

Chapter 5

Foundations of International Climate Law: Objectives, Principles and Methods

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Abstract This chapter explores the objectives, principle and methods of climate law. The United Nations Framework Convention on Climate Change (UNFCCC) lays the foundations of the international regime by setting out its ultimate objectives in Article 2, the key principles in Article 3, and the methods of the regime in Article 4. The ultimate objective of the regime – to avoid dangerous anthropogenic interference – is examined and assessments of the Intergovernmental Panel on Climate Change (IPCC) are considered when seeking to understand the definition of this concept. The international environmental principles of: state sovereignty and responsibility, preventative action, cooperation, sustainable development, precaution, polluter pays and common but differentiated responsibility are then examined and their incorporation within the international climate regime instruments evaluated. This is followed by an examination of the methods used by the mitigation and adaptation regimes in seeking to achieve the objective of the UNFCCC. Methods of the mitigation regime include: domestic implementation of policies, setting of standards and targets and allocation of rights, use of flexibility mechanisms, and reporting. While it is noted that methods of the adaptation regime are still evolving, the latter includes measures such as impact assessments, national adaptation plans and the provision of funding.

5.1 Introduction

The purpose of this chapter is to examine the objectives, principles and methods of the international climate change regime. An understanding of the key objectives, principles and methods of the regime is essential, as all measures and policies operating within the climate change regime reinforce and build upon these primary conceptual

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boundaries. This chapter explores the climate change regime through an examination of the United Nations Framework Convention on Climate Change (UNFCCC),¹ the Kyoto Protocol,² the Cancun Adaptation Framework,³ and a number of Conference of the Parties (COP) decisions. The term climate change regime is used in this chapter to refer to the governance arrangements that exist to support the implementation of the UNFCCC. This includes a combination of laws, institutions and processes operating to assist in fulfilling the ultimate objective of the UNFCCC.

This chapter explores both mitigation and adaptation measures operating within the climate change regime. Mitigation refers to human interventions to reduce emissions of greenhouse gases from sources, or to enhance their removal by sinks.⁴ By contrast, adaptation refers to adjustments in practices, process or structures which can moderate or offset the potential for damage or take advantage of opportunities created by a given change in climate.⁵ Grasso examines the difference between the regimes, stating that while “[a]daptation consists in adjustment of human systems to actual or expected physical effects of climate change, variability and extreme conditions. In a broad perspective, mitigation seeks to protect natural systems against human systems whereas adaptation aims to protect the latter against nature”.⁶ While there has been somewhat of a disconnect between the two regimes to date, both mitigation and adaptation measures are necessary components of the climate change regime and are mutually reinforcing, and as such both worthy of equal consideration when examining international climate governance.

5.2 Objective of the Climate Change Regime

The ultimate objectives of the climate change regime is found in Article 2 of the Convention, which requires the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference

¹ United Nations Framework Convention on Climate Change (UNFCCC), New York, 9 May 1992, in force 21 March 1994, 31 *International Legal Materials* (1992), 849.

² Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 10 December 1997, in force 16 February 2005, 37 *International Legal Materials* (1998), 22.

³ The Cancun Adaptation Framework is contained within Articles 11–35 of the COP Report from the Cancun negotiations in 2010. The section dealing with the adaptation framework is titled “II Enhanced Action on Adaptation”. See: Decision 1/CP.16, Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention, FCCC/CP/2010/7/Add.1, 15 March 2011 (Cancun Adaptation Framework).

⁴ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge: Cambridge University Press, 2004), at 76.

⁵ Robert T. Watson and the Core Writing Team (eds), *Climate Change 2001: Synthesis Report. A Contribution of Working Groups I, II, and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2001), at 398, and Yamin and Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, supra, note 4, at 214.

⁶ Marco Grasso, *Justice in Funding Adaptation under the International Climate Change Regime* (Netherlands: Springer, 2010), at 11.

with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Article 2 provides that this objective applies not only to the Convention, but also to any related legal instrument that the COP adopts. This creates one focused objective for the regime, which is addressed through different legal policies, instruments and measures. The objective is framed as environmental quality standard.⁷ It does not prohibit the emission of greenhouse gases; rather it seeks to restrict these activities when they exceed a certain threshold (that of dangerous anthropogenic interference). The objective also sets a timeline for when the environmental standard must be met, requiring that such changes take place, so as to not affect: ecosystem adaptation, food security and economic development occurring in a sustainable manner.

During the drafting process of the UNFCCC some parties (European Countries, Canada, Australia and New Zealand) sought for the adoption of an objective, which included specific targets and timetables, and initially starting with the goal of stabilizing carbon dioxide at current levels.⁸ Such approaches had been used to address acid rain and ozone depletion problems and on this basis were recommended for addressing greenhouse gas emission concerns. The United States, Japan, and the former Soviet Union, however argued that setting specific targets and timetables was too rigid, given the lack of scientific certainty and that on this basis emphasis should be placed on furthering scientific research and on the development of national as oppose to international targets. Developing countries positions were also divided with the Alliance of Small Island States pushing for targets and timetables, oil rich countries questioning the science of climate change and countries in the process of industrialisation (Brazil, China and India) arguing that measures must not impinge upon their sovereign rights to development.⁹ Such varying perspectives led to drafting of the current objective which stopped short of setting rigid targets and timelines but which attempted to impose an environmental quality standard as a target and apply a timeline by requiring that the environmental standards be achieved in reference to ecological factors.

Article 1 of the UNFCCC contains a number of definitions relevant to understanding the objective of the regime. No definition is provided for the key concept of “dangerous anthropogenic interference” and guidance on the definition of this concept must be sort from Intergovernmental Panel on Climate Change (IPCC) assessment reports. The closest definition provided within Article 1 related to the concept of “dangerous anthropogenic interference” is a definition of “the adverse effects of

⁷ Yamin and Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, supra, note 4, at 61.

⁸ Daniel Bodansky, “The History of the Global Climate Change Regime”, in Urs Luterbacher and Deflet Sprinz (eds), *International Relations and Global Climate Change* (Massachusetts: MIT Press, 2001), 23, at 29.

⁹ *Ibid.*, at 31.

climate change” which are defined to mean “changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare”.

The Third Assessment Report of the IPCC (TAR) examined the concept of “dangerous anthropogenic interference”. The TAR identified five broad categories of reasons for concern related to Article 2 of the UNFCCC:

1. Risks to unique and threatened systems
2. Risks from extreme climatic events
3. Regional distribution of impacts
4. Aggregate impacts
5. Risks from large scale discontinuities.¹⁰

The TAR did not provide a definition of dangerous anthropogenic interference, rather providing criteria and scientific assessment upon each of these criteria which could be used by policy makers in creating a definition. The Fourth Assessment Report of the IPCC (AR4) notes that the definition of “dangerous anthropogenic interference” is a complex task that can only be partially informed by science as it also involves considerations of economic, ethical and legal judgements.¹¹ The AR4 finds that determining the choice of a stabilization level implies a process that balances the risk of climate change against the risk that response measures will have on economic sustainability.¹² The AR4 describes the criteria of enabling economic development to proceed in a sustainable manner as a double-edged sword, hinting at the difficulty of defining and implementing the objective of the UNFCCC.¹³ Given the difficulties, it is not surprising that the IPCC decided to avoid creating a specific definition.

The AR4 indirectly assists in defining the concept of the “dangerous anthropogenic interference”. It does this by providing a specific temperature increase measurement. In providing this measurement the AR4 cites earlier work of the World Meteorological Organisation and the United Nations Environment Program to state that “a 2° temperature increase to be the upper limit beyond which the risk of grave damage to ecosystems and non-linear responses are expected to increase rapidly”.¹⁴

¹⁰ Bert Metz et al. (eds), *Climate Change 2001: Mitigation. Contributions of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2001), at 700.

¹¹ The AR4 focused on key vulnerabilities related to Article 2 objective. These key vulnerabilities can be broadly categories into: biological systems, social systems, geophysical systems, extreme events and regional systems. See Hans-Holger Rogner et al., “Introduction”, in Bert Metz et al. (eds), *Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2007), 97, at 100.

¹² The AR4 finds that deep emissions reductions are unavoidable in order to achieve stabilisation. It also finds that climate policy can substantially reduce the risk of crossing thresholds deemed dangerous, which validates the work undertaken by the climate change regime and other leaders in climate change polices such as the European Union.

¹³ Rogner et al., “Introduction”, supra, note 11, at 100.

¹⁴ Rogner et al., “Introduction”, supra, note 11, at 99.

The provision of this measurement provides the climate change regime with a specific goal to work towards in meeting the ultimate objective of regime of avoiding “dangerous anthropogenic interference” with the climate system.

The work of the IPCC in providing such a definition is recognised by a number of COP decisions. The Ad Hoc Working Group on Long-Term Cooperative Action under the Convention acknowledges the AR4 finding by stating that “deep cuts in global greenhouse gas emissions are required so as to hold the increase in global average temperature below 2°C above preindustrial levels, and that parties should take urgent action to meet this long-term goal consistent with science and on the basis of equity”.¹⁵ This recognition could be used to infer that dangerous anthropogenic interference with the climate system means any change in global temperature beyond 2°C.

5.2.1 *Mitigation Objectives*

The mitigation objectives of the regime can be further explored by examination of the Kyoto Protocol and two tracks of working groups seeking to further Kyoto commitments and long-term cooperation under the Convention. In Article 3(1) the Kyoto Protocol defines the first commitment period of the regime as operating from 2008 to 2012. In order to understand the objectives, principles and methods of a post 2012 regime, attention is directed towards two decisions reached at the Durban (COP) negotiations in 2011. Decision COP/MOP 7 on the Outcome of the Ad Hoc Working Group on Further Commitments for Annex I Parties creates a second commitment period of the Kyoto Protocol, binding only those original parties to the Kyoto Protocol. Decision CP.17 on the establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action¹⁶ creates a process and timeline for creating a new legal instrument to operate from 2020 that will be applicable to all parties of the UNFCCC.

The Kyoto Protocol is the vehicle in which the mitigation obligations created within the UNFCCC are operationalized. The objective of the Kyoto Protocol can be found in Article 3 which requires at its core “greenhouse gas stabilisation and reduction commitments for industrialised (Annex I) countries meant to add up to a 5% reduction in aggregate greenhouse gas emission compared to 1990 levels”.¹⁷ The Kyoto Protocol sets individual legally binding emission reduction targets for 37 industrialised nations and the European Community in Annex B to the agreement.

¹⁵Decision 2/CP.17, Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, UN Doc. FCCC/CP/2011/9/Add.1, 15 March 2012, Section II, Preamble.

¹⁶Decision 2/CP.17, *supra*, note 15.

¹⁷Roda Verheyen, *Climate Change Damage and International Law: Prevention, Duty and State Responsibility* (The Netherlands: Martinus Nijhoff Publishers, 2005), at 110.

The range of targets varies with the European community adopting the most stringent reduction of 8%, while other countries such as Australia and Iceland were able to increase their emissions from 1990 levels by 8 and 10% respectively.

The delay between the drafting of the agreement in 1997 and entry into force arose from a change in domestic politics within the United States of America. The Clinton administration had signed the Kyoto Protocol, but when the George W. Bush administration took power, it expressed its intention to withdraw from the agreement.¹⁸ Article 25 (1) of the Kyoto Protocol states the protocol shall enter into force after the date on which not less than 55 Parties to the Convention, incorporating at least 55% of total carbon dioxide emissions as at 1990 levels, have deposited their instruments of ratification, acceptance, approval or accession before the agreement entered into force. The positional change of the United States of America left the agreement in a precarious position as it now required every other Annex I party to ratify the instrument. The Kyoto Protocol entered into force on 16 February 2005 following ratification by the Russian Federation. Article 3 of the Kyoto Protocol provides that the first commitment period of the agreement operates from 2008 to 2012. During the first commitment periods, parties are required to demonstrate compliance with their individual mitigation pledges contained with Annex B of the Protocol.

The second commitment period of the Kyoto Protocol is determined by a COP decision from the Durban COP negotiations.¹⁹ This decision determines that the second commitment period of the Kyoto Protocol commences on 1 January 2013 and expires either on 31 December 2017 or 31 December 2020 (the expiration date to be determined at the 2012 COP negotiations in Qatar). The objective of the second commitment period is to aim to “ensure that aggregate emissions of greenhouse gases by parties included in Annex I are reduced by at least 25–40% below 1990 levels by 2020”. Annex I to the agreement sets out the new individual pledges of the Parties to the agreement. The European Union demonstrating leadership has pledged to jointly fulfil a target of a 20–30% quantified emission limitation or reduction objectives (QELROs) during the second commitment period. Pledges made by other parties such as Australia and New Zealand come with a number of caveats and conditions attached and as yet do not specify QELRO.²⁰ Meanwhile other parties such as Canada, Japan and the Russia Federation, have not accepted QELROs for the second commitment period, undermining the authority of the regime to deliver globally coordinated mitigation measures.

¹⁸ David Freestone, “The International Climate Change Legal and International Framework: An Overview”, in David Freestone and Charlotte Streck (eds), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond* (New York: Oxford University Press, 2009), 1, at 18.

¹⁹ Decision 1/CMP.7, Outcome of the Work of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its Sixteenth Session, UN Doc. FCCC/KP/CMP/2011/10/Add.1, 15 March 2012.

²⁰ Australia and New Zealand are prepared to consider submitting information on QELRO pursuant to domestic processes and taking into account of number of CMP and COP decisions.

The Durban COP negotiations led to the establishment of an “Ad Hoc Working Group on the Durban Platform for Enhanced Action” (Durban Platform). This process was established as it was noted with grave concern “the significant gap between the aggregate effect of Parties mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C or 1.5°C above pre-industrial levels”.²¹ The Durban Platform for Enhanced Action seeks to ensure that a new legal instrument that binds as many parties of the UNFCCC as possible is created. It plans to achieve this by requiring parties to start negotiations on the text of the agreement in 2012; complete the drafting of a new legal instrument by 2015; and for the new legal instrument to come into force in 2020.²² The Durban Platform for Enhanced Action also recognises that, in order for the regime to fulfil the ultimate objective of the UNFCCC, strengthening of multilateral and rules-based regimes must be developed and implemented.

5.2.2 Adaptation Objectives

The adaptation regime can be understood by reference to the UNFCCC and the Cancun Adaptation Framework. The second part of the objective from Article 2 of the UNFCCC is particularly relevant to the adaptation regime. The time driven component of the objective seeks for “ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”. Mitigation measures to reduce emissions operate with the purpose of lowering emissions so as to ensure that ecosystems can adapt naturally to climate change. Adaptation measures take a more proactive approach to ensuring that ecosystems remain in functional order by implementing measures that involve human intervention to protect or enhance vulnerable ecosystems.

The UNFCCC obliges parties in Article 4 (1) (b) to “formulate, implement, publish and regularly update national ... measures to facilitate adequate adaptation to climate change”. This provision creates obligations for parties to develop national measures to address domestic country specific adaptation concerns. Article 4 (1) (e) seeks to create a responsibility to assist developing countries to implement adaptation measures by directing parties to “cooperate in preparing for adaptation to the impacts of climate change, develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as by floods”. The obligations in Article 4 can be read in conjunction with Article 3 (3), which deals with the precautionary principle. This provision requires parties to take precautionary measures to anticipate, prevent or

²¹ Decision 2/CP. 17, supra, note 15, para. 2.

²² Decision 2/CP. 17, supra, note 15, Art. 4.

minimize the causes of climate change and design policies and measures that take into account different socio-economic contexts. Adaptation is specifically identified within Article 3 (3) as an area of the precautionary principle has application.

While adaptation has been part of the climate regime since its inception, the development and implementation of adaptation policies and measures has been hindered by three factors: lack of agreement about the meaning, scope and timing of adaptation; limited capacity in developing countries to undertake vulnerability assessments; and bottlenecks in the availability of funding.²³ Grasso suggests that the dominant natural-science approach to climate change, based upon assessments of physical processes, is responsible for the separation of the concepts of mitigation and adaptation, consequently resulting in the climate regime focusing almost exclusively on issues of energy policy and emission control.²⁴ The COP Report from Cancun acknowledges the bias of the regime in the development of mitigation measures and states in paragraph 2 (b) that “*Adaptation must be addressed with the same priority as mitigation and requires institutional arrangements to support development*”.²⁵

The Cancun Adaptation Framework emerged from the Bali Action Plan and the work of the Ad-Hoc Working Group on Long Term Cooperative Action under the Convention. It states that “adaptation is a challenge faced by all Parties, and that enhanced action and international cooperation on adaptation is urgently required”.²⁶ The Cancun Adaptation Framework does not specify a measurable or time bound objective. Rather the objective is stated to be the enhancement of action on adaptation through international cooperation and consideration of matters relating to adaptation under the UNFCCC.²⁷ The framework does however specify that “a country-driven, gender-sensitive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems” that is based on best available science and appropriate, traditional and indigenous knowledge is to be used to integrate adaptation into relevant social, economic and environmental policies and actions, where appropriate.²⁸

One of the priorities of the Cancun Adaptation Framework is to provide developing country parties particularly vulnerable to climate change with “long-term, scaled-up, predictable, new and additional finance, technology and capacity-building, consistent with relevant provisions, to implement urgent, short-, medium – and long-term adaptation actions, plans, programmes and projects at the local, national, subregional and regional levels”.²⁹ This echoes a commitment from the UNFCCC

²³ Yamin and Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, supra, note 4, at 213.

²⁴ Marco Grasso, *Justice in Funding Adaptation under the International Climate Change Regime* (Netherlands: Springer, 2010), at 12.

²⁵ Cancun Adaptation Framework, supra, note 3.

²⁶ *Ibid.*, para. 11.

²⁷ *Ibid.*, paras. 12 and 13.

²⁸ *Ibid.*, para. 12.

²⁹ *Ibid.*, para. 18.

in Article 4 (4) that requires developed country parties to assist developing country parties that are particularly vulnerable to adverse effects of climate change by meeting the costs of adaptation arising from the adverse effects of climate change.³⁰ These provisions recognise the equity issues associated with adverse effects of climate change, and seek to remedy such issues through the transfer of money and other assistance.

5.3 Principles of the Climate Change Regime

Article 3 of the UNFCCC sets out a number of international environmental principles applicable to the regime. The preamble to the UNFCCC also contains references to international environmental principles.³¹ The principles are to be used to guide the implementation of the instrument and assist in meeting the ultimate objective in Article 2. The principles contained within the UNFCCC are applicable to the Kyoto Protocol³² and to all other instruments of the regime seeking to implement the ultimate objective of the convention.³³

The international environmental principles referred to within the UNFCCC are sourced from earlier international instruments, binding acts of international institutions and customary international law. Most of the international environmental principles referred to within the UNFCCC have not reached the status of customary international law. As such, it is necessary to analyse the text of the UNFCCC in order to understand the manner, scope and application of the principles within the climate regime. There is no exhaustive list of international environmental principles, however the work of Sands can be referred to authoritatively to identify the general rules and principles of international environmental law. The following seven principles identified by Sands will be examined and their influence on the climate change regime discussed:

1. The obligation reflected in Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration, namely that states have sovereignty over their natural resources and the responsibility not to cause transboundary environmental damage;
2. The principle of preventive action;
3. The principle of cooperation;
4. The concept of sustainable development (encompassing the concepts of sustainable use, inter-generational equity, intra-generational equity and integration);

³⁰ Also see UNFCCC, *supra*, note 1, Arts. 4 (8) and 4 (9).

³¹ Many of the statements in the preamble were part of earlier draft texts of the UNFCCC, which were relegated to the preamble as they were considered to be too controversial for inclusion within the Articles of the instrument. Yamin and Depledge *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, *supra*, note 4, at 67.

³² Kyoto Protocol, Preamble, *supra*, note 2, para. 4.

³³ UNFCCC, *supra*, note 1, Art. 3.

5. The precautionary principle;
6. The polluter-pays principle; and
7. The principle of common but differentiated responsibility.³⁴

The principles listed above are different from substantive legal rules that are in and of themselves enforceable. Principles are used within regulatory frameworks to guide the interpretation and implementation of the obligations within the source of law under consideration. The difference between a legal rule and principle was examined in the *Gentini* case, where it was stated that:

A 'rule'... is essentially practical and, moreover, binding... There are rules of art, as there are rules of government, while a principle 'expresses a general truth, which guides our action, serves as a theoretical basis for the various acts of our life, and the application of which to reality produces a given consequence.'³⁵

The inclusion of a set of guiding principles within the text of the Convention was controversial during the drafting the agreement. The United States of America, along with other developed countries, did not want to include open-ended principles within the agreement due to concerns that their inclusion would lead to the creation of additional commitments beyond those clearly spelled out within the Convention. Developing countries felt that it was essential to include a statement on principles within the articles of the text to guide the implementation of the text.³⁶ The final text of the agreement adopts the developing country perspective, thus creating within Article 3 a normative framework to support the implementation of the UNFCCC.³⁷ The principles contained within Article 3 are therefore not directly enforceable, but can be used to inform policy development and implementation modalities within the broader climate change regime. The seven international environmental general rules and principles identified by Sands will now be analysed in the context of the entire text of the UNFCCC.

5.3.1 State Sovereignty and Responsibility

The principle of sovereignty, while an essential component of the international legal order, presents difficulties in the implementation of the concept arising from the

³⁴ Philippe Sands, *Principles of International Environmental Law*, 2nd ed. (Cambridge: Cambridge University Press, 2003), at 231.

³⁵ *Gentini case (Italy/Venezuela)* M.C.C. (1903), J.H. Ralston and W.T.S. Doyle, Venezuelan arbitration OF 1903 ETC. (1904), 720, 725, cited in Sands, *Principles of International Environmental Law*, supra, note 34, at 233.

³⁶ Daniel Bodansky, "The United Nations Framework Convention on Climate Change: A Commentary", 18 *Yale Journal of International Law* (1993), 451, at 501.

³⁷ Yamin and Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, supra, note 4, at 66.

dual-natured character of the principle.³⁸ The principle of sovereignty brings with it both rights and limitations. The preamble to the UNFCCC recognises the two elements of sovereignty by recalling the wording of Principle 21 of the Stockholm Declaration and stating in paragraph 8 of the UNFCCC Preamble that States have:

the sovereign right to exploit their own resources pursuant to their own environmental policies, 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.

Inclusion of this principle within the preamble and not within the text of the UNFCCC suggests that sovereign rights to unlimited greenhouse gas (GHG) emissions are not recognised by the agreement. The UNFCCC therefore seeks to limit state sovereign power by imposing restrictions on the level of allowable GHG emissions and as such influencing the types of activities and industries carried out within a territory. Such limitations therefore heavily impinge upon states' sovereign rights to regulate greenhouse gas emission output within their territories. It should, however be noted that the UNFCCC and Kyoto Protocol do not prohibit or remove states' rights to emit greenhouse gases, rather these instruments seek to curb the increase of such emissions within the global commons.

Some literature has focused on the responsibility component of this definition suggesting that harm suffered by countries as a result of climate change should be remedied by international law.³⁹ Okowa's work identifies a number of difficulties associated with implementing the principle of responsibility including: issues of retroactivity (making states liable to emission harm caused prior to the introduction of the UNFCCC); apportioning responsibility among states; apportioning responsibility for future damage; and managing the scientific uncertainty associated with such claims.⁴⁰ It is also noted that the traditional avenue for imposing responsibility to correct harm has occurred through litigation, which in the context of climate change has proved problematic.⁴¹ The development of a loss and damage mechanism to redress harm arising from climate change provides an alternative to litigation within the climate regime. Such a mechanism does not however, impose responsibility on a particular state; rather it seeks to resolve disputes by remedying the harm suffered as a result of climate change without apportioning liability to a particular state or region.⁴²

³⁸ On the different discipline understandings (international law, international relations, philosophy and economics see Melea Lewis, Charles Sampford and Ramesh Thakur, "Introduction", in Trudy Jacobsen, Charles Sampford and Ramesh Thakur (eds), *Re-envisioning Sovereignty: The End of Westphalia* (London: Ashgate Publishers, 2008), 1, at 8.

³⁹ See for example Richard Tol and Roda Verheyen, "State Responsibility and Compensation for Climate Change Damage – a legal and economic assessment", 32 *Energy Policy* (2004), 1109 .

⁴⁰ Phoebe Okowa, "Responsibility for Environmental Damage", in Malgosia Fitmaurice, David Ong and Panos Merkouris (eds), *Research Handbook on International Environmental Law* (United Kingdom: Edward Elgar Publishers, 2010), 303, at 304.

⁴¹ Ibid. and on consideration of climate change see generally Brian Preston, "Climate Change Litigation (Part 1)", 5 *Carbon and Climate Law Review* (2011), 3, and Jacqueline Peel, "Issues in Climate Change Litigation", 5 *Carbon and Climate Law Review* (2011), 15.

⁴² See Decision 7/CP.17, Work Programme on Loss and Damage, UN Doc. FCCC/CP/2011/9 Add.2, 15 March 2012.

5.3.2 *Principle of Preventative Action*

The principle of preventative action requires states to prevent damage to the environment and to reduce, limit, or control activities which might cause or risk such damage.⁴³ While the principle of preventative action is not included as principle within Article 3 of the UNFCCC, the principle of preventative action is encapsulated within the objective clause within Article 2, which requires parties to prevent dangerous anthropocentric interference with the climate system. While similar to the principle of sovereignty and responsibility, the principle of preventative action can be distinguished from the principle of sovereignty and responsibility in two ways. Firstly, the principle of preventative action requires a certain objective to be fulfilled: that of reducing environmental damage. Secondly, the preventative principle can operate to prevent a state from damaging the environment within its jurisdiction.⁴⁴ The Kyoto Protocol in Article 3(1) applies the principle of preventative action by requiring parties to reduce their overall emissions of greenhouse gasses by at least 5% below 1990 levels during the first commitment period. Such a provision seeks to reduce environmental damage and prevent parties from damaging the environment further within their jurisdictions.

5.3.3 *Principle of Cooperation*

The principle of cooperation sometimes referred to as good neighbourliness is defined in principle 27 of the Rio Declaration as requiring that “[s]tates and people shall co-operate in good faith and in a spirit of partnership in the fulfilment of the principle embodied in this Declaration and in the further development of international law in the field of sustainable development”. This general principle of cooperation has evolved to include more concrete duties such as information sharing and participation in decision-making processes.⁴⁵ The UNEP Draft Principles recognise this evolution of the principle by stating in principle 7 that “exchange of information, notification, consultation and other forms of cooperation regarding shared natural resources are carried out on the basis of the principle of good faith and in the spirit of good neighbourliness”.⁴⁶

⁴³ Sands, *Principles of International Environmental Law*, supra, note 34, at 246.

⁴⁴ *Ibid.*, at 246.

⁴⁵ *Ibid.*, at 250.

⁴⁶ Draft Principles of Conduct for the Guidance of States in the Conservation and Harmonious Exploitation of Natural Resources Shared by Two or More States, United Nations Environment Programme Governing Council, XII Plenary Meeting, UN Doc. UNEP/GC/101 and Corr.1, 9 to 25 May 1978.

The principle of cooperation is found in many instances within the UNFCCC. Such repeated inclusion of this principle demonstrates an understanding of the necessity of global cooperative action in addressing climate change. The preamble in paragraph 6 calls for “the widest possible cooperation by all countries and their participation in an effective and appropriate international response”. This call for cooperation could be interpreted in two ways. Firstly, it could be interpreted as requiring all parties to adopt commitments and take action in implementing mitigation and adaptation policies and activities. Or secondly it could be interpreted as merely requiring all parties to the UNFCCC to take part in the negotiation process. The first interpretation would clearly place a much heavier onus on parties, and would likely be well received by many who are frustrated by the lack of good neighbourliness conduct at recent COP negotiations.⁴⁷ The second interpretation, only requiring participation at negotiating sessions, is however reflective of state practice at COP negotiations. The ambiguity of this statement and the potentially onerous obligations that it could impart likely explain the inclusion of this statement within the preamble.

Article 4 of the UNFCCC creates binding and more specific cooperation duties.⁴⁸ The parties are requested to cooperate on a number of tasks including to:

- Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions⁴⁹;
- Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system⁵⁰;
- Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations⁵¹;
- Communicate to the Conference of the Parties information related to implementation in accordance with Article 12.⁵²

⁴⁷ Criticism has been levelled against the UNFCCC COP process with many feeling that the process is moving too slow and that the process does not bind many of the world’s highest emitters. The Copenhagen negotiations in particular attracted criticism concerning the lack of political will of the parties to reach a legally binding outcome. For an analysis of what led to failure in Copenhagen see Cameron Hepburn and Nicholas Stern, “A New Global Deal on Climate Change”, 27 *Oxford Review of Economic Policy* (2011), 259, at 259–279. Also see Daniel Bodansky and Elliot Diringer, “The Evolution of Multilateral Regimes: Implications for Climate Change”, 2010, available at: <http://www.pewclimate.org/docUploads/evolution-multilateral-regimes-implications-climate-change.pdf> (last accessed on 5 January 2012).

⁴⁸ Also note that the Kyoto Protocol creates additional cooperation obligations for parties to this agreement in Art. 1(b) and Arts. 10 (c), (d), (e), supra, note 2.

⁴⁹ UNFCCC, supra, note 1, Art. 4 (c).

⁵⁰ Ibid., Art. 4 (h).

⁵¹ Ibid., Art. 4(i)

⁵² Ibid., Art. 4 (j). The requirements of Article 12 will be discussed in greater detail further on in this chapter.

5.3.4 *The Concept of Sustainable Development*

The concept of sustainable development originates from the 1987 Brundtland Report where the concept was described as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.⁵³ The concept of sustainable development has become the one of the key goals of international environmental and developmental regimes, though implementation of the concept remains elusive.⁵⁴ Sands identifies four principles of the concept of sustainable development:

1. The need to preserve natural resources for the benefit of future generations (the principle of inter-generational equity);
2. The aim of exploiting natural resources in a manner which is sustainable or prudent or rational or wise or appropriate (the principles of sustainable use);
3. The equitable use of natural resources, which implies that use by one state must take account of the needs of other states (the principle of equitable use or intra-generational equity);
4. The need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives (the principle of integration).⁵⁵

The principle of inter-generational equity⁵⁶ is recognised in the final line of the preamble and in Article 3(1) of the UNFCCC. The final line in the preamble states that the parties to this convention are “determined to protect the climate system for present and future generations”. Similarly, Article 3(1) is broad in coverage stating that “[t]he Parties should protect the climate system for the benefit of present and future generations”. The most contentious issue of the principle is defining the

⁵³ World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), at 43.

⁵⁴ For instance, a major summit – the United Nations Conference on Sustainable Development (Rio+20) – will take place in June 2012 in Rio de Janeiro, Brazil. This event marks the 20th anniversary of the Rio Declaration 1992, signed at the Earth Summit in Rio. The objective of the Conference is to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges. The Conference will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development. For the complete agenda and further background information, see on the Internet <http://www.uncsd2012.org> (last accessed on 25 March 2012).

⁵⁵ Sands, *Principles of International Environmental Law*, supra, note 34, at 253.

⁵⁶ For further background on the concept of inter-generational equity see Edith Brown Weiss, “Our Rights and Obligations to Future Generations for the Environment”, 84 *American Journal of International Law* (1990), 198.

nature and extent of the rights of future generations.⁵⁷ The current incorporation of the principle of inter-generational equity within the UNFCCC does not create any specific rights or duties; it merely recognises that future generations have an interest in the natural environment.

Applying the principle of sustainable use requires the adoption of a standard that sets out the rate of use or exploration of specific natural resources, as opposed to relying on their preservation for future generations as an outcome.⁵⁸ The standard of sustainable development within the UNFCCC can be found in the objectives clause of Article 2, where it is stated that stabilisation of greenhouse gases must occur within a “timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”. As discussed above, the AR4 report of the IPCC suggests that sustainable use in the context of climate change involves limiting temperature increases to a maximum of 2° in order to meet the ecosystem, food production and economic standards of the UNFCCC.⁵⁹

The principle of equitable use/intra-generational equity are based upon notions of fairness with regards to the access and use of the environment and enjoyment of the environment. The concept of equity also allows for a consideration of how to share the benefits and burdens of environmental protection and or environmental harm (for example pollution, water scarcity). There are parallels between the principles of equitable use/intra-generational equity and theories of distributive and environmental justice.⁶⁰ The principle of equitable use/intra-generational equity gives recognition to the fact that the poorest of the poor in the world (including poor people in prosperous societies) are going to be the groups worst hit by climate change.⁶¹ This principle can be considered from two perspectives:

An international perspective: examining the inequities that arise between the distribution of environmental benefits and burdens between different countries; and

A country level perspective: examining the inequities which arise between different community groups and stakeholders within a specific region in distributing environmental benefits and burdens.

⁵⁷ Peter Doherty, “What Do We Owe to Future Generations?”, in Helen Sykes (ed.), *Future Justice* (Albert Park, Vic.: Future Leaders, 2010), 21 and more generally see generally Laura Westra, *Environmental Justice and the Rights of Unborn and Future Generations: Law, Environmental Harm and the Right to Health* (United Kingdom: Earthscan, 2006).

⁵⁸ Sands, *Principles of International Environmental Law*, supra, note 34, at 257.

⁵⁹ The most recent IPCC report is the 4th Assessment Report, available at http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml (last accessed on 25 March 2012).

⁶⁰ See generally on the topic of environmental justice David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford: Oxford University Press, 2007); Klaus Bosselman and Benjamin J. Richardson, *Environmental Justice and Market Mechanisms: Key Challenges for Environmental Law and Policy* (London: Kluwer Law, 1999).

⁶¹ Maxine Burkett, “Just Solutions to Climate Change: A Climate Justice Proposal for a Domestic Clean Development Mechanism”, 56 *Buffalo Law Review* (2008), 169, at 177.

The climate change regime has focused on the first perspective, that of the inequities that arise between developed and developing countries in the climate change context. Climate change is perceived as raising ethical and justice issues. It has been stated that “[c]limate change is ... chiefly an issue of (in)justice, since it has been caused by rich nations and poses risks upon the poor, who are the least responsible and the most vulnerable to the damages and risk associated with it”.⁶² The UNFCCC recognizes indirectly that developed countries are largely responsible for global emissions by directing “developed country parties to take the lead in combating climate and adverse effects thereof” in Article 3(1). The Cancun Adaptation Framework, however recognizes directly “that the largest share of historical global emissions of greenhouse gases originate in developed countries, and that owing to this historical responsibility developed country Parties must take the lead.”⁶³

The UNFCCC also guides parties in Article 3(2) to recognize:

The specific needs and circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.

Article 4 (8) of the UNFCCC identifies a number of groups likely to suffer from the adverse impacts of climate change and implementation of response measures. These groups include: small island countries, countries with low-lying coastal areas, countries prone to natural disaster, drought, and desertification, countries with fragile ecosystems, countries with economies highly dependent on income associated with consumption or trade in fossil fuels, and land-locked and transit countries. Within its preamble, the Cancun conference report notes “Resolution 10/4 of the United Nations Human Rights Council on human rights and climate change, which recognizes that the adverse effects of climate change have a range of direct and indirect implications for the effective enjoyment of human rights and that the effects of climate change will be felt most acutely by those segments of the population that are already vulnerable owing to geography, gender, age, indigenous or minority status, or disability”. As such the Cancun Adaptation Framework calls for parties to reduce vulnerability and assist in building resilience in countries with urgent and immediate needs.⁶⁴

The principle of integration requires for environmental considerations to be taken into account in economic and development activities. Article 3 (4) of the UNFCCC directs parties to ensure that “policies and measures to protect the climate system against human-induced change ... be integrated with national development programmes, taking into account that economic development is essential for adopting

⁶² Chukwumerije Okereke and Heike Schroeder, “How Can the Objectives of Justice, Development and Climate Change Mitigation be Reconciled in the Treatment of Developing Countries in a Post-Kyoto Settlement?”, Background Paper for the DSA-DFID Policy Forum on Climate Change and International Development, University of Greenwich, 2 June 2008, at 1.

⁶³ Cancun Adaptation Framework, *supra*, note 3, Art. 8.

⁶⁴ *Ibid.*, Art. 11.

measures to address climate change”. Environmental impact assessments and strategic environmental assessments are the tools used at the state level to integrate environmental considerations into development and planning decisions. Concerns about the preservation of economic development have led to the development of market-based mechanisms (such as emission trading schemes and carbon taxes) to regulate domestic carbon emissions.

5.3.5 *The Precautionary Principle*

The precautionary principle seeks to provide assistance in the development and implementation of international environmental law when there is scientific uncertainty. The principle includes considerations of risk prevention, cost effectiveness, ethical responsibilities towards the earth and the shortcomings of human understanding.⁶⁵ Principle 15 of the Rio Declaration provides a definition of the principle: “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”. Differing views exist as to the meaning of the principle with some believing that it provides a justification for early intervention, while others view the principle as hampering human activity and creating a system of over-regulation.⁶⁶ From a legal perspective the crucial component of the principle is a requirement to take positive action to protect the environment, prior to the existence of scientific evidence detailing specific harm. The principle is also proactive in nature and operates to prevent unsustainable or degrading environmental practices as opposed to the majority of reactionary processes used in environmental regulation.

The precautionary principle is included within Article 3(3) of the UNFCCC and requires parties to:

take precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.

Findings from the Stern Review suggest that immediate adoption and implementation of the precautionary principle is required.⁶⁷ The complicating factor in implementing the precautionary principles arises in the determination of what is considered to be a cost-effective solution. The preamble to the UNFCCC provides some guidance

⁶⁵ Minna Pyhälä, Anne Brusendorff and Hanna Paulomäki, “The Precautionary Principle”, in Malgosia Fitmaurice, David Ong and Panos Merkouris (eds), *Research Handbook on International Environmental Law* (United Kingdom: Edward Elgar Publishers, 2010), 203, at 203.

⁶⁶ Sands, *Principles of International Environmental Law*, supra, note 34, at 267–268.

⁶⁷ Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

on cost effectiveness in paragraph 17 by stating that “various actions to address climate change can be justified economically in their own right and can also help in solving other environmental problems”.

Assessments about cost effectiveness are value judgments based on “the amount of damage that is acceptable; and the costs that society is willing to pay to reduce or lower the risk of such damage”.⁶⁸ The global consensus on the level of acceptable climate change is a temperature increase of 2°. ⁶⁹ Determining the cost that the global community is willing to pay in order to reduce global warming can be understood by reference to the mitigation pledges provided during and after the Copenhagen (2009) and Cancun (2010) climate negotiations.⁷⁰ Assessments carried out by the United Nations Environment Program suggest that the emission pledges reached at Copenhagen will not be sufficient to prevent more than a 2° global temperature rise.⁷¹ A challenge therefore in implementing the precautionary principle within the climate regime will be to increase mitigation pledges and the associated implementation of such pledges in order to align with the agreed level of acceptable climate damage.

5.3.6 *The Polluter Pays Principle*

The polluter pays principle requires that individuals, states or corporations engaging in polluting or hazardous activities that cause damage to the environment should be held responsible for the consequences of their action.⁷² The polluter pays principle is defined in principle 16 of the Rio Declaration as:

National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interest and, without distorting international trade and investment.

The UNFCCC does not incorporate the polluter pays principle. A number of climate change suits are being brought which in effect seek to implement the polluter

⁶⁸ Pyhälä, Brusendorff and Paulomäki, “The Precautionary Principle”, *supra*, note 65, at 215.

⁶⁹ Global acceptance refers to the agreed upper temperature increases agreed within the climate change regime. See Decision 2/CP.17, *supra*, note 15, para. 2.

⁷⁰ Compilation of Economy-wide Emission Reduction Targets to Be Implemented by Parties included in Annex I to the Convention, FCCC/SB/2011/INF.1/REV.1, 7 June 2011.

⁷¹ Kelly Levin and Murray Ward, “The Emissions Gap Report”, 2010, available at: <http://www.unep.org/publications/ebooks/emissionsgapreport> (last accessed on 24 February 2012).

⁷² Priscilla Schwartz, “The Polluter-pays Principle”, in Malgosia Fitmaurice, David Ong and Panos Merkouris (eds), *Research Handbook on International Environmental Law* (United Kingdom: Edward Elgar Publishers, 2010), 243.

pays principle.⁷³ National courts have taken a cautious approach with such cases and it seems that there is a preference from both the judiciary and the literature surveying these decisions for legislative responses to be created dealing with the imposition of liability for harm and the specification of the appropriate remedy for such harm (i.e. who should receive payment, on what basis and for what purpose). The evolution of cases in this area is a response to the lack of legislative responses to climate change at both the international and national levels giving effect to a polluter pays type obligation.⁷⁴

5.3.7 *The Principle of Common But Differentiated Responsibility*

The concept of common but differentiated responsibility adopts a substantive approach to justice by recognising that different groups before the law require different rights and responsibilities. As such, the principle recognises:

- The common responsibility of countries to protect the environment;
- The differing contributions of countries to climate change; and
- The differing inabilities of countries to prevent, reduce and control the threat of climate change.⁷⁵

The principle therefore, recognises the historical differences in the contribution of developed and developing countries to climate change and the difference in their respective economic and technical capacity to respond to these problems.⁷⁶ This concept was defined and brought to life through the 1992 Rio

⁷³ *Connecticut v American Electrical Power Company Inc*, Judgement, 20 June 2011, 406F.Supp. 2d, at 265; *Korsinsky v U.S. EPA*, Judgement, 29 September 2005, No 05–859 (NRB), 205 U.S. Dist LEXIS 21778; *California ex rel Brown v General Motors Corporation*, Judgement, 17 September 2007, U.S. Dist LEXIS 68547. For a discussion of all of these cases see Theodore J. Boutros and Dominic Lanza, “Global Warming Tort Litigation: The Real Public Nuisance”, 80 *Ecology Law Currents* (2008), 80.

⁷⁴ The Kyoto Protocol aims at an international solution to this problem. However, any climate policy measures would still have to be implemented at the national level. Germany and the European Union are acting as forerunners in international climate change policy. Michael Grubb, “Seeking Fair Weather: Ethics and the International Debate on Climate Change”, 71 *International Affairs* (1995), 463.

⁷⁵ Angela Williams, “Promoting Justice within the International Legal System: Prospects for Climate Refugees”, in Benjamin J. Richardson, Yves Le Bouthillier, Heather McLeod-Kilmurray, Stephan Wood (eds.), *Climate Law and Developing Countries: Legal and Policy Challenges for the World Economy* (Cheltenham: Edward Elgar, 2009), 84, at 90.

⁷⁶ Kati Kulovesi and Maria Gutierrez, “Climate Change Negotiations Update: Process and Prospects for a Copenhagen Agreed Outcome in December 2009”, 18 *Review of European Community and International Environmental Law* (2009), 229, at 236.

Declaration.⁷⁷ The principle was also defined and explained in Article 3(1) of the UNFCCC⁷⁸ which states that:

“The parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

The Kyoto Protocol is explicitly based on the Common but Differentiated Responsibility Principle.⁷⁹ As stated by Honkonen⁸⁰ “the burden-sharing agreement under the Kyoto Protocol was a remarkable achievement, paving the way to country specific commitments in international environmental cooperation”. Specifically, the Protocol demonstrated the applicability of the Common but Differentiated Responsibility principle through its operational provisions, for example, by excluding non-Annex 1 countries (which mainly consist of developing countries) from binding emissions reduction obligations. Future climate instruments will change the way in which the responsibility burden is shared, with the Durban Platform for Enhanced Action seeking to create some form of mitigation obligation for all parties to the UNFCCC by 2020.

The principle of common but differentiated responsibility also features prominently within adaptation policies of the regime. Paragraph 14 of the Cancun Adaptation Framework, the key provision of the framework defining the parameters of domestic adaptation policies and measures recognizes the application of the principle of common but differentiated responsibility in the implementation of such measures. The principle of common but differentiated responsibility is a central pillar in the climate change regime. The ability of the principle to recognize historical acts

⁷⁷ See Rio Declaration on Environment and Development, Rio de Janeiro, 14 June 1992, A/CONF.151/5/Rev.1, Vol.1, Annex 1. Most notably, see Principle 6, which states that the “special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.” See also Principle 7, which states that “States should cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command”.

⁷⁸ See Art. 4(i) of the UNFCCC, which outlines the national and regional development priorities, objectives and circumstances *supra*, note 1. See also Art. 8, which explains that parties shall give full consideration as to what actions are necessary under the convention specifically in relation to the needs and concerns of developing country parties, *supra*, note 1.

⁷⁹ See UNFCCC, *supra*, note 1, Art. 10.

⁸⁰ Tuula Honkonen, “The Principle of Common But Differentiated Responsibility in Post 2012 Climate Negotiations”, 18 *Review of European Community & International Environmental Law* (2009), 257, at 259. See also M. Bothe, “The United Nations Framework Convention on Climate Change – An Unprecedented Multilevel Regulatory Challenge”, 63 *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* (2005), 239, at 252.

and the current capacity of parties to respond to climate change will see this principle continuing to have great application in all future climate change policies and measures.

5.4 Methods of the Climate Change Regime

The UNFCCC establishes the procedural manner in which the climate change regime is to evolve and operate. Article 7 establishes the Conference of the Parties (COP), which serves as the supreme body of the Convention. The COP is charged with: reviewing the implementation of the Convention; making any decision necessary to promote the effective implementation of the Convention; and to review any related instruments adopted by the COP.⁸¹ The COP is comprised of representatives of all governments that are parties to the Convention, who meet annually to progress implementation of the Convention.⁸² Each party has one vote and regional economic integration organisations (for example the European Union) are able to vote collectively.⁸³ While the regime seeks to make decisions on all matters of substance by consensus, when efforts to reach consensus have been exhausted and no agreement has been reached the decision shall at last resort be taken by a two third majority vote.⁸⁴ The COP negotiations of the climate change regime have attracted criticism from the media and some academics for failing to deliver on measures to address climate change. The urgency in which climate change measures need to be undertaken, versus the cost implications of implementing such measures divides parties opinions on the types of measures to be adopted at COP negotiations. The Kyoto Protocol demonstrates that parties to UNFCCC are willing to act in the absence of consensus in order to implement measures to meet the objective of the regime.

5.4.1 *Mitigation Regime*

The mitigation regime is based on the principles of preventative action and common but differentiated responsibility. Mitigation by its very nature seeks to prevent damage from arising. And yet, the principle of common but differentiated responsibility is applied in the Kyoto Protocol by establishing binding obligations for industrialized countries only. The UNFCCC and Kyoto Protocol both advocate for developed

⁸¹ UNFCCC, *supra*, note 1, Art. 7(2).

⁸² *Ibid.*, Art. 7(4).

⁸³ Organizational Matters: Adoption of Rules and Procedures, FCCC/CP/1996/2, 22 May 1996, rule 41.

⁸⁴ *Ibid.*, rule 42.

nations to show leadership in implementing mitigation measures within their own territories first; along with providing assistance to developing countries in order for them to implement mitigation measures.⁸⁵ The mitigation regime uses a combination of methods to achieve this purpose and the ultimate objective of the Convention. These methods include:

- The obligation to implement policies and measures at the domestic level to limit anthropogenic emissions of greenhouse gases;
- The setting the targets and allocation of assigned amount units;
- The application of the Kyoto Protocol flexibility mechanisms: Joint Implementation; the Clean Development Mechanism; and Emissions Trading, which can be used to assist in meeting the targets imposed by the regime; and
- The submission of reports outlining emission reduction activities that comply with the guidelines and methodologies developed by the Intergovernmental Panel on Climate Change.

The UNFCCC creates specific obligation for parties in Article 4(2). Article 4(2) (a) provides that parties “shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs”. Article 2(a) of the Kyoto Protocol outlines a number of areas in which parties are requested to implement or elaborate policies and measures. This list includes a wide range of measures such as: energy efficiency; protection of sinks; sustainable forms of agriculture; renewable forms of energy; progressive reduction or phasing out of market imperfections, fiscal incentives, tax or duty exemptions that run counter to objective of Convention; encouragement of reforms aimed at reducing emissions of greenhouse gases; and measures to limit emissions in the transport sector. Proactive parties could use this list of measures as a checklist to ensure that measures to reduce emissions greenhouse gases occurs in all relevant sectors. Article 10 of the Kyoto Protocol affirms the existing commitments under Article 4 of the UNFCCC and requests parties to formulate cost effective programs to improve the quality of local emission factors taking into account their common but differentiated responsibilities and national development priorities.⁸⁶ The wording of Article 10 is reflective of the objective of the regime by its reference to cost effective measures, which could be perceived as watering down the commitments by specific inclusion of this criterion.

Article 3(1) of the Kyoto Protocol sets individual emission targets for Annex I parties, the details of which are set out in Annex B of the Protocol. Each party is allocated a quota of assigned amount units, which are calculated pursuant to their quantified emission limitation and reduction commitment (QELRO). Assigned amount units are the currency used within the regime and represent the carbon dioxide equivalent of all gases covered within the regime (carbon dioxide, methane, nitrous

⁸⁵ See for example UNFCCC, *supra*, note 1, Art. 4(a) and (b).

⁸⁶ *Ibid.*, Art. 10 (a).

oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride).⁸⁷ Parties are obligated under Article 3(1) to ensure that they do not exceed their allocation of assigned amount units during the first commitment period (2008–2012).

The flexibility mechanisms were designed to lower the overall costs associated with meeting the emission targets contained in Annex B of the Protocol. The flexibility mechanisms of the Kyoto Protocol are considered to be innovative in nature by creating a means in which the objective of the UNFCCC can be realised through the participation of a broader range of parties than Annex I members alone.⁸⁸ The mechanisms provide a degree of flexibility by allowing for emission reduction activities that occur outside the territory of an Annex I party to count towards their emission reduction commitments as required by Article 3 of the Protocol. However, parties are not able to invest solely in emission reduction activities that take place outside of their jurisdiction; there is a requirement under all three mechanisms that participation within these mechanisms can only be used to supplement emission reduction measures occurring within the territory of the state whose emissions are in questions.

Article 6 of the Kyoto Protocol gives life to wording contained in Article 4(2) (b) of the UNFCCC, which foreshadows Annex I parties meeting their emission reduction objectives individually or jointly. Joint Implementation (JI) allows for parties to transfer or acquire from another Annex I Emission Reduction Units (ERUs). Joint implementation is seen as providing a cost effective means of meeting QELRO, as it allows parties to source ERUs from regions where the costs associated with emission reduction are lower. There are some requirements that must be met in order for ERUs to be issued. The ERUs must come from a project activity and must meet additionality requirements⁸⁹; parties are prevented from acquiring ERUs if they are in breach of their reporting obligations under Article 5 and 7 of the Protocol⁹⁰; and the acquisition of ERUs must be supplemental to domestic actions.⁹¹ Liability for ensuring the validity of the ERUs passes to the party acquiring the interest, who must ensure that the JI project has been verified before completing a transaction or risk being liable for the costs of remediation activities.⁹²

The Clean Development Mechanism (CDM) evolved from a proposal made by Brazil that sought to establish a non-compliance fund, the proceeds of which would be used to fund mitigation and adaptation activities in non-Annex I countries.⁹³

⁸⁷ The gases covered by the regime are set in Annex A of the Kyoto Protocol, *supra*, note 2.

⁸⁸ Freestone, “The International Climate Change Legal and International Framework: An Overview”, *supra*, note 18, at 12.

⁸⁹ Kyoto Protocol, *supra*, note 2, Art. 6 (1) (a) and (b).

⁹⁰ *Ibid.*, Art. 6 (1) (c).

⁹¹ *Ibid.*, Art. 6 (1) (d). The Kyoto Protocol does not define supplementarity, but the European Union has decided that this means at least 50% of domestic policies and measures.

⁹² *Ibid.*, Art. 6 (4).

⁹³ See for further discussion on this point Roda Verheyen, *Climate Change Damage and International Law: Prevention, Duty and State Responsibility* (Netherlands: Martinus Nijhoff Publishers, 2005), at 113.

The Clean Development Mechanism as described in Article 12 instead operates as a project fund that allows Annex I parties to invest in emission reduction activities in developing countries. The term used to describe the currency of CDM transactions is Certified Emission Reduction units (CERs). The CDM creates an avenue for sustainable development to take place in developing countries, which provides benefits to the country in which the project takes place and which also assists in meeting the ultimate objective of the Convention. The CDM has a number of procedural requirements such as: an Executive Board that oversees all transactions⁹⁴; designated operational entities (DOEs) who certify that participation in CDM activities is voluntary, that real and measurable long term mitigation benefits are achieved as a result of CDM activities, and that reductions are additional to any that would have occurred in absence of the project.⁹⁵ A share of proceeds from CDM activities is to be used to cover the administrative costs associated with verification as well as assisting developing country parties particularly vulnerable to adverse effects of climate change to meet the costs of adaptation.⁹⁶

Article 17 deals with the concept of emission trading and allows parties to participate in emission trading for the purpose of fulfilling their Article 3 commitments. This Article provides the basis for the existence of a global emission trading scheme, with participation contingent upon the trade of emission units being supplemented by domestic activities. Emissions trading systems have been established at the domestic level by the European Union, several states and provinces in North America, New Zealand, and other jurisdictions as a means of meeting Article 3 commitments.

A stringent reporting framework is established by the UNFCCC and the Kyoto Protocol to measure emission reduction activities and enhancement of sinks. Article 4(2) (b) of the UNFCCC requested parties to communicate detailed information on their mitigation policies and measures implemented at the domestic level within the first 6 months of Convention being in force. Article 12 of the UNFCCC provides guidance on the reporting requirements requesting: a national inventory of anthropogenic emissions by sources and removal by sinks of greenhouse gases; a general description of the steps taken by the parties; a detailed description of the policies and measures that it has adopted to reduce sources of emissions and to enhance sinks or reservoirs; and a specific estimate of the effects that the policies and measures adopted will have on anthropogenic emissions.

The Kyoto Protocol requires parties to establish national systems that estimate sinks and sources of greenhouse gas emissions, and prescribes that such estimates should be based upon guidelines and methodologies developed by the Intergovernmental Panel on Climate Change and the Subsidiary Body for Scientific and Technological Advice.⁹⁷ Article 7 of the Kyoto Protocol requires parties to submit their annual

⁹⁴ Kyoto Protocol, *supra*, note 2, Art. 12 (4)

⁹⁵ *Ibid.*, Art. 12 (5).

⁹⁶ *Ibid.*, Art. 12 (8).

⁹⁷ Kyoto Protocol, *supra*, note 2, Art. 5. The IPCC revised 1996 guidelines for national greenhouse gas inventories are the current guidelines prescribed by the regime.

inventories along with supplementary information to demonstrate compliance with Article 4 (2) (a) of the Convention. Article 8 provides that expert teams will provide a thorough and comprehensive technical assessment of all aspects of the implementation of the reports submitted by parties.

5.4.2 *Adaptation Methods*

The adaptation regime is evolving with consideration of equity as a central theme. The principle of intra-generational equity has particular relevance in relation to adaptation measures and policies. The methods of the adaptation regime are not as established as those of the mitigation regime. The Cancun Adaptation Framework was established in 2010 and does not create legally binding commitments for the parties.⁹⁸ Rather, it sets out a program to enhance adaptation action by the parties. Paragraph 14 of the Cancun Adaptation Frameworks sets forth the activities and parameters of the regime. The measures in paragraph 14 can be categorised as follows:

- Conduct impact vulnerability and adaptation assessments⁹⁹;
- develop national and subnational adaptation plans and strategies and implement prioritised adaptation projects and programmes under the plan¹⁰⁰;
- strengthen institutional capacity to implement adaptation activities in the areas of water resources; health; agriculture and food security; infrastructure; socio-economic activities; aquatic ecosystems and coastal zones¹⁰¹;
- enhance climate change related disaster risk reduction strategies that pay regard to the Hyogo Framework for Action. Examples of activities include: early warning systems; risk assessment and management; develop risk transfer and risk share mechanisms such as insurance; and increase public awareness and education concerning climate adaptation¹⁰²;
- coordinate measures dealing with climate change induced displacement, migration and planned relocation at the national, regional and international levels¹⁰³;
- improve climate-related data collection, modelling and knowledge systems, and improve research and technologies associated with adaptation activities in developing countries.¹⁰⁴

The Durban COP negotiations led to the advancement of implementation of the Cancun Adaptation Framework through: the establishment of modalities for the Adaptation Committee; definition of activities under the work program on loss and

⁹⁸ Cancun Adaptation Framework, *supra*, note 3, para. 13.

⁹⁹ *Ibid.*, para. 14 (b).

¹⁰⁰ *Ibid.*, para. 14 (a) .

¹⁰¹ *Ibid.*, para. 14 (c) and (d).

¹⁰² *Ibid.*, para. 14 (e) and (h).

¹⁰³ *Ibid.*, para. 14 (f).

¹⁰⁴ *Ibid.*, para. 14 (g), (h) and (i).

damage¹⁰⁵; and the development of modalities and guidelines for national adaptation plans. The developments concerning the adaptation committee and the guidelines on national adaptation plans will be briefly canvassed before moving on to discuss the issue of funding, which is central to the operation of the adaptation regime.

The Adaptation Committee will be comprised of 16 members and will include: 2 members of each of the 5 United Nations regional groups; 1 member from a small island developing state; 1 member from a least developed country party; 2 members from parties included in Annex I to the Convention; 2 members not included in Annex I to the Convention.¹⁰⁶ This is a fairly balanced committee, though it could be improved by giving the two seats to non-Annex I members to other least developed nations in order to increase their representation and say in how measures affecting their country are progressed. The Adaptation Committee will coordinate and manage linkages with all relevant bodies within the climate change and other relevant international institutions working on climate related adaptation and report annually to the COP on its progress and recommendations for action.¹⁰⁷ This is a particularly important task in the realm of adaptation, as climate related disaster risk reduction activities and adaptation initiatives currently take place in a fragmented manner across a number of international institutions, without any one regime playing an authoritative or lead role. The Adaptation Committee has been requested to develop a 3-year plan for its work that includes milestones, activities, deliverables, and resource requirements, which is to be approved at the COP 18 negotiations in 2012.¹⁰⁸ This 3-year plan will provide a strategic framework of action that is currently lacking within the adaptation regime.

The initial guidelines for the formation of national adaptation plans by least developed country parties are located in the Annex of the COP Decision on National Adaptation Plans.¹⁰⁹ The guidelines envisage a four-stage cycle of planning. Parties have been requested to trial on a voluntary basis the implementation of these guidelines and provide feedback on the usefulness and ways in which these guidelines can be improved.¹¹⁰ The elements of national adaptation plans are summarized below:

Laying the groundwork and addressing gaps:

- Identifying gaps and weakness in enabling environments;
- conducting assessment on climate change impacts; and

¹⁰⁵ The decision of the Work Program on loss and damage is a decision that outlines a number of meetings and that commissions reports as they relate to this topic. See Decision 7/CP.17, Work Program on Loss and Damage, UN Doc. FCCC/CP/2011/9/Add.2, 15 March 2012.

¹⁰⁶ Decision 7/CP.17, *supra*, note 15 para. 101.

¹⁰⁷ *Ibid.*, paras. 99 and 100.

¹⁰⁸ *Ibid.*, para. 97.

¹⁰⁹ Decision 5/CP.17, National Adaptation Plans, UN Doc. FCCC/CP/2011/9/Add.1, 15 March 2012.

¹¹⁰ *Ibid.*, paras. 29 and 39.

- conducting comprehensive assessment of development needs and climate vulnerability.

Preparatory work:

- Conducting assessment of medium and long term adaptation needs;
- integrating climate change adaptation into national and sectoral planning;
- participatory consultation and communication and awareness raising.

Implementation strategies:

- Prioritize programs and strengthening institutional capacity to implement
- Reporting, monitoring and review

One of the primary challenges of the adaptation regime is the provision of funding to carry out the activities envisaged by the regime. Article 11 of the UNFCCC establishes a financial mechanism to provide financial resources and technology transfer to assist in the implementation of the convention. The Global Environmental Facility (GEF) has been entrusted with the operation of the financial mechanism of the Convention.¹¹¹ There are three different funding entities within the regime: the GEF funds (see below), the Adaptation Fund operating under the Kyoto Protocol, and the Green Climate Fund. The finance for each of these three entities comes from different components of the regime, though it seems less than ideal to continue adaptation funding in such a fragmented approach. This may well be something that the Adaptation Committee considers early in its program, due to potential savings on administrative costs of an integrated fund and increased efficiency outcomes that could be achieved by avoiding duplication and overlapping adaptation initiatives.

The GEF has three funds for adaptation activities: the GEF Trust Fund providing support for vulnerability and adaptation assessments; The GEF Least Developed Country Fund; and the GEF Special Climate Change Fund. The Adaptation Fund under the Kyoto Protocol is financed by 2% of CDM proceeds and focuses on adaptation measures for those particularly vulnerable to the adverse effects of climate change. The Cancun COP negotiations in 2010 led to the development of the Green Climate Fund. The purpose of the Green Climate Fund is to provide new and additional resources approaching USD 30 billion for the period from 2010 to 2012, with a balanced allocation between adaptation and mitigation and priority for the most vulnerable developing countries such as least developed countries, small island developing states, and Africa.¹¹²

¹¹¹ Art. 11 (1) of the UNFCCC allows for the operation of the financial mechanism to be entrusted to one or more existing international entities, *supra*, note 1.

¹¹² Report of the Conference of the Parties on its sixteenth session, FCCC/CP/2010/7/Add.1, 15 March 2011, para. 95.

5.5 Conclusion

This chapter has explored the foundations of the international climate change regime by analysing the objectives, principles and methods of mitigation and adaptation policies and measures of the regime. Achieving the ultimate objective of the regime will remain challenging, as considerations of economic growth continue to displace environmental objectives and concerns about community vulnerability and functionality. The application of all seven principles discussed in this chapter would assist in meeting this objective and in adjusting the way in which economic considerations are weighed against environmental and social considerations. The precautionary principle, in particular, has great potential to change the way in which economic interests are prioritised over other relevant considerations.

The methods of the mitigation regime are considered advanced by international environmental law standards. The stringent reporting requirements along with the existence of innovative flexibility mechanisms show that serious consideration is being given to the issue of global greenhouse gas mitigation. The same level of innovation needs to be directed towards creating an adaptation regime that is supportive of mitigation measures, while also obtaining prominence of its own accord. Further integration between mitigation and adaptation measures and policies is needed given the reinforcing and supporting character of these measures.

In conclusion, attention should be directed to paragraph 10 of Cancun COP report, which provides a vision for the way in which the ultimate objective can be obtained. It states “that addressing climate change requires a paradigm shift towards building a low-carbon society that offers substantial opportunities and ensures continued high growth and sustainable development, based on innovative technologies and more sustainable production and consumption and lifestyles, while ensuring a just transition of the workforce that creates decent work and quality jobs.”¹¹³

¹¹³ Ibid., para. 10.