapons by banning the development production and stockpiling of chemical weapons. The CWC was negotiated in Geneva from 1972 to 1992 and was opened for signature in 1992 and attracted upwards of 160 states. This is seen more in the lenses of humanitarian law norms. The Convention on the prohibition of the development, production stockpiling and use of chemical weapons and their destruction (CWC) which came into force in 1997.

4.2 Rio and Rotterdam Convention on Toxic Chemicals

The Rio Convention preceded the Rotterdam Convention as will be discussed below. The Rotterdam Convention is constitutive of 30 Articles and 6 Annexes. It provides a proper framework for its operationalization. It came into effect on 24th February 2004 in Rotterdam, Netherlands and was signed on 10th September 1998. Due to the overlapping and closely related mandates of the UNEP part in the Rotterdam Convention, Stockholm and Basel Convention, in 2012, the three Secretariats were merged. As at 2018, the convention had 161 parties, which include 158 UN member states and European Union. The Convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labeling, include directions on safe handling, and inform purchasers of any known restrictions or bans. Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged to make sure that producers within their jurisdiction comply. In 1989 the introduction of the voluntary Prior Informed Consent (PIC) procedure helped the third world countries identify the chemicals that had been banned or severely restricted in other countries so that they could make informed decisions.

Interestingly, the RIO Convention coincided with fact finding process for the efforts to treatise toxic chemical waste. This is captured in Agenda 21 of the Rio Convention which among other things, called on states to create

mandatory procedure and improve coordination (PIC) among national agencies, international organization working on chemical or related issues²⁸. This was to result in the Rotterdam convention on Prior Informed Consent Procedure for Certain Hazard chemicals and Pesticides in International Trade. The main goal of Rotterdam convention was to promote the open exchange of information and a call for exporters of hazardous chemicals to use proper labelling, include direction on safe handling and inform purchasers of any known restrictions or bans. The objective of the Convention, captured under Article 1, is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.

The issue of toxic chemicals is also provided for in the Rio Convention 1992. In particular **Agenda 19** of the Rio Convention provided as follows: *Seeks objectives such as: full evaluation of 500 chemicals before the year 2000; control of chemical hazards through pollution prevention, emission inventories, product labelling; use limitations, procedures for safe handling and exposure regulations; phase-out or banning of high-risk chemicals; consideration of policies based on the principle of producer liability; reduced risk by using less-toxic or non-chemical technologies; review of pesticides whose acceptance was based on criteria now recognized as insufficient or outdated; efforts to replace chemicals with other pest-control methods such as biological control; provision to the public of information on chemical hazards in the languages of those who use the materials; development of a chemical-hazard labelling system using easily understandable symbols; control of the export of banned or restricted chemicals and provision of information on any exports to the importing countries.*

²⁸ Chasek Pamela S, et al. Global Environmental Politics, Dilemmas in World Politics (2006)

The most relevant provision to toxic chemicals found in Agenda 19 of the Rio Convention was given effect by the **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade** (Rotterdam Convention). Article 1 of the Rotterdam Convention provides thus “*The objective of this Convention is to promote shared responsibility and cooperative efforts among parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties*”.

4.3 Enforcement and Compliance with Toxic Chemical Regimes

Having traced the road that led to toxic chemical regime formation, it is important to highlight some of the mechanism for enforcement. Regime impact or effectiveness is a complex and multi-faceted concept, encompassing how well regimes work across different dimensions and the impacts it has on a range of outcomes and variables. Discussions around identifying these different dimensions of effectiveness have been informed by perspectives from international relations and political science, legal theory, environmental studies, and policymakers. Oran Young²⁹ identifies no fewer than six distinct dimensions of regime effectiveness; problem-solving, goal attainment, behavioral, process, constitutive, and evaluative effectiveness, taking into account how regimes solve problems or reach their goals, change participants’ behavior in meaningful ways, and whether their results meet criteria such as equity. In practice, scholars have tended to focus on two main dimensions of regime effectiveness; compliance and problem-solving. The issue is whether states implement domestic laws and regulations in order to fulfill their obligations. Also do these legal changes induce behavioral changes in the actors they target, such as polluting firm? Do states exceed compliance expectations, or do they stick simply to the letter of the agreement. Behavioral

²⁹ Oran Young in an article *inferences and Indices: Evaluating the Effectiveness of International Environmental Regime*

and political changes are easier to identify and measure than other sorts of regime impacts.

5. Compliance

The other part of effectiveness of a treaty is whether states comply with the provisions whenever there is a conflict of interests between implementation and ancillary interest. Three different types of compliance are related to behavior. **First**, procedural compliance means that state actors fulfill their obligations to the treaty process, for example by preparing national legislation to reflect the intended goal of the treaty. This is normally challenged by partisan political interest. **Second**, substantive compliance refers to actions taken to fulfill treaty obligations. **Finally**, compliance with the “spirit” of the treaty refers to actions that fulfill the broad normative framework of the treaty, often spelled out in the treaty’s preamble. One of the other an anticipated models for compliance is through elaborate dispute resolution models. The Rotterdam convention provides for an elaborate mechanism for dispute resolution. Without going into depth on all the dispute resolution models suggested in Article 20 of the Convention, resolving dispute by use of the International Court of Justice is anticipated in the Convention.

6. Environmental Dispute Resolution

Many scholars argue that the effectiveness of international environmental law by means of third party adjudication is based on the notion or principle of state responsibility. Joost Pauwelyn (2005) suggests that there are three main systemic issues relating to environmental dispute resolution³⁰. **Firstly**, judicial settlement of environmental disputes are largely bilateral and confrontational whereas the environmental problems are international and hence the victim remains unclear. **Secondly**, judicial enforcement operates *ex post facto* (after the fact) and is negative in nature since it is focused on reparation. The architecture of environmental issues require a more proactive and protective approach as opposed to reactive models. **Thirdly**, environmental disputes

³⁰ Joost Pauwelyn, “Judicial Mechanism: Is there a need for a World Environment Court” *Reforming International Environmental Governance: From Institutional Limits to Innovative Reforms*. Ed by W. Bradnee Chambers and Jessica F Green. (2005). United Nations University Press USA

often times raise seriously scientific questions which may be beyond the expertise of a judicial organ. Courts are not well equipped with the technical expertise to determine scientific question with mathematical precision.

Joost therefore favors a more multilateral compliance mechanism based on factual data from states efforts in monitoring and evaluation of the treaties and convention. The argument is complicated more by the fact that there is no compulsory dispute resolution mechanism for which states and non-state actors can resort to ensure compliance with the obligations in treaties and conventions. Joost Pauwelyn suggests that a World Environment Court would somewhat introduce order in the myriad of environmental treaties and convention. Obviously there would be a framework under which the court would operate. The clamor for a Court to deal with global environmental issues is pertinent and should be supported by all states. The larger issue is whether the international environmental Court would be able to effectively deal with the attendant breaches by sovereign states.

7. Conclusion

Conceptualizing International Regimes is an integral part of understanding environmental politics. The overarching concern for states is the question of power, interest and ideas that are present in all their actions including regime formation. Therefore when state undertake to formulate a regime and before consensus is arrived at, a clear problem must be adequately identified with evidence in terms of scientific data or academic research. Chemical substances continue to be invented or produced even with the several international initiatives being formulated with a view to address the effects such chemicals on the environment. The Rotterdam convention is one of the latest attempts to formulate the management of environment on the issues of toxic chemicals. The potentials of the environmental regimes and enforcement mechanism available on toxic chemical regimes are yet to be fully actualized. This is because of the functional difficulties encountered in the compliance of the regimes in their entirety. This proved an area of further study to identify the how to ensure compliance and test whether the problem is ultimately solved.

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