

# **The Progress of Air Law**

*The Resolutions of the International Civil Aviation  
Organization*

By

**Ruwantissa Abeyratne**

The Progress of Air Law: The Resolutions of the International Civil  
Aviation Organization

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## Preface

2022 was an eventful year for the International Civil Aviation Organization – the specialized agency of the United Nations on international civil aviation. In September/October ICAO held its 41<sup>st</sup> Session of the Assembly where member States adopted various Resolutions, some of which, as will be discussed in this book, addressed implications for the essential principles of international air law. For example, up until recently, the philosophy of air law was based on the sole premise of sovereignty of States over the airspace above their territories. While it still remains so as the fundamental postulate of air law, the 21<sup>st</sup> Century brought in new realizations that act as supplemental to the perceived inadequacy of addressing State sovereignty in a more enlightened sense to expand the inviolable principle of sovereignty over airspace making airspace a shared resource encompassing concepts such as sovereign responsibility. Shared responsibility brings to bear the fact that sovereign responsibility must be regulated to ensure that air transport is operated with regularity, economically with equality of opportunity for all concerned.

This requires the balancing of interests of different users of airspace and recognizes the need to protect the safety of passengers and crew, as well as the public on the ground.

One of the main areas of interest that surfaced over the past 20 years in the context of sharing resources by all countries and key stakeholders of air transport is the response of aviation to climate change which brought to bear the need to acknowledge the impact of aviation on the environment which transcended sovereign borders, and to promote sustainable practices in the industry. It recognizes the need for cooperation between nations to address issues of air transport through The International Civil Aviation Organization and its triennial Assembly of 193 member States. Another key area – which was given much focus at the 41<sup>st</sup> Session of the ICAO Assembly in 2022 was the significance of the work of the ICAO Legal Committee as well as erosion of the principle of State sovereignty.

The starting point of aviation law is anchored on two fundamental factors: standardization and harmonization. Standardization simply means global compliance, and harmonization means global commonality, both of which

are absent in the law and regulation of aviation when it comes to addressing climate change. There is simply no global compliance of the ICAO mechanism for handling climate change – CORSIA – (which will be discussed at length in this book) nor is there by no means domestic legislation or practices in all of 193 member States of commonality. Added to this, there is no explicit mention of sustainable development in the Chicago Convention, except for the advocacy of “friendship and understanding” among the peoples of the world and the need to ensure that air services are operated internationally in a safe and orderly manner, economically with equality of opportunity for all carriers to compete. In this context one can only wonder how carbon offsetting and the purchase of carbon credits by one carrier from another comports with equality of opportunity to compete.

Added to this conundrum is Article 44d) of the Chicago Convention which says that one of the aims and objectives of ICAO under the broad umbrella of “fostering the planning and development of air transport” is to meet the needs of the people for safe, regular, economical and efficient air transport. Again, one would be stretched to relate these various terms (implicitly or explicitly) to carbon reduction or offsetting. If a future diplomatic conference convened by the ICAO Council, as a result of being spurred on by the ICAO Legal Committee, were to include just one word in Article 44 *i.e.*, the word “sustainable” and make the aim and objective of the Organization “fostering the planning and sustainable development of air transport” this might solve the ambivalence and equivocal message the provision currently sends.

In addition to the strong focus of the ICAO Assembly in 2022 on legal and climate change issues, another key area that was subject to discussion was the interpretation of the Chicago Convention and its amendments in the context of ICAO member States not having a clear enough perspective of how the Convention and its amendments impacted the functions of States in aviation. There was also a discussion on the need to enhance the competence of legal advisors in aviation matters.

The 41<sup>st</sup> Session of the ICAO Assembly amply demonstrated the perceived inadequacy of balance that ICAO has been working with over the past several decades where a focused concentration on technical issues enunciating “the principles and techniques of air navigation” – as articulated

in the Convention on International Civil Aviation – have gained pre-eminence over “fostering the planning and development of air transport”. As an example, in 2022 ICAO launched its Secretariat Strategy of Innovation, where innovation is defined as “the introduction of new things, ideas, concepts or ways of doing something that is ahead of current thinking and forward-looking”. The essential strategy of this approach is to inter alia identify, develop and deploy, in coordination with States, regulators and/or industry partners, more efficient and effective and /or innovative solutions that enhance the ICAO Strategic Objectives, consistent with the Convention on International Civil Aviation (Chicago Convention), and foster the realization of Supporting Strategies.

One of the examples of this innovation strategy was seen on 22 March 2023 when ICAO launched the Electronic Personnel License (EPL) that is calculated to replace hard copy licenses. The technical standards for the EPL came into force on 3 November 2022 which require that the EPL must be verifiable online and offline, without imposing an undue burden on another.

Amidst all innovation there is profound dynamics in geopolitics bringing to bear a compelling need for more effective regulation in aviation in general and air transport in particular. In this context arguably the most important event is the triennial Assembly of ICAO – the Organization’s sovereign body convened by the Council of ICAO - where a host of Resolutions are adopted that are calculated to address current trends in international civil aviation. This book discusses the key Resolutions and inquires how effective these Resolutions are in the progress of air law.



## Chapter 1

# Legal Legitimacy of ICAO Assembly Resolutions

One of the main functions of the ICAO Assembly is to adopt Resolutions, although ICAO does not acknowledge, nor mention this fact in ICAO's website. An ICAO Resolution is a formal text adopted by the ICAO Assembly which by no means is enforceable law. At best it is a formal expression of an opinion, intention, or decision by an official body or assembly and widely considered as meaning recommendations and decisions. These Resolutions follow a common format and consist of three parts: the heading, the preambular clauses, and the operative clauses (Title; Preamble containing Preambular or Whereas clauses; and action clauses). The entire resolution comprises one long sentence, with commas and semi-colons throughout, and only one period at the very end.

From the outset it can be established that ICAO Resolutions, which are the Resolutions adopted by member States of ICAO at the triennial Assembly of the Organization, can be considered on the same basis as any resolution adopted by the United Nations – as ICAO member States are also members of the United Nations - and *a fortiori*, as ICAO is a specialized agency of the United Nations. These Resolutions are no more than results of political compromises to which no legal legitimacy can be ascribed<sup>1</sup>. Resolutions therefore have a recommendatory nature which are at best comprised of a coercive feature that could push States to follow a particular line of action of compliance. Usually, Resolutions present a normative system which is calculated to establish a degree of social order.

This having been said it must be noted that Resolutions of the ICAO Assembly are not destitute of effect and their effectiveness can vary depending on the situation and context in which they are used. Although these Resolutions can be ambiguous and lack time limits for terminating controls and sanctions, they can assist in the mediation of negotiations,

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<sup>1</sup> *Ian Brownlie*, Principles of Public International Law, Fourth Edition, Clarendon Press, Oxford, 1990, p. 691. Also *Malcolm N. Shaw*, International Law, Fifth Edition, Cambridge University Press, 2003, at p. 110.

highlight issues to other nations who can then condemn the actions of the aggressive party, allow for the start of humanitarian aid and support, and hopefully lead to a resolution to the situation. ICAO Assembly Resolutions can exert considerable influence by producing general political effects in the relations among nations. Some commentators, referring to General Assembly (GA) Resolutions of the United Nations have offered a contrarian view. "it can be concluded that the Resolutions of the GA are a legitimate source of international law. However there are differences of opinion on the legal aspect of such Resolutions. The Resolutions are legitimate in the sense that the breach of the Resolutions will be counterproductive in all aspects of international law. The GA Resolutions do not classify as sources of law as the ICJ lays down the categories that should be construed as the sources of law. In this context there are suggestions that the GA Resolutions should be viewed as an independent source of international law. The roles of the GA Resolutions are to strengthen the international law and can establish a general practice that is recognized by the international law. The GA produces norms that functionally operate as law and the states respond in a positive aspect and comply with the "prescriptive assertions" of the General Assembly as though such Resolutions are binding on the states"<sup>2</sup>.

There are three schools of thought which support the view that Resolutions of the United Nations have legal legitimacy. The first is that these Resolutions are derived from the Charter of the United Nations which confer legitimacy to the Resolutions with the authority of the Charter. The 1979 case of *Filartiga v. Pena-Irala*<sup>3</sup> is a case where the United States courts addressed the relevance of a Resolution of The United Nations in the course of their finding based on international law. The *Filartiga* case was a landmark in United States and international law.. The court took a middle ground approach which, while referencing the traditional sources, relied prominently upon United Nations General Assembly Resolutions - a source many authorities would give far less consideration. For purpose of the Alien Tort Claims Act, torture may be considered to violate law of

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<sup>2</sup> Ahmad Alsharqawi, Ahmad Bani Hamdan, Moh'd Abu Anzeh, The Role of General Assembly Resolutions to the Development of International Law, *Journal of Legal, Ethical and Regulatory Issues*, 2021 Vol: 24 Issue: 2  
<https://abacademies.org/articles/the-role-of-general-assembly-Resolutions-to-the-development-of-international-law-10426.html>

<sup>3</sup> 630 F 2d. 876.

nations. The court observed that there is no definitive statement as to the extent of the “human rights and fundamental freedoms” promoted in the Charter, but there is no dissent from the view that the [Charter] guaranties include, at a bare minimum, the right to be free from torture. The court cited language from two General Assembly Resolutions—the Universal Declaration of Human Rights and the Declaration on the Protection of All Persons as evidence that this prohibition is now part of customary international law. One commentator observed: “Standing alone, General Assembly Resolutions (even those adopted unanimously) have no binding force among the member nations. They are not law, only evidence of it. Their provisions must be balanced against other pronouncements of state practice, which may or may not be consistent with a given resolution”<sup>4</sup>.

As for ICAO Assembly Resolutions, it is arguable that although the ICAO Assembly derives its genesis from the Convention on International Civil Aviation also referred to as the Chicago Convention (Article 43)<sup>5</sup>, Neither the Chicago Convention<sup>6</sup> nor ICAO recognize this derivation. In its website ICAO identifies the Assembly as having numerous powers and duties,

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<sup>4</sup> C. Donald Johnson Jr, *FILARTIGA v. PENA-IRALA: A CONTRIBUTION TO THE DEVELOPMENT OF CUSTOMARY INTERNATIONAL LAW BY A DOMESTIC COURT*. See <https://digitalcommons.law.uga.edu/cgi/viewcontent.cgi?article=1950&context=gjicl>.

<sup>5</sup> Article 43 says: “An organization to be named the International Civil Aviation Organization is formed by the Convention. It is made of an Assembly, a Council, and such other bodies as may be necessary”.

<sup>6</sup> Article 49 of the Chicago Convention which lays out the powers of the Assembly identify the following functions: Elect at each meeting its President and other officers; b) Elect the contracting States to be represented on the Council, in accordance with the provisions of Chapter IX; c) Examine and take appropriate action on the reports of the Council and decide on any matter referred to it by the Council; d) Determine its own rules of procedure and establish such subsidiary commissions as it may consider to be necessary or desirable; e) Vote annual budgets and determine the financial arrangements of the Organization, in accordance with the provisions of Chapter XII;\* f) Review expenditures and approve the accounts of the Organization; g) Refer, at its discretion, to the Council, to subsidiary commissions, or to any other body any matter within its sphere of action; h) Delegate to the Council the powers and authority necessary or desirable for the discharge of the duties of the Organization and revoke or modify the delegations of authority at any time; i) Carry out the appropriate provisions of Chapter XIII; j) Consider proposals for the modification or amendment of the provisions of this Convention and, if it approves of the proposals, recommend them to the contracting States in accordance with the provisions of Chapter XXI; k) Deal with any matter within the sphere of action of the Organization not specifically assigned to the Council.

among them to: elect the Member States to be represented on the Council; examine and take appropriate action on the reports of the Council and decide any matter reported to it by the Council; and approve the budgets of the Organization. The Assembly may refer, at its discretion, to the Council, to subsidiary commissions or to any other body any matter within its sphere of action. It can delegate to Council the powers and authority necessary or desirable for the discharge of the duties of ICAO and revoke and modify the delegations of authority at any time; and deal with any matter within the sphere of action of ICAO not specifically assigned to the Council. In general, it reviews in detail the work of the Organization in the technical, administrative, economic, legal and technical cooperation fields. It has the power to approve amendments to the Chicago Convention, which are subject to ratification by Member States.

The second point of view supporting the claim that Resolutions have legal legitimacy is United Nations General Assembly Resolutions can replace elements needed to establish customary law. This cannot be applied to ICAO Assembly Resolutions as States have the option of rejecting principles contained in the Resolutions by recording their reservations of non-compliance. The third theory is that UN General Assembly applies normative rules adopted by the entirety of the international community. This does not comport with ICAO Resolutions which are non-binding on States which can mark their reservations.

Other commentators view United Nations Resolutions as mere recommendations, not laws, and thus not binding on member States saying “hence, an important focus has been put on the ‘legal status’ of the Resolutions: without any formal legal obligation for the member states (MS) to implement, let alone consider these Resolutions, it is difficult for the GA to have any real coercive authority”<sup>7</sup>. They argue that “even though GA Resolutions enjoy a limited legal status, there is actually a point to having them if we consider first their symbolic as well as political impact and secondly their influence on contemporary international law, especially customary law”<sup>8</sup>.

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<sup>7</sup> Celine Van den Rul, Why Have Resolutions of the UN General Assembly If They Are Not Legally Binding? *E-International Relations*, June 16 2016 at <https://www.e-ir.info/2016/06/16/why-have-Resolutions-of-the-un-general-assembly-if-they-are-not-legally-binding/>

<sup>8</sup> *Ibid.*

The General Assembly (GA) Resolutions can be symbolic in two main ways: it can have an invaluable influence on the behavior of states and stigmatize or isolate the practice of states that do not conform to it. It is through the symbolic power of GA Resolutions in international relations that one can find a persuasive argument in favor of having them. As an international forum or a 'town meeting of the world', the GA represents the most suitable place for international dialogue and discussion. The Resolutions passed by the GA can then be successfully presented as crystallizing, formulating and expressing the view or opinion of the international community of states.

The Resolutions passed by the General Assembly can have an invaluable influence on the behavior of states and stigmatize or isolate the practice of states that do not conform to it. GA Resolutions, by expressing a 'world opinion', can thus exert considerable pressure for states to take this opinion into account, especially when conducting their domestic or foreign affairs. For example, Resolutions defining or clarifying the meaning of a specific word such as Resolution 3314 on aggression directly reflect this idea of formulating a common view, which then sets 'common standards' that the global community can refer to.

United Nations Resolutions and therefore ICAO Assembly Resolutions share the commonality of reflecting a symbolic gesture by the international community to stigmatize and formally condemn the practice of States which do not abide by fundamental principles that are followed by a rules based order. There is also the political impact that might follow non-adherence of a resolution, although in the ICAO context, some States have freely exercised their prerogative of marking their reservations to ICAO Resolutions in whole or part thereof.

## Chapter 2

# Climate Change

Antonio Guterres, Secretary General of the United Nations, at his opening speech at the 27<sup>th</sup> Conference of the Parties (COP/27) of the United Nations Framework Convention on Climate Change which opened on 7 November in Egypt and attended by 110 heads of State said: “ *We are on a highway to climate hell with our foot still on the accelerator*”. He went on to say “ It is the defining issue of our age..It is the central challenge of our century. It is unacceptable, outrageous, and self-defeating to put it on the back burner. Indeed, many of today’s conflicts are linked with growing climate chaos”. This has all been said before at preceding COPs only, the rhetoric was stronger, perhaps delivered in the hope that it would shock a quiescent world out of its slumber of ineptitude and feckless insouciance. The Secretary General called for “a historic Pact between developed and emerging economies – a Climate Solidarity Pact. A Pact in which all countries make an extra effort to reduce emissions this decade in line with the 1.5-degree goal. A Pact in which wealthier countries and International Financial Institutions provide financial and technical assistance to help emerging economies speed their own renewable energy transition. A Pact to end dependence on fossil fuels and the building of new coal plants – phasing out coal in OECD countries by 2030 and everywhere else by 2040”.

All this is old hat, regurgitated over the years albeit presented in a new format. Hundreds of billions of dollars have been promised by the developed countries to the developing countries as assistance to face the impending disaster which is threatening their ecosystems, food supplies and their very existence as nations on this planet. That has not come yet, but Ibrahim Pam, Climate Expert and Head of the Green Climate Fund expressed enthusiasm that “ there is heavy support for the creation of the Climate Change Support Fund especially for developing Countries”.

There is no gainsaying that in this Anthropocene, climate change is the most serious natural disaster we are facing and that, as agreed in the Paris Agreement of 2015 the world has to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. Furthermore,

one has to agree that the scientific community has approached this issue with vigor and dexterity. However, what strikes one in this confederacy of pomp and circumstance is the diversity of opinion and approach. China and India – two of the biggest users of coal – have given every indication that they intend to keep using coal, let alone reduce their use. Of the big polluters, only Britain and Australia have presented new climate targets. The United States and China have not submitted anything, while the European Union is working on a redefinition of the National Voluntary Contributions to reflect the additional cuts that will result from plans against the energy crisis and to release Russia's gas.

There is also a paradox in the call for a Pact to end dependence on fossil fuels and the building of new coal plants – phasing out coal in OECD countries by 2030 and everywhere else by 2040. This raises questions such as: do the advantages and benefits brought to bear by the use of fossil fuels as sources of energy outweigh the damage caused by fossil fuels?; what would a world without fossil fuels look like in terms of overall living standards and sustenance of human kind? Alex Epstein – an energy expert and founder of the Center for Industrial Progress – in his book *The Moral Case for Fossil Fuels*, while claiming that the use of fossil fuel would grow in the future and that fossil fuel use would only benefit to the flourishing of humanity, far outweighing its negative effects, including negative climate impacts. Epstein asserts that fossil fuels provide low-cost, reliable energy that would serve a world which would exponentially need more energy progressively, and be of tremendous use to the billions who have no energy. Furthermore, low cost fossil fuels would be needed to power machines which are only increasing in output to cope with growing existential demands of the world population and to combat climate change and more importantly, fossil fuels would play a role in the technology that would be the impetus for human ingenuity to control the climate. These claims are further buttressed by the anticipated results of the positions cited – that instead of destroying the world, the use of fossil fuels would make the world a far better place, where billions could be raised out of poverty, giving them a higher quality of life and safety from the hazards wrought by climate change.

As the above discussion unravels, climate change has been the subject of diverse views back and forth, many arguing for green remedies and others arguing that to end the use of fossil fuel use would be counterproductive,

resulting in a serious step backward in development. In the midst of all this are rigorous and robust attempts toward minimizing carbon emissions, just to take the International Civil Aviation Organization<sup>9</sup> as an example in field of aviation. As the Introduction to this book will show, ICAO has taken several measures over the past few decades to introduce proactive steps in the nature of its Assembly Resolutions which, while earning plaudits of many, have attracted criticisms as well. Of these initiatives, a significant initiative of ICAO is the 2016 introduction of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) which is a global market-based measure calculated to offsetting and reducing CO<sub>2</sub> emissions from international flights. Under CORSIA, airlines are required to purchase carbon credits to offset any increase in emissions above 2020 levels.

One of the greatest obstacles to combatting climate change at a global level is the lack of political will, which can be put down to the irresponsible indifference of States. The feckless insouciance of States to come to a cohesive and coordinated unity in acting as one in the battle against global warming acts as a serious obstacle. As of September 2022 Only 38 countries had filed their National Adaption Plans. COP/27 ended with the retention of the 1.5c goal (compared to pre industrial levels) and an agreement on a fund to compensate developing countries for losses and damage caused by the climate crisis. However, the conference failed to agree on concrete steps to wind down the use of fossil fuels.

At the 28<sup>th</sup> session of the Conference of Parties (COP/28) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Dubai in 2023, representatives from the aviation industry expressed their consternation at critiques of the industry's carbon emissions, reiterating their dedication to decarbonization while emphasizing the crucial

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<sup>9</sup> The International Civil Aviation Organization (ICAO) is the specialized agency of the United Nations handling issues of international civil aviation. ICAO was established by the Convention on International Civil Aviation, opened for signature Dec. 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295 (entered into force Apr. 4, 1947) [hereinafter Chicago Convention]. The overarching aims and objectives of ICAO, as contained in Article 44 of the Convention, are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport to meet the needs of the peoples for safe, regular, efficient, and economical air transport. ICAO has 193 member States, which become members of ICAO by ratifying or otherwise issuing notice of adherence to the Chicago Convention.



need for increased support from both governments and the private sector. Emphasizing the diligence of measures taken in mitigation and adaptation by the global aviation community, a spokesperson of ICAO is reported to have said: “We have done so much but we’re terrible at explaining it and announcing it to the world. Please let’s do more outreach, let’s talk about what aviation is doing. Let’s make the world understand where we are because we are so advanced, and sometimes I hear people talking about things we resolved 15 years ago.”

Executives representing the aviation industry at COP/28 underscored the importance of financial assistance to enhance the production of SAF, a critical element for the sector to attain its net-zero target by 2050.

Another strong voice in defense of aviation was Teresa Parejo, head of sustainability at Iberia Airlines, who had drawn attention to the importance of the air transport industry as a necessary catalyst in the global economy: “Sometimes I wonder why the focus is on aviation so much because there are so many other sectors that contribute as much or even more. People need to understand that aviation is critical for the well-being of many countries, even vulnerable ones that depend on tourism. It’s not just people who want to have fun that travel. Aviation creates jobs and wealth and is critical for humanitarian purposes. We are the ones most interested in moving towards sustainability; we want SAF. It is so critical to us because it’s a move from fossil fuels to a sustainable way of transportation – but we need help.”

Dr. Henry Kissinger, in his book *Leadership: Six Studies in World Strategy* says: “ Leaders are inevitably hemmed in by constraints. They operate in scarcity, for every society faces limits to its capabilities and reach, dictated by demography and economy...Any society, whatever its political system, is perpetually in transit...leaders think and act at the intersection of two axes: the first, between the past and the future; the second, between the abiding values and aspirations of those they lead”.

In world affairs, we seem to have reached what Thomas Friedman, The New York Times columnist called the Third Promethean Moment – a moment in time that destabilizes and radically changes the world around us. The two preceding such moments were when the industrial revolution

met capitalism, and States rose to confront the emerging power of Russia in the Baltic region. In this third Promethean Moment, which resonates Lenin's statement that there are decades where nothing happens, and there are weeks where decades happen, brings to bear the need to question what we euphemistically call "the rules based international order", where the operative question is whether there is any one or any entity, or for that matter any concept or principle running the world.

Up until now, at least in bits and pieces, there was a concept running the world, which was the rules based international order. It worked, insofar as the world adhered to this phenomenon, but in the past months and weeks it seems to have faded into oblivion. One could well ask: is this how to run the world? Richard Haas, Head of the Council on Foreign Relations in the September/October 2022 issue of Foreign Affairs says: "On the one hand, the world is witnessing the revival of some of the worst aspects of traditional geopolitics: great-power competition, imperial ambitions, fights over resources".

But that is not all—not by a long shot. These geopolitical risks are colliding with complex new challenges central to the contemporary era, such as climate change, pandemics, and nuclear proliferation. And not surprisingly, the diplomatic fallout from growing rivalries has made it nearly impossible for great powers to work together on regional and international challenges, even when it is in their interest to do so".

The United Nations, with all its well-meaning diligence in confronting world problems, has its own inherent structural issue. On the one hand, Chapter VII of the United Nations Charter gives the Security Council the power to intervene militarily or non-militarily in order to preserve peace in any part of the world.

Authors Dani Rodrik and Stephen M. Walt, also writing in Foreign Affairs suggest a framework for a "better rule based international order" that would comprise four categories of binding agreement between States. "The first category—prohibited actions—would draw on norms that are already widely accepted by the United States, China, and other major powers. At a minimum, these might include commitments embodied in the UN Charter (such as the ban on acquiring territory by conquest), violations of diplomatic immunity,

the use of torture, or armed attacks on another country's ships or aircraft.

The second category includes actions in which states stand to benefit by altering their own behavior in exchange for similar concessions by others. Obvious examples include bilateral trade accords and arms control agreements.

When two states cannot reach a mutually beneficial bargain, the framework offers a third category, in which either side is free to take independent actions to advance specific national goals, consistent with the principle of sovereignty but subject to any previously agreed-on prohibitions.

The fourth and final category concerns issues in which effective action requires the involvement of multiple states. Climate change and COVID-19 are obvious examples: in each case, the lack of an effective multilateral agreement has encouraged many states to free-ride, resulting in excessive carbon emissions in the former and inadequate global access to vaccines in the latter. In the security domain, multilateral agreements such as the Nuclear Nonproliferation Treaty have done much to limit the spread of nuclear weapons. Because any world order ultimately rests on norms, rules, and institutions that determine how most states act most of the time, multilateral participation on many key issues will remain indispensable".

One of the ways in which a more effective approach to aviation and climate change might find more credibility and enforceability would be to strengthen enforceability. This brings to bear the need to consider whether CORSIA and its implementation can fit into a relatively new concept called the Global Administrative Law Theory (GAL) – also sometimes referred to as legal pluralism – which came to light in the first decade of this Century.<sup>10</sup> The GAL Project is focused on an emerging field of research and practice where administrative law-type mechanisms that address issues of transparency, participation, accountability, and review operate within the parameters of global governance.

The GAL theory posits that administrative law and its principles must

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<sup>10</sup> See generally Nico Krisch et al., *Global Administrative Law and the Constitutional Ambition*, in *The Twilight of Constitutionalism?* 245 (Petra Dobner & Martin Loughlin eds., 2010); Peer Zumbansen, *Administrative Law's Global Dream: Navigating Regulatory Spaces between "National" and "International"*, 11 *Int'l J. Const. L.* 506 (2013).

be applied not as a mutually exclusive realm but in conjunction with the principles of international law and other related disciplines. Like domestic administrative law, GAL could be an amalgam of a scholarly approach or methodology and a set of actual norms, “practices,” or activities or mechanisms. In other words, GAL would be a combination of the legal rules, principles, and institutional norms that apply to administration from a global perspective rather than a structure that demonstrates and exhibits a mere intrastate legal and political realm of authority.

However, this book is not only about ICAO. It also delves into the legal and economic principles pertaining to aviation and climate change.

## A. Sustainable Development

In a sense, aviation, climate change and peace in the world are intertwined and integrally linked together. While climate change will seriously endanger peace, not only in a geopolitical sense of the lack of political will in a factious world but also in a possible surge in climate refugees breaking borders, aviation calls for the promotion of friendship and understanding in the Chicago Convention<sup>11</sup> as its central theme in the Preamble. Of the 17 Sustainable developments of the United Nations, Goal 13 is *[T]ake urgent action to combat climate change and its impacts*. At the 27<sup>th</sup> Conference of the Parties (COP/27) held in Egypt in 2022 The Secretary General of the United Nations was both explicit and vocal on the subject of climate change, as the commencement of this book discusses in the *Preface*. Almost contemporaneous with COP/21 in 2021, UN Secretary-General Antonio Guterres launched a report with a vision for the next 25 years entitled *Our Common Goal*. In this Report, which ends up by calling a Summit in 2024 the United Nations Secretary General says: “Owing to unchanged emission levels from human activity, global warming of 2°C will be exceeded during the twenty-first century. Heatwaves, floods, droughts, tropical cyclones and other extremes are unprecedented in magnitude, frequency and timing and occur in regions that have never been affected before.

The Arctic is ice free in the summer; most permafrost is lost, and extreme sea levels occur every year. One million species are on the verge of extinction,

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<sup>11</sup> *Supra*, note 9. Also *infra*, note 316

with irreversible biodiversity loss. More than 1 billion people live with heat that is so extreme that it threatens their lives. Increases in concentrations of greenhouse gases since around 1750 are unequivocally caused by human activities and have led to  $\sim 1.1^{\circ}\text{C}$  of warming between 1850 and 190. We largely agree on what needs to be done. The Paris Agreement is a singular achievement, bringing all nations into common cause to combat climate change and adapt to its effects. To meet the demands of science and the goals of the Paris Agreement, we need the parties and all stakeholders to present more ambitious 2030 national climate plans and deliver on concrete policies and actions aligned with a net zero future, including no new coal after 2021, shifting fossil fuel subsidies to renewable energy and setting a carbon price”<sup>12</sup>.

The Paris Agreement which resulted from the 21<sup>st</sup> meeting of the Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change (UNFCCC) where 195 States were parties to the discussions in Paris on the COP 21 Agreement. This Agreement was accepted in general by consensus, was deposited at the United Nations in New York and opened for one year for signature on 22 April 2016—Mother Earth Day. It is interesting that that the United Nations calls 22<sup>nd</sup> April International Mother Earth Day while the United States calls it Earth Day.

The Agreement entered into force after 55 countries that account for at least 55% of global emissions deposited their instruments of ratification. This happened on October 5, 2016, and the agreement went into force 30 days later on November 4, 2016. The overall aim of the Agreement is to maintain a global temperature rise in the 21<sup>st</sup> century to well below 2 degrees Celsius and to strive to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels, the lower level recognized as a buffer against worst case scenario impacts of climate change. Another important goal of the Agreement is to strengthen the capacity of States to effectively address and mitigate the impacts of climate change.

Article 2 of the Agreement stipulates that the Agreement aims to strengthen the global response to the threat of climate change, in the context of sustain-

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<sup>12</sup> *Our Common Agenda*, Report of The Secretary General, United Nations: 2021. See [https://www.un.org/en/content/common-agenda-report/assets/pdf/Common\\_Agenda\\_Report\\_English.pdf](https://www.un.org/en/content/common-agenda-report/assets/pdf/Common_Agenda_Report_English.pdf).

able development and efforts to eradicate poverty, including by: holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. Article 2.2. is explicit in stating that the Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

The Agreement also recognizes the need to put in place appropriate financial tools in order to achieve the aforementioned ambitious goals with a view to enabling developing states to face the challenges of mitigating climate change at their own pace and in accordance with their own national objectives.

There was considerable hope that the agreement would truly promote sustainable development. UN Secretary General Ban Ki-moon said: “We have entered a new era of global cooperation on one of the most complex issues ever to confront humanity. For the first time, every country in the world has pledged to curb emissions, strengthen resilience and join in common cause to take common climate action. This is a resounding success for multilateralism.”

The critical areas covered by the COP 21 Agreement are: mitigation – reducing emissions fast enough to achieve the temperature goal; a transparency system and global stock-take – accounting for climate action; adaptation – strengthening ability of countries to deal with climate impacts; loss and damage – strengthening ability to recover from climate impacts; and support – including finance, for nations to build clean, resilient futures. The Agreement espouses a long term direction that would enable States to reach a peak in their emissions as soon as possible and continue to submit national climate action plans that detail their future objectives to address climate change.

A UNFCCC Secretariat statement claimed that, in the spirit of the Agreement, 188 countries had undertaken to contribute climate action plans in accordance with the new agreement, which is calculated to dramatically slow the pace of global greenhouse gas emissions. The basic philosophy of the Agreement is that future national plans will be no less ambitious than existing ones, which means these 188 climate action plans provide a firm floor and foundation for higher ambition. It has also introduced nationally determined contributions (NDCs) – updated plans for reducing greenhouse gas emissions – once every five years, which will regularly and consistently improve their strategy towards achieving their overall goals in the long-term.

The Agreement also provides for action to be taken even before 2020 where States are required to continue to engage in a process on mitigation opportunities and will put added focus on adaptation opportunities. Furthermore, since reaching the ambitious target of 1.5°C below industrial levels would mean keeping at least 75% of the current flow of fossil fuels on the ground, and using renewable energy instead, States will raise climate finance up to \$ 100 billion by 2020 that would assist developing countries to develop such energy resources. States will, in this regard, work towards defining a clear roadmap on ratcheting up climate finance to USD 100 billion by 2020 while also before 2025 setting a new goal on the provision of finance from the USD 100 billion floor. A roadmap in this regard will be developed by States. There will also be put in place a robust transparency and accounting system that would allow for special circumstances and respective capabilities of States to be recognized and taken as part of the equation. Support and cooperation are the main themes of this philosophy. The Agreement also strengthens international cooperation on climate-safe technologies and building capacity in the developing world to address climate change.

All States are required to submit adaptation communications, in which they may detail their adaptation priorities, support needs and plans. There is also provision for developing countries to receive increased support for adaptation actions, for which there will be an assessment of the adequacy of this support that will be given. As already mentioned, the Agreement has incorporated a robust transparency framework for both action and support. The framework will provide clarity on countries' mitigation and adaptation actions, as well as the provision of support. At the same time,

it recognizes that Least Developed Countries and Small Island Developing States have special circumstances.

According to the UNFCCC Secretariat, the agreement includes a global stocktake starting in 2023 to assess the collective progress towards the goals of the agreement. The stocktake will be done every five years and the agreement includes a compliance mechanism, overseen by a committee of experts that operates in a non-punitive way. From a technical standpoint, COP 21 addressed a number of issues which go to say that there is now a clear and transparent accounting method for carry-over credits for the second commitment period, creating a clear set of rules; and the first round of international assessment and review process (IAR) that was launched in 2014 was successfully completed. A number of technical and implementation issues related to the existing arrangements on technology, adaptation, action for climate empowerment and capacity building were also successfully concluded.

At the heart of combatting global warming is sustainable development, which has been defined as economic development that is conducted without depletion of natural resources. The United Nations defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

Greta Thunberg, school student at the UN Climate Change Summit, 2018 said: “For 25 years countless people have come to the UN climate conferences begging our world leaders to stop emissions and clearly that has not worked as emissions are continuing to rise. So, I will not beg the world leaders to care for our future...I will instead let them know change is coming whether they like it or not.”

Greta went on to say: “[S]ince our leaders are behaving like children, we will have to take the responsibility they should have taken long ago”. There is a sense of urgency in the statements these youngsters make and a serious concern that the present generation may not be keeping to their own definition of sustainable development: that it is development that meets the needs of the present generation without jeopardizing the needs of the future generations.

The Economist, in an article in its issue of 23 February 2019 entitled After the Deluge talks of a business practice prevalent in the world today called



“climate nonchalance”. This is a voluntary ignoring of risks businesses would face and possible damage they would incur as a result of property damage caused by disasters related to climate change. This kind of indirect “cooking the books” is calculated to prevent loss of value of businesses. The Economist goes on to say: “Last August analysts at Schroders, an asset manager, looked at 11,000 listed global companies and estimated that properly accounting for physical climate risk could on average shave 2-3% off their value. Some sectors would take a bigger hit: utilities and oil and gas stand to lose 4-4.5% (see chart). Some firms face potential losses of up to 20%. Most have no idea of their exposure, suspects Andrew Howard of Schroders”.

The concern of the world is that there will be serious adverse effects on the world if the global temperature goes above 1.5 c of pre-industrial levels during this century. Scientists have opined that if this target is achieved the climate change problem will at least be alleviated. However, the problem with the climate change solutions offered so far is that, although the aim of the Paris Agreement of 2015 - which was entered into by States under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) and which entered into force on 4 November 2016, is to achieve not more than 2 c above pre industrial levels this century and most desirably bring it down to 1.5 c - nothing much has been done to implement a concrete global plan to achieve this target. This makes the characteristics of the Agreement – which are that is universal and legally binding, fair and differentiated, and sustainable and dynamic – open to question.

Despite the lofty statements of cooperation at the Paris discussions, there just seems to be no cohesive political will on a global scale. CNN reports that “current government policies will lead to a global temperature increase of 3.4C in 2100 - well above the committed target of 2C, and certainly enough to cause catastrophic impacts that could threaten the entire future of human civilization...where public pressure to enforce reductions in carbon emissions shows any sign of succeeding, fossil fuels companies pour millions into efforts to squash it. For example, BP pumped around \$12 million into the successful effort to block a moderate carbon tax in Washington state. Overall, fossil fuels companies outspend environmental groups by a margin of 10 to one.” Raz Godelnik, in a comment quoting an initiative called the Carbon Initiative Trackers Assessment states, referring to the assessment: “It shows only two small countries’ efforts are consistent

with the Paris Agreement 1.5°C limit (Morocco, The Gambia) and 4 countries (Bhutan, Costa Rica, Ethiopia, Philippines, and India) are in the range of the 2°C goal.

It is hard to disagree with Godelnik' s recommendations. One of the considerations in handling the problem would be, as the Stern Review of the Economics of Climate Change - released for the Government of the United Kingdom on 30 October 2006 by economist Nicholas Stern – stated, to use comparisons of the current level and future trajectories of the 'social cost of carbon' (the cost of impacts associated with an additional unit of greenhouse gas emissions) with the marginal abatement cost (the costs associated with incremental reductions in units of emissions – and go on the basis that the benefits of strong, early action considerably outweigh the costs. Stern called for one percent of the World's GDP to be allocated to tackle the problem of climate change.

Meanwhile, "what about us"? our youngsters cry. The Convention on the Rights of the Child, adopted and opened for signature, ratification and accession by General Assembly Resolution 44/25 of 20 November 1989 states that the child should be fully prepared to live an individual life in society, and brought up in the spirit of the ideals proclaimed in the Charter of the United Nations, and in particular in the spirit of peace, dignity, tolerance, freedom, equality and solidarity; and that State Parties should take, to the maximum extent of their available resources and, where needed, within the framework of international co-operation, legal and administrative measures to ensure that economic, social and cultural rights of the child are preserved. At the Apex of the Treaty lies Article 6 which emphasizes that States Parties recognize that every child has the inherent right to life and that they will ensure to the maximum extent possible the survival and development of the child.

## **B. Global Trends**

2023 started with a curious blend where, in a world that moved in unprecedented ways in 2022, forced us to hold our breath against the unrelenting winds of change. A bewildered international community witnessed a rules-based international system being upended, almost forcing climate change

and sustainable development to the background. Pre Covid-19 megatrends took a slightly nuanced shift to post pandemic trends. Arbitrary and capricious geo political tactics; our implacable attitude towards climate change and lack of collective commitment; the exponential advance of technology playing to the inexorable strings of Moore's law ( the number of components in integrated circuits doubles every two years); the portentous disaster from nuclear abuse; and unexpected economic shifts, all stare at our faces as we prepare for a new year of hope. Hope that we may gradually get rid of the pandemic threat present and future; hope that the geo political trends will stabilize; and above all that we could have a better standard of living from the base of Abraham Maslov's pyramid of needs to its apex.

Amidst this chaos, the megatrends we have so far identified – which are powerful global transformative forces that affect our existential future and change the global infrastructure, economy, business and society – will still remain. These megatrends are shifting global economy, climate change and resource security, technological change, shifts in demography, social change and choices, population explosion and rapid urbanization, and inter connectivity. All these have shown twists and turns, adding two possible trends which could possibly emerge as mega trends in the near future. These are water scarcity and water wars (which can be identified as corollaries to climate change as well as geopolitics) and the global rise of the middle class.

Before getting to the water crisis, mention must be made of the rise in middle class at the global level adding another twist in megatrends and that is the rise of Africa, and the significant economic shift toward the continent which cannot be relegated to the background anymore. Africa has the fastest growing middle class in the world.

Rana Foroohar, Global Business Columnist and an Associate Editor at the Financial Times, and CNN's global economic analyst says: "Africa has the fastest growing middle class in the world. Sure, we are talking about people spending about \$2-20 a day, but this is a huge increase from only a few years ago. In my mind, Africa is where China was a few decades ago. Massive, unorganized, underutilized, but with a huge untapped potential. Of course there are striking differences in culture, history and social structures (plus Africa is a continent comprising several countries), but they seem to follow a similar path towards growth.

On a same note, China seems to be entering a maturity phase after years of massive growth. Its economy is slowing down, and its population is ageing. People are finally starting to spend more. Frankly, it reminds me a bit of Europe a couple of decades ago”.

The water crisis is mainly due to the unequal distribution of water. Water is crucially essential to human beings. Arguably, water is the essence of human existence, and we can barely survive a few days without access to it. Historically, it is an incontrovertible fact that human societies and civilizations settled in areas that had abundance of water. In the modern world, growing population and the climate crisis are two contributory factors to the acute water crisis we face. Experts at the World Resources Institute have said: “Water is likely to cause the most conflict in areas where new demands for energy and food production will compete with the water required for basic domestic needs of a rapidly growing population”.

Within these megatrends – which take years to unfold – are indicators which are seen in the short term transitioning from year to year with characteristics that are embodied in megatrends. Ruchir Sharma, Chairman of Rockefeller International and Founder and Chief Investment Officer of Breakout Capital, and author of 10 Rules of Successful Nations, in a recent interview unfolded ten indicators. I give below my understanding of what Dr. Sharma said at the interview with the caveat that any error in the erroneous explication of Dr. Sharma’s views are mine alone.

Dr. Sharma began by saying that trends are determined on a decadal pattern, where economic trends evolve decade by decade. In 2023, Dr. Sharma predicts that the United States will peak economically (giving a twist to the megatrend which indicates that there will be an economic shift from the West to the East) while the rest of the world would also rise. Also, in 2023 the top ten companies in the world will struggle in the next decade and small companies will flourish. Dr Sharma sees a potential fall of the big tech companies which will still remain strong but diminish in growth and wealth creation. Next year will also see a trend toward de-globalization where capital, migration and protectionism will take center stage, largely due to populism. The trend that has already started on emphasis being laid on local goods and services will continue, prominent among which will be data localization, again as a corollary to rising nationalism, protectionism,

and surveillance. The end result would be that de-globalization will make way for localization.

Another trend identified is the shrinking working population where a distinct decline in working age population can be observed. There will be fewer people joining the workforce, bringing to bear a negative effect on the global economy where fewer people at work would mean lower growth. Another trend is that there will be changing consumer spending, particularly by the new generation – millennials who are between the ages 22-37 ( the generation gap is chronologically identified as Generation Z- under 21 years of age; Millennials – 22-37; Generation X – 38-55 years, baby boomers – 54-71, and the silent generation – over 72). The new generation will perpetuate new consumption habits based more on experiences rather than material goods. Gaming will be the largest generator of consumption and wealth creation.

Another indicator identified by Dr. Sharma is that populism will surge, and polarization will increase politically notwithstanding that it has already deepened to unacceptable proportions. Added to this disturbing trend will be the undesirable return of inflation due to low growth which will be the result of low employment. The Fourth Estate – the media – will continue to diminish in usage (and perhaps credibility) as people are receiving less news due mostly to the decline in print media. Traditional media, which has been the bulwark of democratization of society will continue to give way to what Dr. Sharma calls the Fifth Estate – online news (such as twitter) which will continue to serve as the more popular medium. Finally, there will be a continuation in the rise of inequality – which President Obama called the defining factor in our lives – as an example of which Dr. Sharma cites India, which had 49 billionaires in 2010 whereas there were 106 billionaires in 2019.

Admittedly, Dr. Sharma, who is an expert on finance and economics, focused more in his areas which inexorably have an impact on all the mega-trends and indicators. To this one might add public health, the resources of which were seriously impeded and impacted to unbearable proportions during the Pandemic. In 2023 one could look forward to a heightened sense of awareness in this area. There are four scenarios to envision as plausible: that the Covid-19 virus might stay on continually, whether in Pandemic form or not; that the Pandemic and the virus will go away like the SARS

virus did; and that, depending on these two scenarios our lifestyles will change; or we would go back to living the way we were.

There are two certainties that the Pandemic would bring to bear in any of these scenarios. These are a health revolution and a communication revolution of sharing information, both of which the world had not seen before in the intensity that they would be present in the future. In this context the generation that would impact the next 5 to 10 years most would comprise the Millennials. Whichever way we go in the scenarios mentioned above, Millennials would take center stage in the health revolution and the communication revolution.

### **C. Trends For Airlines and Airports**

There was much focus at the 2019 ACI-Pacific/World Annual General Assembly, Conference and Exhibition - which is being held in Hong Kong from 2 to 4 April - on the smart use of information technology (IT) to both streamline the air transport experience and to make it safer. IT helps airlines and airports improve their competitiveness by both improving their efficiency and reducing their operating costs. For the most part, airlines now achieve these objectives by migrating their services to Cloud Computing, which Eric Griffith defines in PCMag as “storing and accessing data and programs over the Internet instead of a computer’s hard drive. The cloud is just a metaphor for the Internet. It goes back to the days of flowcharts and presentations that would represent the gigantic server-farm infrastructure of the Internet as nothing but a puffy, white cumulus cloud, accepting connections and doling out information as it floats”. Cloud – which is a buzzword for optimizing services through the IT network – helps airlines in both their connectivity and the improvement of their services to the passengers and other clients they serve.

Airports, in similar vein, use IT applications such as Cloud Computing; Big Data; and the Internet of Things for connectivity and making efficient their information flows. Airports are also tremendously benefitted by the use of IT – in particular Artificial Intelligence (AI) - in developing deep learning algorithms for risk-based assessment of threats posed by potentially dangerous goods and substances. Kevin Riordan, Head of Airports