ENVIRONMENTAL PROTECTION BY ICAO:
AN ASSESSMENT OF THE LEGAL FRAMEWORK TOWARDS MEASURES TO
REDUCE GREENHOUSE GAS EMISSIONS IN THE INTERNATIONAL CIVIL
AVIATION SECTOR

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Abstract

Global climate change should be a concern of all mankind. If left unmitigated the effects will be catastrophic for continued life on Earth. International efforts through the climate change regime seek to address global climate change. The principle of ‘common but differentiated responsibilities and respective capabilities’ (CBDRRRC) is fundamental to State engagement in this regard. The principle, and its implementation, recognises differences between States in respect of their responsibilities to address climate change as well as their capacities to do so. Providing climate change mitigation measures in the international civil aviation sector proved to be an unanswerable conundrum for the climate change regime due to difficulties in deciding on appropriate emissions allocation. The responsibility for climate change efforts in the international civil aviation sector was transferred from the climate change regime to the International Civil Aviation Organization (ICAO) for resolution. Given the already established regulatory role in international aviation, the decision to do so seems apt. This is, perhaps, an oversimplification of a complex legal environment. ICAO was not founded with environmental considerations as a core concern and there are fundamental clashes between the legal framework in international civil aviation and CBDRRRC, the latter having also undergone a dramatic evolution since the referral to ICAO. ICAO has recently introduced its regulatory response to the call of the climate change regime, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This thesis will illustrate the evolution of the principle of common but differentiated responsibilities to arrive at its contemporary interpretation and discuss the measures delivered by ICAO to determine whether they accord with the principle of ‘common but differentiated responsibilities and respective capabilities’.
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1. Introduction

Human activities, predominantly through the combustion of coal or oil, have increased concentrations of greenhouse gases in the Earth’s atmosphere and are changing its natural atmospheric greenhouse.\(^1\) The consequences for this, if left unmitigated, are potentially disastrous with predictions of extreme weather patterns, rising sea levels and food scarcity to name a few.\(^2\)

In 1988 and 1989 the United Nations General Assembly recognised climate change as a common concern of mankind and it urged governments, intergovernmental organisations, non-governmental organisations, and scientific institutions to collaborate to prepare a convention on climate change.\(^3\) Twenty-nine years on from this determination, and with an established global climate change regime well into its second decade of existence, significant steps towards addressing the impact of international civil aviation on climate change have only just begun. This thesis will evaluate measures through the International Civil Aviation Organisation (ICAO) in light of the principle of “common but differentiated responsibilities and respective capabilities”.

1.1 Background

Human activities impact on climate change through the introduction of greenhouse gases into the atmosphere.\(^5\) Their effects are detected throughout the climate system and are considered, together with other drivers from human activity, as the likely dominant cause of global warming since the mid-20th century.\(^6\) The most notable greenhouse gases are water vapour and carbon dioxide, of which the atmosphere has experienced a 35% increase in carbon dioxide in the industrial era.\(^7\) This increase is known to be from human activities and primarily through the combustion of fossil fuels.

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\(^1\) https://climate.nasa.gov/causes/ (accessed 27 August 2017).
\(^2\) Ibid
\(^4\) Sands and Peel (2012) 277.
\(^7\) Supra n 5.
and deforestation.\textsuperscript{8} At 1992 levels, the aviation industry accounted for 2% of global anthropogenic carbon dioxide emissions and 13% of anthropogenic carbon dioxide emissions in the transport sector with its contribution expected to triple by the year 2050.\textsuperscript{9} Using more recent data, indicating that its greenhouse gas emissions contribution accounts for 2.5% of global greenhouse gas emissions, if the civil aviation sector (both domestic and international) was a country it would be the seventh largest polluter in the world with ICAO predicting a 155% to 300% increase in emissions by 2036 (using 2006 as the base year for comparison).\textsuperscript{10}

Historically, environmental problems were analysed from an ecocentric perspective, concerned with the conservation of nature and individual eco-systems of concern (i.e. the extinction of certain species), as opposed to the global environment comprising of interdependent ecosystems and from the perspective of the human impact on the environment (the anthropogenic perspective).\textsuperscript{11} Historic engagements also traditionally focussed on the environmental problems of developed countries but the realisation that the degradation of the global environment was a common problem of the international community encouraged the participation of developing countries.\textsuperscript{12} The Stockholm Declaration was the first appraisal of the anthropogenic perspective and was an attempt to establish basic cohesion in efforts to address the preservation and enhancement of the human environment.\textsuperscript{13} The Stockholm Conference of 1972, from which the declaration emanates, emphasised the irreversible impact of humans on the environment and the need for protection and enhancement of the environment through collective efforts at all levels, domestically and internationally.\textsuperscript{14} The declaration is a non-binding document consisting of 26 principles, mostly broad environmental policy goals and objectives, which are reaffirmed in the preamble to the Rio Declaration (discussed below).\textsuperscript{15} The Stockholm Declaration inspired an increase in awareness of global environmental concerns and environmental law making, to such extent that the task of the \textit{Earth Summit} (discussed below) was, in part, to

\begin{thebibliography}{15}
\bibitem{8} IPCC, \textit{supra} n 5.
\bibitem{10} Goncalves (2017) 39(2) Contextio Internacional 443 at 443.
\bibitem{11} Halvorssen (2011) 39 Derv. J. Int\&L. & Pol\&y 397 at 399.
\bibitem{12} \textit{Ibid} at 399 \& 400.
\bibitem{13} \texttt{http://legal.un.org/avl/ha/dunche/dunche.html} (accessed on 9 June 2018).
\bibitem{14} Halvorssen (2011) 39 Derv. J. Int\&L. & Pol\&y 397 at 400.
\bibitem{15} \textit{Ibid}.
\end{thebibliography}
restate existing legal expectations but also to adopt a “bold” position in respect of sustainable development.\textsuperscript{16}

In 1992, the international community gathered at the United Nations Conference on Environment and Development (UNCED), also known as The Earth Summit, in Rio De Janeiro, Brazil, with the expectation of creating an “Earth Charter” a declaration of legal rights and obligations concerning the environment and development.\textsuperscript{17} Several legal instruments emerged from the Earth Summit, including the United Nations Framework Convention on Climate Change (UNFCCC).\textsuperscript{18} The Rio Declaration, a non-binding document although adopted by consensus, consists of 27 principles aiming to provide a framework in pursuit of sustainable development.\textsuperscript{19} 20 Principle 7 of the Rio Declaration introduces the concept of “common but differentiated responsibilities” (CBDR):

States shall co-operate 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.

The final text is a compromise between developing countries’ pursuit of an acknowledgment of responsibility by developed countries for global environmental problems versus developed countries’ insistence that such an acknowledgment would be inappropriate without a similar acknowledgment by developing countries.\textsuperscript{21} Principle 7 is a reflection of CBDR that finds its roots in State practice prior UNCED.\textsuperscript{22}

\textsuperscript{16} Supra n 13.
\textsuperscript{17} Ibid.
\textsuperscript{19} UN Doc A/CONF.151/26/Vol.1 (hereinafter Rio Declaration).
\textsuperscript{20} Supra n 18.
\textsuperscript{22} Sands and Peel (2012) 233.
The only other international document that offers a definition and explanation of CBDR is the UNFCCC. Common but differentiated responsibilities and respective capabilities (CBDRC) is acknowledged in the pre-amble and is articulated as a guiding principle of the UNFCCC and related documents. Article 3(1) reads:

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 principle embodies two fundamental elements, first, the common responsibility of States for the protection of the environment and, second, the need to account for differing circumstances relating to State’s contributions to the evolution of climate change and their respective capabilities to intervene. Fundamental disagreement exists regarding the core content of the CBDRC principle as well as the nature of its obligations. It’s implementation, however, is evidenced across the climate change regime, in most international environmental agreements entered into in recent decades, and it is considered the bedrock of the burden sharing arrangements in subsequent environmental treaties.

In the years following the UNFCCC, the need for more stringent emissions mitigation efforts became the focus of climate change efforts. The Kyoto Protocol to the UNFCCC, agreed in 1997, contained binding targets and timetables for the reduction of greenhouse gas emissions by industrialised States during the commitment period of the years 2008 to 2012. Emissions from international transport, however, proved to be a stumbling block for the negotiators of the Protocol, and the regulatory authority

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24 Bodansky, Brunæe, & Rajamani (2017) 127.
25 Sands and Peel, supra n 23; see also 74 Int'l L Ass'n Rep Conf, supra n 23.
27 Ibid at 443.
29 Ibid.
to limit or reduce greenhouse gas emissions from international aviation was referred to the International Civil Aviation Organization (ICAO).³⁰

The referral of emissions regulation to ICAO is not as straightforward as might be imagined. Disputes regarding the core content of CBDRRC, its obligations, and its applicability within the international civil aviation regime reigned. The disputes within international civil aviation hold a more obvious context when it is realised that the international civil aviation regime holds equality between States at its core. Progress within ICAO towards emissions policy measures since referral has been slow but there has been progress in what ICAO refers to as a basket of measures. The basket of measures includes advancements in aircraft technology and standards, operational improvements, sustainable alternative fuels, and market-based measures.³¹

In October 2016, at the 39th meeting of the ICAO Assembly, the basis for the first global market-based measure in international civil aviation was agreed, known as the Carbon Off-Setting and Reduction Scheme in International Aviation (CORSIA).³² The CORSIA contains a preambular acknowledgment of CBDRRC and it was a guiding principle in its design.³³ The purpose of this study is, therefore, not to identify whether or not the principle is applicable to State engagements within ICAO but rather to explore its application in CORSIA. This will entail an appreciation of the legal framework within the climate change regime and the international civil aviation regime and an understanding of the principle of CBDRRC. At the heart of this discussion will the climate change regimes implementation of CBDRRC for comparison with the measures undertaken within the CORSIA.

1.2 Critical Research Questions

The research questions are:

- What is the climate change regime?

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³⁰ Oberthur & Ott (1999) 112.
³² A39-3.
³³ A39- 3 preamble and A38-18 (20) i (22).
• What is the legal framework for regulation in the international civil aviation sector?
• What is CBDRRC?
• How has CBDRRC been implemented in the climate change regime?
• What is CORSIA?
• Have States implemented CBDRRC in CORSIA?
• If so, how has CBDRRC been implemented in CORSIA?
• To what extent has CBDRRC been recognised in CORSIA?

1.3 Research Aims

The aim of this dissertation is to illustrate that ICAO has provided regulatory measures to address climate change that accord with the principle of common but differentiated responsibilities and respective capabilities.

1.4 Chapter Breakdown

The research aims and research questions will be addressed in the following chapters:

1.4.1 Chapter 2: The Climate Change Regime and the ICAO

This chapter will identify the legal framework within which the climate change regime and ICAO function. The legal framework provides context for the development and implementation of CBDRRC within the climate change regime as well as emissions mitigation measures within ICAO.

1.4.2 Chapter 3: Common But Differentiated Responsibilities and Respective Capabilities

This chapter will discuss the origins and development of CBDRRC seen through the lens of its implementation within the climate change regime. The interpretation of CBDRRC seen through this lens will then be used in the assessment of the emissions mitigation measures found in CORSIA.
1.4.3 Chapter 4: ICAO and the Environment

This chapter will identify and provide context for the emissions mitigation measures found in CORSIA with specific emphasis on their acknowledgment of CBDRRC to determine the extent to which CORSIA caters to CBDRRC.

1.4.3 Chapter 5: Concluding Remarks

The final chapter will draw on the conclusions of the preceding chapters to illustrate the hypothesis.

1.5 Limitations in the Scope of the Thesis

This thesis will not study the normative status of CBDRRC, nor will it reflect on the efficacy of measures implemented by ICAO versus the objectives of the climate change regime.

1.6 Conclusion

This study will illustrate the regulatory framework for greenhouse gas emissions limitations or reductions in the climate change regime and the international civil aviation sector, identify the contemporary interpretation CBDRRC through its implementation, and discuss the recognition of CBDRRC in the measures taken by ICAO.
2. The Climate Change Regime and the ICAO

2.1 Synopsis

This chapter contains an overview of the climate change regime, the referral of emissions regulation in international civil aviation to ICAO, and the regulatory mechanisms at ICAO’s disposal. In doing so it will unveil the legal framework within which the global regulation of greenhouse gas emissions, and from international civil aviation, is to occur and provide context for the referral.

2.2 Introduction

The climate change regime is the global platform for engagement on climate change.\textsuperscript{34} Despite its deeply contested nature and legal status, CBDRRC is a fundamental principle of the climate change regime and States are obliged to give effect to it when interpreting their current obligations and in creating new obligations.\textsuperscript{35} This chapter will provide a birds-eye view of the climate change regime and the regulatory environment found within ICAO. In so doing it will form the basis for discussion on the interpretation of CBDRRC and its implementation in CORSIA.

2.3 The Climate Change Regime

The climate change regime is comprised of the UNFCCC, the Kyoto Protocol, the Paris Agreement. The principles embodied in the Rio Declaration are not, for the most part, legally binding.\textsuperscript{36} They are, however, central to the interpretation, implementation and development of CBDRRC within the climate change regime and therefore, climate change efforts within ICAO.\textsuperscript{37} The discussion that follows will provide the regulatory context for the implementation of CBDRRC within the climate change regime and the referral of emissions mitigation efforts in international civil aviation to ICAO.

\textsuperscript{34} Oberthur & Ott (1999) 33.
\textsuperscript{35} Scott & Rajamani (2012) 23 EJIL 469 at 477.
\textsuperscript{37} \textit{Ibid.}
2.3.1 The United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted at the United Nations Headquarters on 9 May 1992. The UNFCCC is subject to ratification, acceptance, approval or accession by States and by regional economic integration organizations and may be acceded to at any time by those that have not signed the Convention. The UNFCCC entered into force on 21 March 1994 and there are 196 State parties to the Convention at present.

The UNFCCC is the accepted basis for international politics on climate change. It reflects a compromise between the pursuit by some States of specific targets and timetables for emissions reductions and the pursuit by others of a skeleton treaty to serve as the basis for future climate change engagements. As the name suggests, the convention provides a framework, establishing procedures and institutions, for engagement on global climate change and obligations that provide the basis for subsequent development. Its objective is to stabilise greenhouse gas concentrations in the atmosphere at levels that will prevent dangerous anthropogenic interference within the climate system and to do so within a time frame that allows eco-systems to adapt naturally to climate change, while also ensuring that food production is not threatened and that economic development proceeds in a sustainable manner. The regulation of greenhouse gas emissions from various sectors fall under the umbrella of the UNFCCC. The transport sector, and therefore international aviation, is one such sector.

The UNFCCC established the Conference of the Parties (COP). It is the supreme body of the Convention charged with reviewing the implementation of the Convention.

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39 UNFCCC art 22.
40 Supra n 38.
41 Ibid.
43 Sands and Peel (2012) 278.
44 Oberthur & Ott (1999) 34.
45 UNFCCC art 2.
46 UNFCCC art 4(1)(c).
47 Ibid.
48 UNFCCC art 7(1).
and related legal instruments adopted by the COP as well as taking decisions to promote the effective implementation of the Convention.49

2.3.2 The Kyoto Protocol

While the UNFCCC was a progressive leap in global efforts to address the impact of anthropogenic emissions on climate change, the consensus was that the commitments of the UNFCCC were not specific enough to achieve the goals of the Convention.50 It was agreed that the commitments of the parties included in Annex I of the UNFCCC would be reviewed at the first session of the COP using the best available scientific information.51 The first meeting of the COP, in Berlin in 1995, found that the commitments of Annex I parties were not adequate.52 The Berlin Mandate was adopted, outlining the process and time frame for the negotiation of a new legal instrument with more concrete obligations and time frames for greenhouse gas emissions reductions by Annex I parties.53 From these negotiations, the Kyoto Protocol to the UNFCCC was adopted in Kyoto, Japan, in December 1997.54 It is subject to ratification, acceptance, approval or accession by parties to the UNFCCC and entered into force on 16 February 2005.55 The United States of America is the only State that has not ratified, approved, accepted, or acceded to the Protocol.56

The Kyoto Protocol was concluded for an indeterminate period of time but had a first commitment period, from 2008 to 2012, for Annex I parties to ensure that their aggregate greenhouse gas emissions do not exceed their assigned limitation amounts.57 In December 2012, the Doha Amendment of the Kyoto Protocol, among other things, provided the second commitment period of States from 1 January 2013 to 31 December 2020.58 The amendment enters into force, for those parties indicating

49 UNFCCC art 7(2).
51 Ibid.
52 Ibid.
53 Ibid.
55 Ibid.
56 Ibid.
57 Kyoto Protocol art 3(1).
58 Supra n 50.
acceptance, on the ninetieth day after receipt of an instrument of acceptance by the Depository from at least three quarters of the parties to the Protocol. The amendment is not yet in force.

The Kyoto Protocol contains differentiated binding targets for State parties and timetables for the reduction of aggregate greenhouse gas emissions by industrialised States. Emissions from international transport proved to be a stumbling block for negotiators of the Protocol with emissions allocation acting as the pivotal issue. Before the Kyoto engagements, the Subsidiary Body for Scientific and Technological Advice (SBSTA), a standing body established by the UNFCCC responsible for providing information and advice on scientific and technological matters relating to the UNFCCC, identified eight options to resolve the issue of allocation of emissions from marine bunker and aviation fuel. This limitation of the scope of emissions allocations considerations did not result in agreement between States in negotiation of the Kyoto Protocol. This was mainly due to the inequitable results from proposed allocations (i.e. to countries that are international transport hubs) and the conflict between the proposed allocations and international treaty arrangements already in place. As a result of the lack of agreement, these emissions were included in national inventories, on the basis of fuel sold, for reporting purposes only and were not subject to emissions targets agreed in the Kyoto Protocol. Negotiators agreed to transfer the issue to ICAO and the IMO, which was done through article 2(2), which reads:

The parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels through the International Civil Aviation Organisation and the International Maritime Organisation, respectively.

### 2.3.3 The Paris Agreement

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59 Kyoto Protocol art 20(4).
60 Supra n 54.
62 Ibid at 112.
63 Ibid at 111.
64 Supra n 62.
65 Ibid.
The Paris Agreement is the successor to the Kyoto Protocol post 2020. On 12 December 2015, at the twenty-first session of the Conference of the Parties to the UNFCCC, the Paris Agreement was adopted. It entered into force on 4 November 2016 and there are 178 parties to the agreement at present (of 195 signatories).

The Paris Agreement does not include reference to international civil aviation. Instead, the COP invited ICAO to continue with progress reports to the SBSTA and ICAO has continued to do so in the spirit of co-operation. ICAO considers the lack of reference a vote of confidence in its previous and continued efforts to mitigate the impact of international aviation on climate change.

2.4 The International Civil Aviation “Regime”

The Convention on International Civil Aviation (the “Chicago Convention”), signed in Chicago on 7 December 1944, is the constitutive document of ICAO. It was born from the technological advancements in international passenger travel and the identification of the many political and technical stumbling blocks of the time that required addressing for the international civil aviation industry to further develop. The Chicago Convention envisages bodies within ICAO, namely the Assembly, Council, Air Navigation Commission “and such other bodies as may be necessary” for the organisation to exercise its regulatory mandate. The ICAO structures relevant to the present discussion are that of the Assembly and Council.

2.4.1 The Assembly

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68 Supra n 54.
69 Ibid.
72 Supra n 70.
73 Chicago Convention art 43.
74 https://www.icao.int/about-icao/History/Pages/default.aspx (accessed 18 June 2017).
75 Supra n 73.
The Assembly is the plenary decision-making body of ICAO. It consists of all 191 contracting states to the Chicago Convention. Each contracting state holds a single vote that carries equal voting rights. The Assembly meets at least once every three years and decisions are taken by majority vote. The presence of a majority of member States is required to constitute a quorum. The decisions of the Assembly, known as Assembly Resolutions, provide policy guidelines for the work of the other ICAO bodies. Most of the substantive decisions taken by the Assembly are in the form of a resolution. Although the binding nature of these resolutions is controversial the prevailing view is that they can bind the ICAO organs but generally not member States. Nonetheless, their subsequent implementation by member States is not ordinarily controversial as they are adopted by consensus after thorough preparation. The main policies of ICAO on environmental protection are defined by the Assembly.

2.4.2 The Council

The Council is a permanent body of ICAO and is responsible to the Assembly. It is composed of thirty-six contracting states elected by the Assembly and is responsible for, among other things, the day to day governance of ICAO. The Council is vested with extensive powers and duties which include a legislative function (or quasi-legislative function) for the adoption of annexes to the Chicago Convention. The annexes lay down international standards and recommended practices (SARPs) which automatically bind member states unless ‘impracticable’ to comply. While

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76 Shawcross and Beaumont (1977) 103.
77 Chicago Convention art 48(b).
79 Shawcross and Beaumont (1977) 102.
80 Chicago Convention art 48(b).
81 Chicago Convention art 48(a).
82 Chicago Convention art 48(c).
84 Ibid at 31.
85 Ibid at 32.
86 Ibid.
87 http://www.icao.int/ENVIRONMENTAL-PROTECTION/Pages/CAEP.aspx (accessed 22 April 2017).
88 Chicago Convention art 50(a).
89 Chicago Convention art 50(a) and 54.
90 Liu (2011) 4 CCLR 417 at 423.
91 Supra n 76.
92 Chicago Convention art 37 and 38.
Standards are binding, they do not hold the same binding authority as the convention, quite simply because they are not subject to the ratification process. While States hold an obligation to comply with “Standards” the alternate obligation is to notify ICAO when it is impracticable to comply with the new Standard in all respects and to set out the differences between that State’s abilities and that established by the Standard. “Recommended Practices” are not legally binding on States and carry no legal effect nor obligation on States.

2.5 Conclusion

The regulation of greenhouse gas emissions from international transport, and therefore international civil aviation, falls within the ambit of the UNFCCC. The Kyoto Protocol transferred this authority to ICAO and the parties to the Paris Agreement have chosen to abide by this referral. Within the confines of the Chicago Convention, the ICAO exercises regulatory authority within international civil aviation through the Assembly, by way of Assembly Resolutions, and the Council, through the Annexes. This regulatory authority is subject to the agreement of member States and cannot be imposed unilaterally.

94 Ibid.
95 Ibid at 46.
3. **Common But Differentiated Responsibilities and Respective Capabilities**

3.1 **Synopsis**

This chapter will discuss the principle of common but differentiated responsibilities and respective capabilities, both its basis as a legal principle as well as its implementation and development within the climate change regime. The aim is to establish a base for comparison with the application of CBDRRC used within the CORSIA.

3.2 **Introduction**

Article 3 of the UNFCCC provides guiding principles for State parties to achieve the objects of the Convention. These guiding principles include inter and intra generational equity, common but differentiated responsibilities and respective capabilities, the specific needs and special circumstances of developing countries, the precautionary principle, sustainable development, and the duty to co-operate. The principle of common but differentiated responsibilities and respective capabilities is at the core of the UNFCCC and climate change negotiations and has proved to be the most contentious of the guiding principles. The meaning of CBDRRC and the obligations of the parties flowing therefrom have long been the subject of dispute. Its initial formulation and implementation versus its most recent implementation under the Paris Agreement have seen a somewhat slow, but nonetheless drastic, evolution in the understanding of its meaning and interpretation, and therefore its implementation.

The CBDRRC era during which greenhouse gas emissions regulation in international civil aviation was referred to ICAO by the Kyoto Protocol versus the present day CBDRRC era of the Paris Agreement are worlds apart. Appreciating the nature of present day CBDRRC, and the obligations of States in its implementation, requires and understanding of its origins and development. This chapter will provide the platform for understanding the nature CBDRRC and its implementation within the climate change regime for comparison with parties' engagements within ICAO.

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96 UNFCCC art 3(1) to 3(5).
3.3 CBDRRC – The Principle and its Development

Differentiation has been a central theme in the development of the climate change regime.\(^98\) CBDRRC is a departure from traditional treaty engagements that provide common obligations for all parties.\(^99\) There is an important distinction between CBDR, articulated in the Rio Declaration, and CBDRRC found in the UNFCCC. CBDR bases differentiation between States only on their differing contributions to global environmental degradation while CBDRRC includes consideration of States’ respective capabilities.\(^100\) Setting the basis for differentiation in States’ differing contributions would result in a regime that would change relatively slowly while using capabilities as the basis for differentiation allows for a more rapid evolution as States develop.\(^101\) The importance of the distinction will become more apparent as the discussion progresses through the development of CBDRRC.

CBDRRC finds its premise in, first, establishing that protection of the environment is a common responsibility of States but, then, considers the respective State contributions to environmental degradation and their capacities in determining levels of responsibility to act.\(^102\) The debates surrounding its core content are found in the expression of the reasons for the need to differentiate, which are generally found along divisions between developed and developing countries.\(^103\) \(^104\) One view being that differentiation is necessary due to differing levels of economic development (the capabilities argument, generally favoured by developed countries) and the other being that it is due to differing contributions to global environmental degradation (the responsibilities argument, generally favoured by developing countries).\(^105\) \(^106\) Consensus is found, at least, in relation to the common responsibility of all States that requires, according to the UNFCCC, that they co-operate in developing the climate change regime and work towards achieving the objective of the UNFCCC.\(^107\)

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\(^99\) Ibid at 27.
\(^100\) Ibid at 127.
\(^101\) Ibid at 128.
\(^103\) Ibid.
\(^104\) Bodansky, Brunæe, & Rajamani (2017) 28.
\(^106\) Bodansky, Brunæe, & Rajamani (2017) 27.
Consensus is also found in the need to differentiate between States in respect of their obligations but little common ground exists on the criteria for differentiation as well as the criteria for graduation from differentiation.\textsuperscript{108}

While these fundamental differences exist, CBDRRC has been consistently implemented within the climate change regime and it is this implementation that will be used for assessment purposes. Although CBDRRC does not specify how differentiation is to take place, CBDRRC norms can be categorised into central obligations, implementation, and assistance.\textsuperscript{109} \textsuperscript{110} The central obligations concern differentiation in respect of emissions reduction targets and timetables and reporting requirements.\textsuperscript{111} Differentiated implementation is seen through delayed compliance schedules, permission to adopt subsequent base years, delayed reporting schedules, and softer approaches to non-compliance, and assistance is provided to developing countries through financial and technological means.\textsuperscript{112} It is according to this categorisation that the implementation of CBDRRC will be examined.

### 3.3.1 Differentiation: The UNFCCC

The Convention divides countries into three groups, namely, Annex I, Annex II and non-Annex I parties. The Annex I parties are industrialised countries that were OECD (Organisation for Economic Co-Operation and Development) members in 1992 and countries with economies in transition (to a market economy).\textsuperscript{113} The Annex II parties are only the OECD members of Annex I.\textsuperscript{114} The non-Annex I parties are those not listed in Annex I and are mainly developing countries, some of which are recognised as being especially vulnerable to the effects of climate change, including countries with low lying coastal areas, with areas prone to natural disasters, with areas liable to drought and desertification, with economies that are highly dependent on income generated from the production, processing and/or consumption of fossil fuels, and

\textsuperscript{109} Bodansky, Brun\^ae, & Rajamani (2017) at 27.
\textsuperscript{110} Rajamani (2013) 14 Theoretical Inq. L. 151 at 154.
\textsuperscript{111} \textit{ibid.}
\textsuperscript{112} \textit{ibid.}
\textsuperscript{113} \url{https://unfccc.int/parties-observers} (accessed 25 June 2018).
\textsuperscript{114} \textit{ibid.}
small island countries.\textsuperscript{115} \textsuperscript{116} The Convention also recognises a separate category of developing countries, the least developed countries (LDCs) for whom the parties were to take full account of their needs regarding funding and technology transfer.\textsuperscript{117} \textsuperscript{118}

All parties to the Convention, taking into account their CBDRRCs and domestic development priorities are required to develop State inventories, formulate climate change programmes, promote and co-operate in the development and transfer of technology, promote sustainable management, co-operate in preparation for adaptation to the impacts of climate change, take climate change considerations into account (to the extent feasible), promote and co-operate in research and development and in the exchange of information, promote climate change education and awareness, communicate with the Conference of the Parties as required.\textsuperscript{119} All parties are also required to communicate to the Conference of the Parties a national inventory of anthropogenic emissions, to the extent that their capacities permit, a general description of steps taken or envisaged in implementing the Convention, and any other relevant information.\textsuperscript{120} These general commitments do not, for the most part, compel a particular action by the parties.\textsuperscript{121} In addition, they are subject to several qualifications in their implementation to make them acceptable to developing countries (i.e taking into account the parties' CBDRRCs, domestic development priorities, and capacities).\textsuperscript{122} The general commitments also recognise that "economic and social development and poverty eradication" are "overriding priorities" for developing countries, therefore the extent of developing country participation in implementing their Convention commitments is dependent on the effective provision of financial resources and the transfer of technology by developed countries.\textsuperscript{123}

The central obligations, in addition to the general commitments of all of the parties, are held by the Annex I parties who are required to adopt national policies and

\textsuperscript{115} UNFCCC art 4(8).
\textsuperscript{116} Supra n 113.
\textsuperscript{117} UNFCCC art 4(9).
\textsuperscript{118} Bodansky, Brunåe, & Rajamani (2017) 121.
\textsuperscript{119} UNFCCC art 4(1)(a) Í (j).
\textsuperscript{120} UNFCCC art 12(1).
\textsuperscript{121} Bodansky, Brunåe, & Rajamani (2017) 130.
\textsuperscript{122} Ibid at 131.
\textsuperscript{123} UNFCCC art 4(7).
measures in mitigation of climate change with the aim of returning their greenhouse
gas emissions levels to 1990 levels.\textsuperscript{124} Accompanying this obligation are more detailed
reporting obligations to provide information on policies and measures adopted and
specific estimates of the envisaged effects of their mitigation measures.\textsuperscript{125} The
Convention also provides differentiation between the Annex I parties by affording ña
certain degree of flexibilityò by the Conference of the Parties to those undergoing
economic transition in the implementation of their commitments.\textsuperscript{126}

The financial resources necessary for developing countries to undertake emissions
reduction activities and adapt to the effects of climate change are provided by only
Annex II parties.\textsuperscript{127} Funding by Annex II parties is generally channelled through the
Conventionñs financial mechanism.\textsuperscript{128} The financial mechanism was created for the
purposes of providing financial resources ñon a grant or concessional basisñand for
technology transfer.\textsuperscript{129} The Convention provides the core financial provisions of States
under the climate change regime.\textsuperscript{130} These provisions have been supplemented by
decisions of the COP that have established new climate funds, specified project
eligibility requirements, and adopted political goals regarding the magnitude of
funding.\textsuperscript{131} The existence of the financial mechanism is, however, not a barrier to the
provision of financial resources by developed countries to developing countries
through other means in order to implement the Convention.\textsuperscript{132}

These financial resources are provided to developing countries in order ño meet the
agreed full costsù associated with the Conventions inventory and reporting
requirements, ño meet the agreed full incremental costsù of implementing the general
commitments of the Convention, and assist those that are ñparticular vulnerableù to
the adverse effects of climate change in meeting the costs of adaptation to address
those effects.\textsuperscript{133} The primary focus of the funding provisions, however, is on reporting

\textsuperscript{124} UNFCCC art 4(2)(a) and (b).
\textsuperscript{125} UNFCCC art 12(2).
\textsuperscript{126} UNFCCC art 4(6).
\textsuperscript{127} Supra n 113.
\textsuperscript{128} Ibid.
\textsuperscript{129} UNFCCC art 11(1).
\textsuperscript{130} Bodansky, Brunée, & Rajamani (2017) 137.
\textsuperscript{131} Ibid at 138.
\textsuperscript{132} UNFCCC art 11(5).
\textsuperscript{133} UNFCCC art 4(3).
and mitigation, with Annex II parties holding weaker obligations in respect of adaptation assistance.\textsuperscript{134} Annex II parties are also required to "take all practicable steps to promote, facilitate and finance the transfer of environmentally sound technologies to all other parties."\textsuperscript{135}

Although all parties to the Convention hold obligations, the limited commitments of non-Annex I parties are subject to their capacities to do so or are contingent upon their receipt of resources and funding from Annex II parties. The central, assistance and implementation obligations of the Convention record distinct differentiation between Annex I and non-Annex I parties, with only Annex I parties holding obligations. The special circumstances of certain States in their vulnerability to the effects of climate change is a matter of primary concern in climate change engagements and it is inextricably linked to CBDRRC.\textsuperscript{136} In the UNFCCC least developed countries (LDCs) are afforded special consideration due to their limited capacity to respond and adapt to climate change and its effects.\textsuperscript{137} Their situation is to be accounted for in parties actions relating to funding and transfer of technology.\textsuperscript{138}

### 3.3.2 Differentiation: The Kyoto Protocol

At the first meeting of the COP in 1995 in Berlin it was agreed that more stringent measures were necessary to meet the objective of the Convention.\textsuperscript{139} To this end, the Berlin Mandate was adopted.\textsuperscript{140} The Berlin Mandate, \textit{inter alia}, sought to strengthen the commitments of Annex I parties through a protocol or new legal instrument with the aim of adopting these commitments at the third session of the COP in 1997 (when the Kyoto Protocol was adopted).\textsuperscript{141} Specific emphasis was placed on not placing any further commitments on developing countries and the leadership role held by developing countries in combating climate change and its adverse effects.\textsuperscript{142,143}

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\textsuperscript{134} Bodansky, Brunäe, & Rajamani (2017) 138 - 139.
\textsuperscript{135} UNFCCC art 4(5).
\textsuperscript{137} Supra n 113.
\textsuperscript{138} UNFCCC art 4(9).
\textsuperscript{140} Ibid.
\textsuperscript{141} U.N. Doc. FCCC/CP/1995/7/Add.1, Decision 1/CP.1, preamble read with section III, para. 6.
\textsuperscript{142} Ibid, section II, para. 2(b)
\textsuperscript{143} Supra n 139.
Naturally, considering the emphasis on Annex I commitments, the Kyoto engagements held a narrower focus than those associated with the Convention or, as will become evident, even the Paris Agreement.\textsuperscript{144} Although there is limited reference to CBDRRC in the Kyoto Protocol, the stark differentiation associated with its commitments is generally attributed to CBDRRC and, particularly, developed country leadership.\textsuperscript{145} It focused only on Annex I emissions.\textsuperscript{146} While all parties are required to maintain their general commitments as per the Convention \textaelgaking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances\textsuperscript{147}, only Annex I parties are required to take greenhouse gas mitigation measures during designated commitment periods.\textsuperscript{148} During the first commitment period, Annex I States were required to reduce their aggregate emissions by 5\% below 1990 levels and now, as proposed in the second commitment period, by at least 18\% below 1990 levels.\textsuperscript{149} They are also required to implement a national system for the estimation of anthropogenic emissions of all emissions not controlled by the Montreal Protocol.\textsuperscript{150}

Mitigation and reduction targets are to be met primarily through national measures but as an additional motivation the Kyoto Protocol created the \textaelgcarbon market\textaelg by introducing market based measures that encourage the pursuit of emissions limitations or reductions.\textsuperscript{151} The carbon market operates like a commodities exchange, where greenhouse gas pollution allowances (certified emissions reduction (CER) credits) are bought and sold.\textsuperscript{152} States pursuing their emissions reduction or limitation commitments earn CER credits for engagement in the carbon market.\textsuperscript{153} These credits can be bought, in circumstances where further pollution allowances are necessary, or sold, when surplus credits are held.\textsuperscript{154} Market based measures financially incentivise activities that meet or exceed emissions reduction targets, and disincentivise those

\textsuperscript{144} Bodansky, BrunâŠe, & Rajamani (2017) 160.
\textsuperscript{145} Ibid at 166.
\textsuperscript{146} Supra n 144.
\textsuperscript{147} Kyoto Protocol art 10.
\textsuperscript{148} Kyoto Protocol art 3 and Doha Amendment para C.
\textsuperscript{149} Kyoto Protocol art 3(1) and Doha Amendment para C.
\textsuperscript{150} Kyoto Protocol art 5(1).
\textsuperscript{151} http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php (accessed 9 July 2017).
\textsuperscript{152} Halvorssen (2005) 16 Colo. J. Int'l Env'tl. L. & Pol'y 353 at 363.
\textsuperscript{153} Supra n 151.
\textsuperscript{154} Supra n 152.
that do not, with the aim of guiding the behaviour towards lowering emissions.\textsuperscript{155} This engagement is pursued through the Clean Development Mechanism (CDM), by investing in emissions reduction or removal projects in developing countries, or through Joint Implementation (JI), by investing in emissions reduction or removal projects in other developed countries.\textsuperscript{156,157}

The purpose of the CDM is to assist non-Annex I parties to achieve sustainable development and contribute towards the overall objective of the Convention as well as assist Annex I parties to achieve compliance with their emissions limitation and reduction commitments.\textsuperscript{158} This is to be achieved by non-Annex I parties benefitting from environmentally sound projects within their countries and the use of the CER credits accruing from these projects by Annex I parties towards compliance with their emissions limitation and reduction commitments.\textsuperscript{159} A share of the proceeds from these project activities is also used to assist developing countries that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation.\textsuperscript{160} The benefits accruing to developing countries include climate change mitigating technology, new investments, and assistance with capacity-building.\textsuperscript{161}

The financial obligations of the Annex II parties as a source of funding to the financial mechanism of the Convention remain.\textsuperscript{162} The financial obligations are, however, specifically extended to provide additional resources to assist developing countries in the development, updating, and publication of national inventories of greenhouse gases.\textsuperscript{163} Emphasis is also placed on the need for financial resources and technology transfer to developing countries to meet their general commitments in terms of the Convention.\textsuperscript{164}

\textsuperscript{155} ICAO (2013) Secretariat Overview i Market Based Measures.
\textsuperscript{156} http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php (accessed 15 August 2017).
\textsuperscript{158} Kyoto Protocol art 12(2).
\textsuperscript{159} Kyoto Protocol art 12(3).
\textsuperscript{160} Kyoto Protocol art 12(8).
\textsuperscript{162} Kyoto Protocol art 11(2).
\textsuperscript{163} Kyoto Protocol art 11(2)(a)
\textsuperscript{164} Kyoto Protocol art 11(2)(b).
The reporting requirements of the Kyoto Protocol entail stringent annual reports submitted by Annex I parties to the secretariat to ensure compliance with their respective emissions obligations.\(^{165}\) These reports are subject to expert review to assess the implementation of their respective commitments and to identify concerns in the fulfilment of these commitments.\(^{166}\) It was further agreed that the first session of the Conference of the Parties serving as a meeting of the Parties to the Kyoto Protocol would approve measures to determine and address non-compliance issues relating to the Protocol.\(^{167}\) The consequences of non-compliance include a penalty of 1.3 times the amount of excess emissions being deducted from the parties initial allocation and suspension from eligibility to participate in the carbon market.\(^{168}\)

### 3.3.3 Shifting Sands: The Annex I / non-Annex I Dichotomy

The differentiation techniques associated with the Convention and the Kyoto Protocol proved contentious, more so at Kyoto in relation to the central obligations.\(^{169}\) Developed countries argue that the CBDRRRC principle entails all countries being responsible for global environmental problems, just some more than others.\(^{170}\) Recognising that all countries are responsible for climate change but not requiring emissions mitigation efforts by developing countries creates a double standard.\(^{171}\)

During the Kyoto negotiations, developing countries refused to agree to emissions limitations until those responsible for the problem, developed countries, had substantially reduced theirs.\(^{172}\) Developing countries even fervently opposed any language that would call on voluntary emissions limitations by them.\(^{173}\) The United States opposition was, however, equally ardent. In 1997, the United States Senate adopted the Byrd-Hagel Resolution that entailed the United States not being a signatory to any protocol or other agreement that did not have specific scheduled commitments to limit or reduce greenhouse gas emissions for developing countries.

\(^{165}\) Kyoto Protocol art 7(1) read with 7(3).

\(^{166}\) Kyoto Protocol art 8(1) \(\ddagger\) (3).

\(^{167}\) Kyoto Protocol art 18.

\(^{168}\) U.N. Doc. FCCC/KP/CMP/2005/3/Add.3, Decision 27/CMP.1, section XV, para. 5(a) \(\ddagger\) (c).


\(^{171}\) ibid at 32.

\(^{172}\) ibid at 33 \(\ddagger\) 34.

\(^{173}\) ibid at 34. See also Bodansky, Brunøe, & Rajamani (2017) at 166.
countries. One of the major arguments in favour of such action was the future development of affluent developing countries to the extent that they become unrestricted, significant greenhouse gas emitters. According to Harris, the Byrd-Hagel resolution was not to be seen as a rejection of CBDRRC but rather an interpretation that included common responsibility of developing countries and a call for their participation to the extent of their industrialisation.

From a contemporary perspective, the annex-based interpretation of CBDRRC reflects an imbalance between competing interests, common responsibility versus differentiated responsibility. Lee describes CBDRRC through the use of a pendulum, with common responsibility at one end and differentiated responsibility at the other. Because of the binary, annex-based methodology used in distinguishing between countries, responsibility is applied at the extreme conclusion of differentiated responsibility with some parties having responsibilities and others having none. The pendulum sits to the one side and does not account for States' common responsibilities. If common responsibility was applied at its extreme conclusion, it would require the allocation of equal obligations to all parties. While the fairness concerns of the extreme conclusion of common responsibility are clear, the result associated with the binary differentiation in responsibility is the subsequent emergence of sizeable, developing economies that are among the largest global greenhouse gas polluters but remain without emissions reduction obligations. Review of China's greenhouse gas emissions alone, using 2012 emissions statistics, reveal that its total aggregate greenhouse gas emissions have grown almost three-fold since 1994 and is the equivalent of 67.7% of the aggregate greenhouse gas emissions of all Annex I parties combined. In practical terms, the nett result heads toward a zero sum with

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175 Ibid.
176 Ibid at 38.
177 Ibid at 42.
179 Ibid.
180 Ibid.
181 Ibid.
182 Ibid.
183 Ibid.
184 Ibid at 30.
the obligatory emissions reductions of developed countries offset by the unregulated emissions of developing countries. The conclusion is that effective implementation of CBDRRC requires a balanced interpretation, accounting for differentiated responsibilities but recognising that it is in the best interests of all States to address a global problem, to which they have all contributed, with a global solution.

### 3.3.4 Post-Kyoto and the COP

Post-Kyoto climate change engagements through the COP have seen a shift in the interpretation and understanding of CBDRRC, moving away from the binary interpretation towards a more inclusive approach. In the Bali Action Plan, adopted in 2007, parties decided to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at its fifteenth session. It called on both developed and developing country parties to consider nationally appropriate mitigation actions (NAMAs). The differentiation between the parties is to be found in developed countries being required to implement measurable, reportable and verifiable mitigation commitments while developing countries were to frame their mitigation actions within the context of sustainable development. The Bali Action Plan therefore erodes the previous stark differentiation and has been viewed as a means to closing the central obligations gap.

The fifteenth COP, the deadline for the Bali Action Plan, attracted immense attention in Copenhagen in 2009 but parties could not arrive at an agreed outcome. A subset of the parties produced an agreement, titled The Copenhagen

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186 Ibid at 32.
188 Bali Action Plan art 1.
189 Bali Action Plan art 1(b)(i) į (ii).
190 Bali Action Plan art 1(b)(ii) į (ii).
192 Rajamani (2013) 14 Theoretical Inq. L. 151 at 156 į 159.
193 Ibid at 159.
Accord\textsuperscript{194}, that facilitates voluntary emissions reduction pledges and permits self-selection of mitigation targets and actions, namely NAMAs.\textsuperscript{195} Developed countries committed to emissions reduction targets while developing countries committed to undertake mitigation actions and the participation of LDCs and SIDS was contingent upon their receipt of funding.\textsuperscript{196,197} The significance of developing countries making voluntary pledges suggests a shift in the interpretation of CBDRRC, even by developing countries.\textsuperscript{198} Rajamani, however, criticises the self-selection of mitigation efforts by all parties as having fundamentally changed the differentiation regime, providing differentiation for all instead of differentiation in favour of developing countries and increasingly bring into question the relevance of differentiation.\textsuperscript{199}

The Copenhagen Accord went further than including developing countries in emissions mitigation efforts, the associated measuring, reporting, and verifying (MRV) requirements were also the subject of CBDRRC themed debate.\textsuperscript{200} It is a more nuanced argument in respect of the need for differentiation, by comparison with the central and assistance obligations, but it is intimately tied to accountability within the climate change regime.\textsuperscript{201} Developed countries, seeking independent verification of developing country mitigation efforts, sought international MRV while developing countries sought domestic MRV that would be shared with the conference of the parties.\textsuperscript{202} For developing countries, agreement to be included in NAMAs is already a considerable concession.\textsuperscript{203} To take this a step further and provide formal MRV requirements would represent a further step toward developing country responsibility to act.\textsuperscript{204} Supporters of the international MRV argued that it would merely ensure that emissions mitigation and reductions are verifiable.\textsuperscript{205}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{194} U.N. Doc. FCCC/CP/2009/11/Add.1 at 5 - 9 (hereinafter the Copenhagen Accord).
\item \textsuperscript{196} Bushey et al (2010) 6 Publicist 1 at 5.
\item \textsuperscript{197} Copenhagen Accord Articles 4 - 5.
\item \textsuperscript{199} Rajamani (2013) 14 Theoretical Inq. L. 151 at 160.
\item \textsuperscript{200} Bushey et al (2010) 6 Publicist 1 at 6.
\item \textsuperscript{201} \textit{Ibid.}
\item \textsuperscript{202} \textit{Ibid.}
\item \textsuperscript{203} \textit{Ibid.}
\item \textsuperscript{204} \textit{Ibid.}
\item \textsuperscript{205} \textit{Ibid.}
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The solution was found in a compromise entailing a two-tiered MRV. The first tier is an international MRV for NAMAs supported by international finance and the second tier is a domestic MRV for domestically funded NAMAs. The domestic MRV, however, includes international consultations and analysis. The nett result for developing countries under the Accord is that they will be obliged to account in terms of the international MRV where their climate change efforts are supported by international finance. There is then differentiation, even among developing countries, as those that make use of international finance in their mitigation actions will be subject to higher levels of scrutiny than those that are domestically funded.

The compromise provides an opt out mechanism from the regimes emissions accounting system for developing countries and ensures that there can be no direct comparison between the mitigation and reduction efforts of developed and developing countries. This then reinforces the developing world’s argument that the parties’ responsibility to act is fundamentally different. Given the intimate link between accounting and the central obligations, an accounting system that enables direct comparison between developed and developing parties’ mitigation and reduction actions is a step toward blurred lines of differentiation and could result in quantified central obligations for developing countries. The Copenhagen Accord illustrates an important step in shaping CBDRRC, although developing countries are able to avoid the international MRV, internationally funded mitigation projects will be accounted for in the international MRV and the domestic MRV still requires international consultation and analysis.

The Copenhagen Accord also represented a significant shift in assistive climate finance for developing countries by replacing adhoc commitments of finance with a

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206 Ibid.
208 Copenhagen Accord, 5.
209 Supra n 200.
210 Supra n 207.
211 Ibid.
212 Ibid.
213 Ibid.
214 Ibid.
215 Copenhagen Accord 5.
216 Supra n 207.
centralised goal that represents a concrete, quantified commitment to pay on the part of developed countries.\textsuperscript{217,218} In so doing, developed countries demonstrate their leadership role in taking responsibility to act by providing funding goals for new and additional resources to be provided to developing countries (relating to mitigation, adaptation, capacity building, technology development and transfer)\textsuperscript{219} while adaptation funding was prioritised for the most vulnerable developing countries i.e LDCs, SIDS and Africa.\textsuperscript{220,221} Developed countries committed, collectively, to a goal of mobilising USD 30 billion for the period 2010 to 2012 and USD 100 billion by 2020.\textsuperscript{222} To this end, funding is to be received from various public, private and international sources that would flow through the Copenhagen Green Climate Fund, an operating entity of the financial mechanism established by the Accord.\textsuperscript{223} Although the Copenhagen Accord is not considered to have legal authority in the UNFCCC processes, it is an influential document with 141\textsuperscript{224} parties having expressed their intention to be listed as agreeing to the Accord.\textsuperscript{225}

At the sixteenth Conference of the Parties in 2010, the Cancun Agreements were adopted.\textsuperscript{226} The Cancun Agreements are, in essence, the formal adoption of the Copenhagen negotiation under the Convention’s processes.\textsuperscript{227} The Cancun Agreement also established the Technology Mechanism to further facilitate the enhancement of climate technology development and transfer to developing countries.\textsuperscript{228} A brief history in this regard is necessary. At the seventh session of the Conference of the Parties in 2001, the Parties reached agreement on a technology transfer framework.\textsuperscript{229} The Expert Group on Technology Transfer (EGTT) was established to enhance the implementation of Annex II party obligations in promoting,
facilitating and financing, and transferring technology and know-how between the parties, and particularly to developing country parties.\textsuperscript{230} The EGTT was funded by the financial mechanism of the Convention\textsuperscript{231} and focused on the implementation of the technology transfer framework under key themes, namely, technology needs and needs assessments, technology information, enabling environments, capacity building (particularly in developing countries) and mechanisms for technology transfer.\textsuperscript{232} The Cancun Agreement terminated the mandate of the EGTT and established the Technology Mechanism.\textsuperscript{233} The Technology Mechanism’s policy body is the Technology Executive Committee (TEC) and its implementation body is the Climate Technology Centre and Network (CTCN).\textsuperscript{234} At the request of a developing country party, the CTCN provides technical advice and support and facilitates the deployment of technology.\textsuperscript{235} The functions of the TEC and CTCN support developing country efforts to address policy and implementation aspects of climate technology development and transfer.\textsuperscript{236}

In 2011, the COP launched the Durban Platform for Enhanced Action.\textsuperscript{237} After noting the significant contrast between mitigation pledges by parties and mitigation measures necessary to meet the goals of the UNFCCC, the Durban Platform aimed to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties\textsuperscript{238,239} What was discernible from the Durban Platform was the likely fundamental departure from the interpretation of differentiation in the future regime.\textsuperscript{240} Developed countries were insistent that reference to CBDRRC ought to be interpreted in light of “contemporary economic realities” and that the future regime must be applicable to all.\textsuperscript{241} Developing countries argued that this would be tantamount to an amendment of the Convention.\textsuperscript{242} Resolution to this impasse was

\begin{thebibliography}{99}
\bibitem{230} Decision 4/CP.7, 2 read with Article 4(5) of the Convention.
\bibitem{231} Decision 4/CP.7, 3.
\bibitem{233} Cancun Agreement art 117 read with 124.
\bibitem{234} http://unfccc.int/ttclear/support/technology-mechanism.html (accessed 5 July 2018).
\bibitem{235} Ibid.
\bibitem{236} Ibid.
\bibitem{237} Ibid. S
\bibitem{238} Ibid. See also Rajamani (2015-2016) 109 AJIL Unbound 142 at 144.
\bibitem{239} Ibid.
\bibitem{240} Rajamani (2013) 14 Theoretical Inq. L. 151 at 164.
\bibitem{241} Ibid.
\bibitem{242} Ibid.
\end{thebibliography}
found in drafting the text with reference to the Convention, thereby engaging its principles, but the absence of reference to equity and CBDRRC appeared to indicate a shift in the differentiation paradigm post 2020. Nonetheless, at the 2012 meeting of the Conference of the Parties in Doha, where a timetable for the adoption of a universal agreement by 2015 was agreed, particular emphasis was placed on CBDRRC in the shared vision for the Paris Agreement.

### 3.3.5 Paris Agreement

The Paris Agreement aims to keep the increase in global average temperatures to well below two degrees Celsius above pre-industrial levels. It is guided by, and places emphasis on the implementation of, CBDRRC to reflect equity and common but differentiated responsibilities and respective capabilities in the light of national circumstances while pursuing the objective of the Convention. The additional qualification of in light of national circumstances is continued throughout. It represents the introduction of a dynamic element to CBDRRC i.e as national circumstances change, so too will the common but differentiated responsibilities.

The preamble provides specific recognition of the specific needs and circumstances of developing countries, especially the most vulnerable and LDCs in relation to funding and technology transfer.

Emphasising equity in relation to CBDRRC has a natural limiting effect on its interpretation, away from that seen in the Kyoto Protocol. Intergenerational equity entails an interpretation of CBDRRC that requires preservation of the planet in a habitable state between all generations. Although developed countries should be burdened with greater commitments, developing countries should commit to efforts

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245 Paris Agreement art 2(1)(a).
246 Paris Agreement art 2(2).
247 Paris Agreement preamble.
248 Paris Agreement preamble and art 2(2), 4(3) and 4(19).
249 Rajamani (2015-2016) 109 AJIL Unbound 142 at 144.
252 Ibid at 42.
that will at least not offset progress made by developed countries.\textsuperscript{253} This is reinforced by the precautionary principle.\textsuperscript{254} It intersects with intergenerational equity by requiring the prevention of irreversible damage to the environment, thereby preserving it for future generations.\textsuperscript{255} The same is to be said for an interpretation in light of sustainable development, although poor developing countries may continue to prioritise their development towards poverty eradication it must be done sustainably to ensure that the planet is still habitable for future generations.\textsuperscript{256} Intragenerational equity is significant in the climate change sphere since the countries that contributed the least to climate change are likely to be the most impacted by it.\textsuperscript{257} While these principles feature in the Convention, they are formulated differently in the Paris Agreement.\textsuperscript{258} While there is general consensus that developing countries should receive special treatment and bear the least responsibility, their predicament should not be cause for benefit to large developing States simply because they have been classed together as “developing.”\textsuperscript{259}

Replacing the binary distinction between developed and developing countries, the Paris Agreement requires all parties to take action towards achieving its purpose.\textsuperscript{260} Differentiation occurs through “self-differentiation” with a commitment by all countries to develop and implement “nationally determined contributions” (NDCs) towards their climate change efforts.\textsuperscript{261} The NDCs are to be communicated to the COP every five years and each party’s successive NDC will be a progression on its, at the time, current NDC to reflect its highest possible ambition and reflecting its CBDRRCs in the light of national circumstances.\textsuperscript{262} The progressive increase in commitments is tempered with an acknowledgment that developing countries will need support to effectively implement their commitments.\textsuperscript{263} Although the annex-based reference to “developed” and “developing” countries is not present in the Paris Agreement, the Annexes will

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\item \textsuperscript{253} Lee (2015) 17 Vt. J Envtl. L. 27 at 42.
\item \textsuperscript{254} Ibid at 45.
\item \textsuperscript{255} Ibid.
\item \textsuperscript{257} Ibid at 43.
\item \textsuperscript{258} Bodansky, Brunée, & Rajamani (2017) 221.
\item \textsuperscript{259} Lee (2015) 17 Vt. J Envtl. L. 27 at 44.
\item \textsuperscript{260} Paris Agreement art 3 and 4(2).
\item \textsuperscript{261} Bodansky, Brunée, & Rajamani (2017) 223.
\item \textsuperscript{262} Paris Agreement art 4(3) read with 4(9).
\item \textsuperscript{263} Paris Agreement art 3.
\end{itemize}
\end{flushright}
remain an important point of reference for interpretation as the terms “developed countries” and “developing countries” are used without being defined. Developed countries are required to take the lead by undertaking economy-wide absolute emission reduction targets while developing countries are encouraged to continue enhancing their mitigation efforts working towards economy-wide absolute emission reduction targets. LDCs and Small Island Developing States (SIDS) are not required to develop NDCs for their low greenhouse gas emissions development but they may do so reflecting their special circumstances. While the Paris Agreement implements CBDRRC through the use of self-differentiation, thereby treating States equally, it sets expectations for the types of actions developed and developing countries should take and recognises the need for support and flexibility by developing countries.

Monitoring, reporting and verification is to be performed through the ‘enhanced transparency framework’ (ETF) established in the Paris Agreement. The MRV provisions are premised on State capacities, not their categorisation as either developed or developing. With States holding differentiated mitigation obligations, differentiation in MRV is found in the associated reporting. All parties are to report regularly on national emissions inventories, provide information needed to track their implementation progress, and information related to climate change impacts and adaptation. Developed countries are required to report on support given to developing countries while developing countries are to report on support received. The information reported will be the subject of expert review to determine compliance with the Paris Agreement and to identify the assistance needs of developing countries in capacity building. The ETF is to provide flexibility to developing countries in implementing its provisions in light of their capacities.

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265 Paris Agreement art 4(4).
266 Paris Agreement art 4(6).
267 Bodansky, Brunǣe, & Rajamani (2017) 224.
268 Paris Agreement art 13(1).
269 Supra n 267.
270 Bodansky, Brunǣe, & Rajamani (2017) 225.
271 Paris Agreement art 13(1) read with 13(7) and 13(8).
272 Paris Agreement art 13(9) and 13(10).
273 Paris Agreement art 13(11) and 13(12).
274 Paris Agreement art 13(2).
provided by developed countries to developing countries to implement their reporting commitments.\textsuperscript{275} For compliance purposes, the Paris Agreement established a compliance mechanism.\textsuperscript{276} It will be an expert-based committee that will function in a transparent, non-adversarial and non-punitive manner\textsuperscript{277}, and the committee is required to pay particular attention to the respective national capabilities and circumstances of the parties\textsuperscript{278}.\textsuperscript{279} The previous softer approach to non-compliance appears to have been retained although there is no specific reference to developed or developing countries.\textsuperscript{280}

The financial assistance obligations of the Paris agreement are similar to those found in the Convention and the financial mechanism has been retained.\textsuperscript{281} The assistance obligations remain the preserve of developed countries, although donor funding has been expanded to include the encouragement of voluntary support from other parties\textsuperscript{282}, presumably developing countries.\textsuperscript{283} Developed countries succeeded in excluding a quantitative value being assigned to their financial assistance commitments in the Paris Agreement but the accompanying COP decision continues their commitment to provide USD100 billion annually by 2020 and increase this amount after 2025.\textsuperscript{284} Developed countries also maintain their leadership role in mobilising climate finance.\textsuperscript{285}

The technology provisions of the Paris Agreement apply to all parties but with support (including financial support) provided to developing countries.\textsuperscript{286} The use of the technology mechanism of the Convention is maintained and a technology framework is established to provide guidance in facilitating enhanced technology development and transfer.\textsuperscript{287} All parties are required to co-operate to enhance the capacity of

\textsuperscript{275} Paris Agreement art 13(14) and 13(15).
\textsuperscript{276} Paris Agreement art 15(1).
\textsuperscript{277} Ibid.
\textsuperscript{278} Ibid.
\textsuperscript{279} Ibid.
\textsuperscript{280} Ibid.
\textsuperscript{281} Ibid.
\textsuperscript{282} Ibid.
\textsuperscript{283} Ibid.
\textsuperscript{284} Ibid. See also: Paris Agreement, Article 9.
\textsuperscript{285} Ibid. See also: Paris Agreement art 10.
\textsuperscript{286} Ibid. See also: Paris Agreement art 10(3) and 10(4).
developing countries to implement adaptation and mitigation actions, however, developed countries are required to enhance their support for capacity building action in developing countries through "appropriate institutional arrangements". To contribute to the mitigation of greenhouse gases and support sustainable development, the Paris Agreement creates a sustainable development mechanism (SDM). The goal of the SDM is to provide a post-Kyoto CDM. As with CDM, a share of the proceeds from these project activities will assist particularly vulnerable developing countries in meeting the costs of adaptation. There is also a strong focus on adaptation, the goal of which is to enhance "adaptive capacity, strengthening resilience and reducing vulnerability to climate change". Support for such activities in developing countries is to come from developed countries.

Although the Convention prescribed general obligations to all parties, the Paris Agreement is a "watershed" agreement in differentiation between developed and developing countries. All parties now hold obligations in order to achieve the goals of the Paris Agreement and of the Convention. As is evident, a central theme to the obligations of developing countries is the provision of assistance to them in order to meet these obligations.

### 3.4 Conclusion

CBDRRC is a consistent guiding principle of the climate change regime across more than twenty years of development. It is its interpretation and, therefore, implementation that has seen significant change in this time. When the issue of emissions reduction and mitigation from international civil aviation was first referred to ICAO, CBDRRC represented a dichotomy between developed and developing countries. Developed countries were tasked with the full brunt of emissions reduction and mitigation efforts.

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288 Paris Agreement art 11(5).
289 Paris Agreement art 11(1) read with art 11(3) and 11(5).
290 Paris Agreement art 6(4).
291 Okonkwo (2017) 21 Kor. U. L Rev. 21 at 32.
292 Ibid.
293 Paris Agreement art 6(6).
294 Paris Agreement art 7(1).
295 Paris Agreement art 9(1).
296 Okonkwo (2017) 21 Kor. U. L Rev. 21 at 34.
while developing countries held limited obligations, none of which included reduction
and mitigation measures. With changing national circumstances, and the realisation
that to meet the objective of the Convention and address climate change will require
a global effort, has come the change in CBDRRC.

The contemporary central obligations of States now require participation by all, except
LDCs and SIDS, reflecting their highest possible ambition, tempered by their national
circumstances. Developed countries take the lead by undertaking large scale
emissions reductions and developing countries continue to enhance their efforts, the
levels of participation are, however, nationally determined. While developing countries
are not necessarily required to provide immediate reductions in their emissions, they
are required to ensure that steps are taken to develop sustainably, and their
commitments will increase over time.

Participation by all includes reporting by all to track implementation and identify non-
compliance concerns with specific emphasis on flexibility to developing countries and
their assistance needs. Central to developing country participation is the
acknowledgment that they will require assistance, both financial and technological, to
build capacity and meet their commitments, and undertakings by developed countries
to provide and facilitate this assistance. LDCs and SIDS remain particularly vulnerable
to the threat posed by climate change and their special circumstances remain
acknowledged throughout the regime. They are not required to provide mitigation or
reduction commitments and hold an elevated status in the provision of assistance.
This is the interpretation of CBDRRC will be used in assessing the measures
introduced by ICAO to combat climate change.
4. ICAO AND THE ENVIRONMENT

4.1 Synopsis

This chapter will introduce the difficulties associated with implementing CBDRRC in international civil aviation to contextualise the methods used in its implementation. The further discussion will focus on CORSIA and the differentiation techniques used. This will serve as the basis for the assessment of the implementation of CBDRRC. It will argue that the CORSIA effectively implements CBDRRC in accordance with the contemporary interpretation of CBDRRC found in the climate change regime.

4.2 Introduction

The primary function of the international civil aviation regime is to facilitate traffic growth in an orderly manner. The Chicago Convention records agreement to “certain principles and arrangements” for the further development of international civil aviation and to the creation of ICAO with its core mandate being “to achieve the highest possible degree of uniformity in civil aviation regulations, standards, procedures, and organisations”. ICAO is not an environmental organisation and the direct interests of the organisations main stakeholders are not directly associated with environmental protection.

Neither the principles underlying the Chicago Convention nor the ICAO mandate in terms of the Convention expressly address environmental protection. ICAO does not have direct regulatory authority in the greenhouse gas emissions context and, yet, has introduced emissions standards and multiple Assembly Resolutions that address environmental protection. The environmental protection measures by ICAO have been undertaken under article 44(d) of the Chicago Convention which records the

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299 Chicago Convention preamble.
300 https://www.icao.int/about-icao/History/Pages/default.aspx (accessed 18 June 2017).
301 Ibid.
303 Chicago Convention preamble and art 44.
objective of developing international air transport so as to meet the needs of the peoples of the world for safe, regular, efficient, and economical air transport. Where ICAO has exercised regulatory authority regarding environmental concerns, its regulatory competence has been accepted by ICAO members, supported by the climate change regime, and is beyond dispute. More critically, it is the design and structure of the international aviation regime as a facilitator of growth for the industry and not the accommodation of environmental concerns that has placed strain on its ability to readily deliver results in the climate change arena.

The 39th meeting of the Assembly in 2016 introduced the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) through Assembly Resolution A39-3. The Council will oversee the functioning of the CORSIA. Its purpose is to address the annual increase of total carbon dioxide emissions in international civil aviation above 2020 levels. It entails emitters compensating for these emissions through investment in emissions reductions projects elsewhere (carbon offsetting), similar to the CDM established under the Kyoto Protocol. Carbon offsetting, from an international civil aviation perspective, entails compensating for the emissions associated with international civil aviation by reducing emissions elsewhere. The rationale for offsetting flows from climate change being a global issue and, therefore, carbon reduction projects may occur anywhere in the world. It is a convenient mechanism to use when a sector, such as aviation, is not able to achieve significant immediate emissions reductions. The rapid growth of the international civil aviation sector is critical to the projected increase in size of its carbon footprint and the difficulty in pursuing mechanisms that do not entail offsetting. Participants of the scheme will purchase emissions credits from outside of the aviation sector, generated from mechanisms under the UNFCCC and Paris Agreement, and use these credits to offset

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305 Chicago Convention art 44(d).
307 Ibid.
308 Macintosh, supra n 298, at 7.
309 A39-3.
310 A39-3(20)(i).
311 A39-3(5).
314 Ibid.
315 Supra n 312.
their emissions that are above those generated in the base year, subject to certain eligibility criteria to avoid issues such as double counting.\textsuperscript{317}

To fully appreciate the CORSIA and its implementation of CBDRRC, it is necessary to contextualise the difficulty associated with CBDRRC and the international civil aviation regime. This will form the point of departure for this chapter before introducing CORSIA and the assessment of the implementation of CBDRRC.

\section*{4.3 The Chicago Convention and CBDRRC: Addressing Differentiation Within a Framework Requiring Equality}

CBDRRC was included as a guiding principle in the design and implementation of ICAO’s proposed market based measures.\textsuperscript{318} Its implementation was envisaged through \textit{de minimis} exemptions from, or phased implementation for, the application of an MBM to particular routes or markets with low levels of international aviation activity, particularly those serving developed States.\textsuperscript{319,320} It was further evidenced though the recommendation to apply revenues generated to, among others, providing support and assistance to developing States.\textsuperscript{321,322} 48 member States entered reservations against CBDRRC as a guiding principle.\textsuperscript{323} Australia did not support a distinction between developed and developing States.\textsuperscript{324} Canada held the view that the principle is incompatible with the international civil aviation regime.\textsuperscript{325} The European Union argued against the application of the principle because it would result in market distortions by distinguishing between carriers of different States.\textsuperscript{326} And the

\begin{thebibliography}{99}
\bibitem{317} A39-3(21).
\bibitem{318} A38-18 Annex.
\bibitem{319} A38-18 (21)
\bibitem{320} Romera \textit{et al} (2015) 27 OJEL 259 at 279.
\bibitem{321} A38-18(24) read with Annex par (n).
\bibitem{322} Supra n 320.
\bibitem{323} Summary Listing of Reservation to Resolution A38-18.
\bibitem{324} The Australian Representative on the Council of the International Civil Aviation Organization Reservation by Australia to Resolution A38/17/2 on internal aviation and climate change.
\bibitem{325} Permanent Mission of Canada to the International Civil Aviation Organisation Statement of Canada’s Reservations regarding the 38th International Civil Aviation Organization General Assembly Resolution: Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection – Climate Change.
\bibitem{326} Written Statement of Reservation by Lithuania on behalf of the Member States of the European Union and 141 other Member States of the European Civil Aviation Conference (ECAC) with regard to ICAO Assembly Resolution A38-18.
\end{thebibliography}
United States and Korea did not support the application of CBDRRC within the international civil aviation regime at all.\(^{327,328}\)

The challenge for international aviation emissions regulation is providing differential treatment between developed and developing States in a sector characterised by equality in treatment that has expressly agreed to avoid discrimination between States.\(^{329}\) The preamble to the Chicago Convention refers to the establishment of international air services refill on the basis of equality of opportunity.\(^{330}\) The Convention also specifically addresses ICAO’s obligations to ensure that refill every contracting State has a fair opportunity to operate international airlines\(^{331}\) and to refill avoid discrimination between contracting States\(^{332}\). The difficulty for ICAO can be seen in Assembly Resolutions consistently recording acknowledgement of CBDRRC and the leadership role of developed countries and immediately thereafter acknowledging the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention.\(^{333}\) \(^{334}\) \(^{335}\)

There are, however, methods of designing the law to provide prima facie equal treatment while providing differentiation. This is best illustrated using the distinctions between legal norms hypothesised by Magraw.\(^{336}\) Magraw distinguishes between three types of international norms, namely differential, contextual, and absolute norms.\(^{337}\) Differential norms are those that directly differentiate between developed and developing States, most likely providing more favourable treatment to the latter.\(^{338}\) Contextual norms, at face value, provide identical treatment to all States but consider

\(^{327}\) United States Mission to the International Civil Aviation Organization Statement of the United States of America regarding the 38th International Civil Aviation Organization General Assembly Resolution: Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection – Climate Change.

\(^{328}\) Permanent Mission of the Republic of Korea to the International Civil Aviation Organization Statement of Reservation of the Republic of Korea Regarding Resolution A38-17/2: Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection – Climate Change.


\(^{330}\) Chicago Convention preamble.

\(^{331}\) Chicago Convention art 44(f).

\(^{332}\) Chicago Convention art 44(g).

\(^{333}\) A38-18 preamble.

\(^{334}\) Ibid.


\(^{336}\) Ibid at 267.


\(^{338}\) Ibid at 73 and 98.
characteristics that will vary according to a State’s economic development. And absolute norms do not provide any differentiation between States. Using contextual norms to provide differentiation will, therefore, maintain the requisite equality between States. The implementation of CBDRRC in accordance with contextual norms will become more apparent in the discussion and assessment of CORSIA to follow.

4.4 The CORSIA

It was widely accepted that there should be differentiation between States in their participation in the early phases of CORSIA. There was, however, no agreement on the determination of the initial participants. Negotiators were faced with several suggestions i.e that it should be premised on levels of international aviation activity (expressed in Revenue Tonne Kilometres or RTKs); that it should be a combination of RTKS and gross national income per capita, and a proposal that developed countries should go first. Notably, the latter option was rejected on the foundation that several developing States have high international aviation activity and the Paris Agreement having moved beyond the dichotomy of the Kyoto Protocol. Ultimately, agreement was found using an opt-in approach.

CORSIA will be implemented in a phased approach, in order to accommodate the special circumstances and respective capabilities of States, in particular developing States. The pilot phase, applicable from 2021 to 2023, and the first phase, applicable from 2024 to 2026, are voluntary with slight changes between the offsetting requirements in each phase. There was general agreement that all States would participate in CORSIA after the pilot phase and first phase except those that ought to be exempt. The second phase, applicable from 2027 to 2035, requires the participation of all States whose Revenue Tonne Kilometres (RTKs) exceed 0.5% of

340 Ibid at 76.
342 Ibid at 3
343 Ibid at 3 ÷ 4.
344 Ibid at 4.
345 Ibid.
346 A39-3(9).
347 A39-3(9)(a) and (b).
348 Biniaz, supra n 341, at 6.
the total RTKs or whose share in the list of States ranked from highest to lowest RTKs
reaches 90% of the total RTKs, except Least Developed Countries (LDCs), Small
Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs)
unless they volunteer their participation.\textsuperscript{349} Although ICAO encourages the
participation of all States in the pilot phase, those developed States that volunteered
in the pilot phase are considered to be taking the lead.\textsuperscript{350} By 29 June 2018, 72 States,
representing 75.95% of international aviation activity, had indicated their intention to
participate in the CORSIA from inception with the pilot phase.\textsuperscript{351}

The flight route is the determining factor in the application of CORSIA. The scheme is
only applicable to international flights on routes between participating States.\textsuperscript{352} Where
one or both States are not included in the CORSIA, they are exempt from the offsetting
requirements but maintain simplified reporting requirements.\textsuperscript{353} Once the scheme is
applicable to a State, the offsetting requirements of operators are calculated using a
universally applicable calculation that is based on their respective emissions covered
by CORSIA, the aviation sector’s growth, and the operator’s growth during a specific
year.\textsuperscript{354} These commitments increase progressively with increasing emphasis placed
on the respective operator’s individual emissions as opposed to the sectoral growth.\textsuperscript{355}
During the pilot phase, participating States will calculate operators’ offsetting
requirements using their emissions from the respective year, or their emissions
covered by CORSIA in 2020, and multiplying that by the sectors growth factor.\textsuperscript{356} The
sector’s growth factor is determined using the average emissions covered by CORSIA
between 2019 and 2020 as the baseline for comparison.\textsuperscript{357} During the first phase, the
same calculation applies, however, the choice of year for operators’ emissions is
removed and is based on the year in question.\textsuperscript{358} The individual operator’s growth
does not feature in the calculation of its offsetting requirements until 2030, when the

\textsuperscript{349} A39-3(9)(e).
\textsuperscript{350} A39-3(9)(c).
\textsuperscript{351} https://www.icao.int/environmental-protection/CORSIA/Pages/state-pairs.aspx (accessed on 4
August 2018).
\textsuperscript{352} A39-3(10).
\textsuperscript{353} Ibid.
\textsuperscript{354} A39-3(11).
\textsuperscript{355} A39-3(11)(e)(i) ÷ (v).
\textsuperscript{356} A39-3(11)(e)(i).
\textsuperscript{357} A39-3(11)(b) ÷ (c).
\textsuperscript{358} A39-3(11)(e)(ii).
calculation changes to incorporate at most 80% sectoral growth and at least 20% operator growth, and from 2033 to 2035, at most 30% sectoral growth and at least 70% operator growth. On analysis of the possible costs, ICAO’s Committee on Aviation Environment Protection (CAEP) and its Global MBM Technical Task Force (GMTF) estimate the total offsetting costs in 2025 varying between USD1.5 and USD6.2 billion, and in 2035 between USD5.3 and USD23.9 billion, depending on the carbon price. This would amount to between 0.2 and 0.6% of total revenues from international aviation in 2025, and between 0.5 and 1.4% in 2035. By comparison with the cost of jet fuel, the estimated offsetting cost in 2030 is the equivalent of a USD2.6 rise in the per barrel price. Over the previous ten years, the standard deviation of the jet fuel price annually has been almost USD40 per barrel and airlines have coped with such volatility.

CORSIA acknowledges the special circumstances and respective capabilities of States (SCRC) by acknowledging the status of developing States, in terms of vulnerability to the impacts of climate change, economic development levels, and contributions to international aviation emissions, among other things but tempers this acknowledgment with the need to minimise market distortion. In addition to phased implementation, SCRC is seen through the exemption of LDCs, SIDS and LLDCs based on socio-economic indicators and fuel consumption based exemptions relative to the individual share of international aviation. New entrants are also exempt from the application of the CORSIA for three years or until the entrant’s annual emissions exceed 0.1 per cent of total 2020 emissions, whichever occurs earlier, in which case it will be included in the scheme the following year. The scheme is also not applicable to low levels of international aviation activity (emitting less than 10,000

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359 A39-3(11)(e)(iv) Í (v).
360 ICAO (2016), supra n 312, at 141.
361 Ibid at 142.
362 Ibid.
363 Ibid.
364 A39-3(8).
365 Ibid.
366 Ibid.
367 ICAO Sky Talks Workshop Environmental Protection – Global Market Based Measure Scheme.
368 A39-3(12) defines a new entrant as any aircraft operator that commences an aviation activity falling within the scope of the scheme on or after its entry into force and whose activity is not in whole or in part a continuation of an aviation activity previously performed by another aircraft operator. 0
369 A39-3(12).
metric tonnes of CO2 emissions from international aviation per year) or aircraft with less than 5,700 kg of Maximum Take Off Mass (MTOM), or humanitarian, medical and firefighting operations.\textsuperscript{370}

Critical to State obligations in terms of CORSIA is to ensure that once the scheme is applicable to its operators, that there are effective mechanisms in place for effective participation. At the time of agreement in CORSIA, the Council had not completed its work on the MRV system to be used but this work was to be completed as soon as possible and include provisions for capacity building and assistance.\textsuperscript{371} Nonetheless, all States hold reporting requirements, even if exempt from participation in the CORSIA.\textsuperscript{372}

The core focus of assistance-based provisions of the CORSIA relate to capacity building for its effective implementation.\textsuperscript{373} However, general climate change assistance is provided to developing countries by the promotion of the use of emissions units (i.e through the CDM) that benefit developing countries.\textsuperscript{374} In implementation capacity building, States are to take all necessary actions to provide capacity building and assistance and building partnerships for the implementation of CORSIA but specific emphasis is placed on the implementation of the MRV system and the establishment of Registries.\textsuperscript{375} The Council is to expand the provision of capacity building and assistance to States and, where needed, facilitate the provision of financial support for the implementation of the MRV system and establishment of registries by States.\textsuperscript{376} The Council is also required to expand the provision of capacity building and assistance for the preparation of Member States’ action plans (this would include seminars and training) and, where needed, facilitate financial support to these ends.\textsuperscript{377}

\textsuperscript{370} A39-3(13).
\textsuperscript{371} A39-3(15).
\textsuperscript{372} A39-3(10)
\textsuperscript{373} A39-3(22).
\textsuperscript{374} A39-3(24).
\textsuperscript{375} A39-3(22)(a) and (c).
\textsuperscript{376} Ibid.
\textsuperscript{377} Ibid.
Beyond CORSIA, ICAO has recognised, and taken steps to provide for, the assistance needs of States. Through its Technical Co-Operation Programme, ICAO provides advice and assistance in developing and implementing, among other things, environmental protection projects and the sustainable development of civil aviation.\(^{378}\) The Technical Co-Operation programme is, however, 95% funded by recipients.\(^{379}\) Assembly Resolution A38-18 requests the continued provision of information, guidance and technical assistance to enhance capacity building and technology transfer.\(^{380}\) The resolution goes further to include instruction to the Council to develop a process of mechanisms that will facilitate the provision of technical and financial assistance, technology transfer and capacity building to developing countries and continue to initiate specific measures to this end.\(^{381}\) ICAO has also partnered with the EU and the United Nations Development Programme (UNDP) in a joint assistance project.\(^{382}\) The EU joint assistance project, Capacity Building for CO2 Mitigation from International Aviation, is an EU funded project to assist fourteen selected African and Caribbean States to, among other things, develop and submit their action plans, set up Aviation Environmental Systems (AES) to establish emission inventories and monitor carbon dioxide emissions from aviation, and implement mitigation measures to reduce aviation emissions, including feasibility studies.\(^{383}\) The UNDP joint assistance project is financed by the Global Environment Facility (GEF) and is aimed at supporting developing states and SIDS in their international civil aviation emissions mitigation efforts.\(^{384}\) It is a global capacity building programme that assists developing States and SIDS in assessing the costs and benefits associated with the mitigation measures selected in their action plans, to enhance the regulatory and organizational structures to support environmental policy and decision-making, provide an online technical platform for knowledge-sharing, and includes a solar-gate pilot project in Jamaica to reduce aircraft emissions while parked at gate.\(^{385}\)

\(^{378}\) [https://www.icao.int/secretariat/TechnicalCooperation/Pages/default.aspx](https://www.icao.int/secretariat/TechnicalCooperation/Pages/default.aspx) (accessed 11/08/2018)


\(^{380}\) A38-18(31)(a)

\(^{381}\) A38-18(31)(c) (d)

\(^{382}\) [https://www.icao.int/environmental-protection/Pages/Assistance.aspx](https://www.icao.int/environmental-protection/Pages/Assistance.aspx) (accessed 11/08/2018)

\(^{383}\) Ibid.

\(^{384}\) [https://www.icao.int/environmental-protection/Pages/ICAO_UNDP.aspx](https://www.icao.int/environmental-protection/Pages/ICAO_UNDP.aspx) (accessed on 11 August 2018)

4.5 The CORSIA and CBDRRC

The contemporary emissions mitigation theme found in the climate change regime, that addressing climate change requires the participation of all parties, is certainly carried into the central obligations of the CORSIA. Adopting a pilot phase and first phase, in which the participation of States is elective, allows delayed participation in accordance with a States national circumstances and providing SCRC exemptions is reflection of CBDRRC that is consistent with the climate change regime. While there is an appearance of rigidity in applying the same method of calculation to be used in calculating an operators’ binding commitments, irrespective of a States development status, further flexibility (and therefore the ability to differentiate) is found in the pilot phase by the adoption of a base year of choice for measurement.

The distinguishing features between CORSIA and the contemporary climate change regime are the equal treatment of States once the scheme is applicable to them and the, by comparison, rapid timeline for compulsory equal participation. The immediate difference in a central obligations comparison is the difference between State action, required under the climate change regime and, in part, operator action required under CORSIA. The central obligations flowing from CORSIA (i.e emissions reduction targets and active participation in the scheme) apply to the operators themselves. The obligations of States entail MRV requirements, the establishment of registries, and ensuring the necessary infrastructure and capacity is in place for the effective participation of operators once the scheme is applicable. The MRV and registries requirements of CORSIA are the natural result of implementing a global market-based measure and, too, for the implementation of the de minimis exclusions. Without this information, the CORSIA would be inoperative. States may delay their participation within the scheme until 2027, allowing time to those that need it to build capacity and infrastructure, and assistance is to be provided to this end by Member States through partnerships and through facilitation by the Council in both the technical and financial spheres.

Requiring participation by all with the exception of those States that hold special status due to their special circumstances is consistent with the contemporary interpretation of CBDRRC found in the climate change regime. This consistency is further reflected
in the recognition that developing country participation will require assistance, both financially and technically, and the implementation of projects to this end. Divergence is found in the comparatively rapid timeline before all States are to be treated equally within CORSIA. This, however, is likely best ascribed to the context of international civil aviation as a sector and the obligations flowing to States as opposed to an interpretation of CBDRRC. The CORSIA, nonetheless, contains a preambular proviso that it does not set a precedent for States engagements within the climate change regime or other international fora.\footnote{A39-3 preamble.}

### 4.6 Conclusion

The international civil aviation regime’s preclusion of the use of the same differentiation methods used within the climate change regime has not deterred the recognition and implementation of CBDRRC in mitigation efforts within ICAO. While the resulting agreement is one that treats all States equally, it allows differentiation between States that accords with the contemporary interpretation of CBDRRC found in the climate change regime.
5. CONCLUDING REMARKS

The purpose of this thesis has been to show that States have given effect to the principle of CBDRRC in their climate change engagements through ICAO, the CORSIA in particular.

This thesis has illustrated the nature of CBDRRC, its implementation and its development within the climate change regime to its contemporary interpretation. This was then used as a means of comparison with the implementation of CBDRRC in the CORSIA.

Despite State wrangling over the application of CBDRRC within international civil aviation, it is argued that the implementation of CBDRRC within the CORSIA, nonetheless, accords with the contemporary interpretation of CBDRRC.
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