

LEGAL REGIME OF AIRCRAFT ENGINE EMISSIONS IN NIGERIA: A CRITICAL APPRAISAL

By

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Abstract

Nigeria's legal regime of aircraft engine emissions is a novel area. The first Nigeria Civil Aviation Regulation on environmental protection was enacted in 2015, it is barely a decade since emissions from the aviation sector have been regulated in Nigeria. However, this paper is focused on the legal regime of aircraft engine emissions in Nigeria, appraising the laws that ordinarily should make provisions for comprehensive environmental protection within Nigeria. This paper aims to critically examine the statutory provisions relating to aircraft engine emissions in Nigeria. Findings revealed that laws regulating aircraft engine emissions in Nigeria are basically on certification of aircraft engines, and nothing more. Further discoveries show that Nigeria does not have a carbon emission reduction plan apart from the International Civil Aviation Organisation (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Green-Sky-Green Programme. There is also no action plan for aviation and climate change action. This paper adopted the doctrinal research methodology and it examined laws on aircraft engine emissions in Nigeria. The reduction plan is central and goes beyond the International Civil Aviation Organisation (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Green Sky Green initiative. Nigeria should have an aviation and climate change action plan and implement these plans effectively.

Keywords: Legal Regime, Aircraft engine, Emissions, Nigeria, Critical Appraisal.

1. Introduction

The idea to critically appraise the legal regime of aircraft engine emissions in Nigeria is necessary, this is due to the lack of a clear blueprint for tackling aviation-induced emissions in the aviation sector. A critical appraisal of the legal regime of aircraft engine emissions in Nigeria is important, such importance cannot be overemphasised, in that the nature of law is largely dynamic, it changes as civilisation progresses. For a society to be functional, the laws regulating such a society must be at par with the current trend of civilisation. Thus, the idea of critically appraising the legal regime of aircraft engine emissions is to identify a) lacunas in the law, that is, the area the law did not cover properly; b) the effectiveness and otherwise of the existing laws; c) new areas that must have erupted as a result of civilisation that needs to be regulated, and d) to examine the efficacy of the enforcement mechanisms employed by the law.¹

The Aviation industry is essential to every country's fiscal success and existence. Air travel adds to our quality of life by diminishing the boundaries of the world, it is an important aspect of constant economic expansion, providing job opportunities to millions of people around the world.² Undoubtedly, the

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¹ K A Nwosi, 'Assessment of the Impact of Aircraft Engine Emissions on the Environment: The Case of Nigeria' [2023] 3 (9) *Journal of Environment and Human Right Law* 20.

² I Waitz and Others, *Aviation and the Environment: A National Vision Statement, Frameworks for Goals and Recommended Actions* (Massachusetts Institute of Technology 2004).

aviation industry in Nigeria has successfully added flavours to the Nigerian lifestyle and the world at large. Still, the negative effects that come with it on our environment must and should be curtailed legally by ensuring that aircraft engine missions are properly regulated.³

Section 8 (1) (j) of the Civil Aviation Act provided for the Nigeria Civil Aviation Authority (NCAA) to make regulations for the protection of the environment.⁴ In the discharge of this duty, the NCAA has made several regulations, although the regulation of 2012 did not include environmental protection, the 2015 regulation included environmental protection and currently, the NCAA has adopted the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) as the Civil aviation Regulation 2023.

2. The Nigeria Legal Framework for Aircraft Engine Emissions Reduction.

In accessing the Nigeria legal framework, the 1999 Constitution of the Federal Republic of Nigeria is the first reference point here because the Constitution is the *grund norm*⁵ and as such, every other law derives validity, power and authority from the Constitution⁶. Flowing from the above, the Constitution placed aviation matters under the Exclusive legislative list,⁷ which is within the jurisdiction of the National Assembly and in the exercise of its power; the National Assembly enacted the chief statute, the Civil Aviation Act (CAA) 2022.

In the same spirit, the Constitution under section 20 made a provision that enjoins the states to protect and improve the environment and safeguard the water, air land, forest and wildlife of Nigeria.⁸ The CAA is the main statute regulating aircraft and aviation matters in Nigeria, the CAA established the Nigerian Civil Aviation Authority (NCAA) a body corporate vested with the power to make regulations on aviation issues ranging from aircraft registration, aviation safety and security; air navigation services; commercial air transport, aerodrome and airspace standard and most importantly environmental regulations.⁹

The NCAA under sections 8 (1) (J) ¹⁰Is mandated to make rules and policies on environmental regulation within the Nigerian aviation sector and to ensure that Nigeria is at par with the international community in terms of adopting and implementing ICAO Standards and Recommended Practices. In executing this task, the NCAA made the Civil Aviation Environmental Regulation Part 16 which specifically deals with how to reduce aviation pollution and safeguard the environment. It adopted the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) into the sector.¹¹

³ W Shadare, (2015) Aviation Contributes \$10 Billion to GDP of Nigeria, Others
<<http://www.proshareng.com/news/6810.html>> accessed 5 July 2020.

⁴ CAA 2023, s. 8 (1) (j).

⁵ *Abacha v. Fawehinmi* (2000) 6 NWLR (660) 228.

⁶ CFRN 1999 s1 (3).

⁷ CFRN 1999 Second Schedule, Part II Exclusive Legislative List, Item 3.

⁸ CFRN 1999 s 20.

⁹ CAA 2022 s 8.

¹⁰ *Ibid* s 8 (1) (j).

¹¹ NCAR 2023.

The NCAA launched the Green-Sky-Green, the first Eco-Citizen Flyer Miles programme that arranges incentive-based voluntary Eco-label tokens to mitigate the sector's carbon emission footprint away from the ICAO's CORSIA scheme in Nigeria¹². The Nigerian "Green-Sky-Green programme is a voluntary carbon emission mitigation programme that authorises eco-citizen travellers to grow 10 trees for every domestic ticket and 100 trees for every international ticket purchased in Nigeria.

Apart from the Civil Aviation Act 2022, some laws were enacted in Nigeria mainly for the protection of the environment. As such, provisions ought to be made for the protection of all facets of the environment. This paper shall briefly discuss these environmental laws hereunder.

3. Constitution of the Federal Republic of Nigeria 1999 (As Amended)

The source of environmental protection laws or guiding principles in Nigeria can be traced to the 1999 Constitution of the Federal Republic of Nigeria, as amended (CFRN 1999)¹³ Under the provisions of section 20 of the Constitution, the states are authorised to protect and improve the environment and safeguard the water, air, land, forest and wildlife of Nigeria.¹⁴ The CFRN 1999 guarantees wide-ranging environmental sustainability. This provision is however enshrined under Chapter II of the CFRN 1999 containing the Fundamental Objectives and Directive Principles of State Policy which are unfortunately non-justiciable.¹⁵

Analysis of the above assertion depicts the value Nigeria undertakes for environmental protection and preservation. The federal government perceives the environment as a policy which the State should not ignore; however, the State can ignore the same and no legal consequences will flow from such ignorance since the same is not justiciable. There have been legal issues as to the enforcement of certain environmental rights contained in Chapter II of the Constitution, thus, in *A.G. Ondo v. A.G. Federation*,¹⁶ the Supreme Court held, *inter alia*, that courts cannot enforce any of the provisions of Chapter II of the Constitution until the National Assembly has enacted specific laws for their enforcement, as has been seen in respect of sections 15(5) and 18 of the CFRN 1999. By the Supreme Court's decision, those objectives and directive principles that serve as the constitutional policy of governance continue as a sheer manifesto, which cannot be obligatorily implemented by the legal process but would rather be seen as a failure on the part of the government's duty and responsibility if they choose to act in clear neglect of those provisions.¹⁷ The court further maintained that the directive principles can be made justiciable by legislation. Though not all of the objectives and directive principles.

¹² O Okoroafor, 'NCAA Launches Nigeria's 1st Aviation Environmental Safety Initiative' <<https://sciencenigeria.com/ncaa-launches-nigerias-1st-aviation-environmental-safety-initiative/>> accessed 20 June 2023.

¹³ CFRN 1999, s.20.

¹⁴ CFRN 1999, s 20.

¹⁵ *Ibid*, s 6(6) (c).

¹⁶ [2002] 9 NWLR 222 (PT 512) (SC).

¹⁷ K A Nwosi, 'Critical Review of Laws Regulating Aircraft Engine Pollution in Nigeria' [2023] 17 (3) *Journal of Jurisprudence, International Law & Contemporary Legal Issues*, 118.

Looking at Sections 17 and 20 lures one to inquire as to what was the actual intent of the lawmakers. It is sad to note even though the intent appears to be of good interest to the general public, section 6 (6) (c) of the same constitution has reduced the effect of these provisions. They are non-justiciable because they form part of the fundamental objectives and directive principles of state policies. Analysing Section 20, it is clear that the provisions referred to the responsibility of the state to protect, improve and safeguard the environment. It is important to bring in Section 44 (3) which provides thus:

The entire property in and control of all minerals, mineral oils and natural gas in, under or upon any land in Nigeria or in, under or upon the territorial waters and the Exclusive Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.

Sections 20 and 44(3) read conjunctively infer the constructive role of government to protect the environment and safeguard the natural resources within. Undoubtedly, there appears to be a conflict of interests here, while the government is directly responsible for upholding the rights of all Nigerian citizens, it is also subtly involved in exploiting those rights.¹⁸ It is the submission of this paper that in as much as the government is involved in regulating the fundamental rights of the citizens, it should also regulate the environmental rights of the citizens. The rationale behind this assertion is that environmental rights are now regarded as part and parcel of fundamental rights. Although the Constitution did not place environmental protection under Chapter Four of the Constitution, it has been publicly and judicially noticed that environmental protection is a fundamental right.

Thus, the Supreme Court of Nigeria conjunctively reading sections 20 and 33 of the CFRN 1999 and articles 16 and 24 of the African Charter on Human and Peoples' Rights, in *Centre for Oil Pollution Watch v. NNPC*,¹⁹ held that 'the right to a clean and healthy environment to sustain life is a fundamental human right of citizens and the State, owes the community (represented by the plaintiff) a duty to protect them against noxious and toxicant pollutants from the exploration and production activities of oil companies.'

Furthermore, in a much earlier case of *Jonah Gbemre v. Shell, NNPC and AGF*,²⁰ the Federal High Court of Nigeria ruled that oil companies must stop gas flaring in the Niger Delta due to its environmental pollution impact on the communities' collective survival and its contribution to adverse and potentially life-threatening climate changes, including acid rain. The court further stated that the practice of massive and unceasingly intense gas flaring in the community violates the citizens' fundamental rights to life and human dignity guaranteed in the CFRN 1999 and the African Charter on Human and People's Rights. Although these cases are not directly related to aircraft engine emissions, they can be used as precedents to grant environmental claims of aircraft engine emissions in Nigeria. It is also important to note that Nigeria does not have a reported case of aircraft engine emissions yet. More so, some scholars have opined that Sections 33 and 34 which guarantee fundamental human rights

¹⁸ Nwosi (n 17).

¹⁹ [2019] 5 NWLR (pt. 1666), 518.

²⁰ [2005] FHC/B/CS/53/05.

to life and human dignity respectively, should be linked to the need for a healthy and safe environment to give these rights effect indirectly making environmental rights a fundamental human right.²¹

Section 12 (1), (2) of the 1999 CFRN²² provides that no treaty between the Federation and any other country shall have the force of law except to the extent to which any such treaty has been enacted into law by the National Assembly and that the National Assembly may make laws for the Federation or any part thereof concerning matters not included in the Exclusive Legislative List to implement a treaty. Consequently, any treaty entered into by the federal government which has not been enacted into law or provided for in the Exclusive legislative list shall not have the force of law. It follows that any environmental law or any ICAO Standards and Recommended Practices not enacted into law or adopted and domesticated as law cannot be regarded as law in Nigeria and the same cannot be applicable in curbing the environmental impacts of aircraft engines. From the forgoing Constitutional provision, it can be gleaned that the environmental laws and regulations in Nigeria derive their source from the constitution.

4. The National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2007 (as amended)

The National Environmental Standards and Regulations Enforcement Agency²³ (NESREA) was established by the Federal government of Nigeria in 2007 repealing the then-existing Federal Environmental Protection Agency (FEPA). The Agency is responsible for protecting and developing the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, laws, policies and guidelines.²⁴

By section 7 of the NESREA Act²⁵, the agency is to ensure compliance with existing local laws and international treaties on the environment domesticated by the legislature. The Minister(s) of Environment acting under section 34 of the Act has enacted 24 regulations²⁶ for the protection of the environment of Nigeria. It specifically makes provision for solid waste management and its administration and prescribes sanctions for offences or acts which run contrary to proper and adequate waste disposal procedures and practices. It is the express regulations focused on the protection and sustainable development of the environment.

Section 8 (1) (K) empowers the Agency to make and review regulations on air and water quality, effluent limitations, control of harmful substances and other forms of environmental pollution and sanitation²⁷. According to section 27 of the NESREA Act, without lawful authority, the discharge of

²¹ P Alston, 'Conjuring up new Human Rights: A Proposal for Quality Control.' [1984] (607) *American Journal of International Law*, 614-615.

²² CFRN 1999, s 12 (1) (2).

²³ NESREA Act 2007,

²⁴ *Ibid* s. 2.

²⁵ *Ibid* s 7.

²⁶ *Ibid* s 34.

²⁷ *Ibid* s 8 (i) (k).

hazardous substances into the environment. This offence is punishable under this section, with a fine not exceeding, ₦1,000,000 (One Million Naira) and an imprisonment term of 5 years. In the case of a company, there is an additional fine of ₦50, 000, for every day the offence persists.²⁸

NESREA has issued about 33 national environmental regulations that cut across almost all sectors and human activities that can have negative effects on the environment which have been gazetted into the NESREA Act. The Act which was first enacted in 2007, was amended in November 2018, by the NESREA (Establishment) (Amendment Act) to further empower the NESREA in the protection and development of the environment. The Amendment Act gave the agency discretionary powers and authority to tackle environmental crimes, review the conditions of appointment of some council members, increase penalties and permit the search of premises without warrant.

Sadly, environmental protection of the aviation industry was not provided for directly under the chief environmental statute in Nigeria, unlike its American counterpart, the Clean Air Act (CAA) of the United States of America (USA) is the key environmental statute and it established the EPA, and it made direct regulatory provisions for environmental protection of the aviation sector in America.

For instance, by the provisions of sections 231²⁹ (a)(1) the Administrator is enjoined to within 90 days after the date of enactment of the Clean Air Amendments of 1970, commence a study and investigation of emissions of air pollutants from aircraft to determine: (A) the extent to which such emissions affect air quality in air quality control regions throughout the United States, and (B) the technological feasibility of controlling such emissions. In section 231(a)(2)(A) of the CAA the Administrator of the EPA is directed to, from time to time, propose aircraft engine emission standards applicable to the emission of any air pollutant from classes of aircraft engines which in the Administrator's judgment causes or contributes to air pollution that may reasonably be anticipated to endanger public health or welfare.³⁰

Section 231(a)(2)(B) enjoins the EPA to consult with the Administrator of the Federal Aviation Administration (FAA) on such applicable standards, and it forbids the EPA from altering aircraft engine emission standards if changing same would significantly increase noise and adversely affect safety³¹. Section 231 (3) of the CAA empowers the Administrator to hold public hearings concerning such proposed standards. Such hearings shall, to the extent practicable, be held in air quality control regions which are most seriously affected by aircraft emissions. Within 90 days after the issuance of such proposed regulations, he shall issue such regulations with such modifications as he deems appropriate. Such regulations may be revised from time to time.³² (b) Any regulation prescribed under this section (and any revision thereof) shall take effect after such period as the Administrator finds necessary (after consultation with the Secretary of Transportation) to permit the development and application of the

²⁸ *Ibid* s 27.

²⁹ CAA 1990 s. 231 (a)(1)

³⁰ CAA 1990 s. 231 (a) (2) (A)

³¹ *Ibid* s. 231 (a) (2) (B) (ii)

³² CAA 1990 s.231 (3).

requisite technology, giving appropriate consideration to the cost of compliance within such period. Undeniably, there is a direct regulatory link between the CAA and the Federal Aviation Authority (FAA) and this directly acts as a synergy between the EPA and every other environmental regulatory authority in the US.

It is the view of this paper that the neglect or failure of the NESREA Act to make direct regulatory provisions for the environmental protection of the aviation sector has created a lacuna in the protection of the environment. The Nigeria Civil Aviation Authority is just in the habit of adopting ICAO Standards and Recommended Practices that are basically on engine certification, fuel venting certification and the like. There is no close monitoring of the main regulatory agency to other subordinate agencies for proper environmental protection.

The NESREA as the chief environmental regulatory body in Nigeria ought to regulate aircraft engine pollution alongside the NCAA, the Federal Airport Authority of Nigeria (FAAN) and the National Climate Change Council. This gap and lack of synergy are responsible for the inadequate regulatory mechanisms in the aviation sector and, the lack of a roadmap for mitigating aircraft engine pollution in Nigeria. Virtually most member state of the ICAO has an action plan for aviation and climate change governance, as a guide and working instrument, with the view of reducing the impacts of carbon and other impurities from the aviation sector that contribute to climate change. Nigeria seems to be completely silent on providing an action plan for aviation and climate change. all the environmental regulatory agency needs to work together for the comprehensive protection of the environment.

5. The Civil Aviation Act 2022

The Civil Aviation Act of 2022 established an independent body known as the Nigeria Civil Aviation Authority³³. The actual objective of the Act is to provide for an effective legal and institutional framework for the regulation of civil aviation in Nigeria in conformity with the standards and recommended practices set by the International Civil Aviation Organization (ICAO); establish rules of operation and divisions of responsibility within the Nigerian civil aviation system to promote aviation safety and security; ensure that Nigeria's obligations under international aviation agreements are implemented and consolidate the laws relating to the regulation of civil aviation in Nigeria.³⁴ Section 2 (1) made provisions for the applicability of the Act, that the Act shall apply to all persons holding a license issued or validated by the NCAA; every person; aircraft; air operator; aerodrome' aeronautical product; aerodrome operator; allied aviation services in Nigeria, every Nigerian registered aircraft whether within or outside Nigeria and every foreign registered aircraft operating in, into and out of Nigeria.³⁵

Section 8 outlined the functions of the NCAA and particularly section 8 (1) (j)³⁶ empowered the Authority to issue rules and regulations on aviation environmental protection. In response to the legal duty placed on the Authority, it made several regulations for the effective administration of civil

³³ CAA 2022 s. 4(1).

³⁴ CAA 2022 s. 1 (1)

³⁵ *Ibid.*

³⁶ *Ibid.*

aviation in Nigeria. Accordingly, the Environmental Regulation 2015 was made, and the most recent regulation dealing with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Section 114 of the Act repealed the Civil Aviation Act of No. 6 2006. Despite repealing the 2006, section 115 (1) provides that the repeal of the Civil Aviation 2006 shall not affect anything done under that Act. More so, by subsection (2) every regulation, order, requirement; license, permit; approval; certificate; authorization; notice; directive; decision; advisory circular, all operator's letters; consent, application, request or thing made; issued; given or done under the repealed Act, if in force at the commencement of the 2022 Act, shall continue to be in force and have effect as if made, issued, given or done under the corresponding provisions of the 2022 Act.

It is pertinent to emphasise that the NCAA has made several regulations which are noteworthy, including the 2012 civil aviation regulation, this regulation failed and neglected provisions for environmental protection and was greatly criticised, hence the 2015 regulation which included environmental protection. Part of the objectives of the 2015 Regulations is to ensure that the Nigerian Civil Aviation Regulations are at par with the current modification of the International Civil Aviation Organization (ICAO), responding to the comment acknowledged by stakeholders in the aviation industry through the completion of regulations in the ICAO annexes. Furthermore, the intention is to harmonize functioning procedures, implementation and enforcement in the industry.

The 2015 Regulations³⁷ are made up of twenty different parts providing for several aspects of aviation operation within Nigeria. Part 1 solely deals with the General Policy, part 2 is on Personnel Licensing, part 3 makes provisions for Aviation Training Organization, part 4 enshrines the Registration and Marking, part 5 deals with airworthiness, and part 6 deals with Approved Maintenance organization. Part 7 made provisions for instruments and equipment, part 8 provides for Operations, part 9 part deals with Operator Certification and administration, part 10 talked about Commercial Air transport by foreign air carriers within Nigeria, Part 11 is on Commercial Aircraft Operation used for specialized services, part 12 deals on Aerodrome Regulations, part 14 is on Air Navigation Services, part 15 is about Carriage of dangerous goods by air, part 16 made provision for Environmental Protection Regulations, while part 17 is on Aviation Security, part 18 is about Economic Regulation, part 19 made provision for the Consumer Protection Regulations and last part 20 provides for Safety Management³⁸.

The relevant part of the regulation to this paper is part 16 which provides for Aviation Environmental Protection, A cautious look at part 16 of NCAR 2015 confirms that it was made up of three sub-parts namely, Noise Certification, Prevention of Intentional Fuel Venting and Emission Certification. Part 16.1-16.7 provides for numerous regulatory requirements for noise certification³⁹. Part 16.3.1.4 provides for the maximum noise level allowed for an aircraft operating within Nigeria.⁴⁰ By the regulation the maximum noise levels of those aeroplanes covered by 16.3.1.1(a) when determined

³⁷ NCAR 2015 part 1-10

³⁸ NCAR 2015

³⁹ NCAR 2015 r 16.1.16.7

⁴⁰ NCAR 2015 r 16.3.1.4

following the noise evaluation method of Appendix 1 of ICAO Annex 16 Volume I Part II, shall not exceed at lateral and approach noise measurement points: 108 EPNdB for aeroplanes with a maximum certificated take-off mass of 272 000 kg or over, decreasing linearly with the logarithm of the mass at the rate of 2 EPNdB per halving of the mass down to 102 EPNdB at 34 000 kg, after which the limit remains constant; at flyover noise measurement point of 108 EPNdB for aeroplanes with maximum certificated take-off mass of 272 000 kg or over, decreasing linearly with the logarithm of the mass at the rate of 5 EPNdB per halving of the mass down to 93 EPNdB at 34 000 kg, after which the limit remains constant.⁴¹ While the maximum noise levels of those aeroplanes covered by 16.3.1.1(b), when determined by the noise evaluation method of Appendix 1 of ICAO Annex 16 Volume I Part II, shall not exceed the lateral noise measurement point of 106 EPNdB for aeroplanes with maximum certificated take-off mass of 400 000 kg or over, decreasing linearly with the logarithm of the mass down to 97 EPNdB at 35 000 kg, after which the limit remains constant⁴².

Part 16.18-16.18.2 made elaborate provisions for Vented Fuel Administration on aircraft, its applicability and prevention of international fuel venting by aircraft.⁴³ The same regulation provided that aircraft shall be designed and constructed to prevent the intentional discharge of liquid fuel into the atmosphere from the nozzle manifold, during the process of engine shutdown after normal flight or aircraft operations on the ground. The provision of this subpart applies to all engine-powered aircraft embarking on international flight after 18th February 1982. Certification on Vented Fuel prevention shall be granted by the Nigerian Civil Aviation Authority after providing satisfactory evidence of compliance with aircraft engine requirements.⁴⁴

Irrefutably, it is clear that environmental protection is basically on certification of the nature of the engine to be used by commercial airliners to reduce noise and emissions of other pollutants, particularly carbon emanating from aviation operations.

6. Nigeria Civil Aviation Regulations (Part 16) 2023

The recent aviation regulation is in line with the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). The aim of this regulation is for the NCAA to be at par with the recent development by the ICAO on carbon offsetting and reduction schemes for international aviation. This regulation is made up of 8 parts, part 1 is on the general application of the regulation; Part 2 is on the definitions and abbreviations of terms used in the regulation; Part 3 talks about administration, part 4 is about monitoring, reporting and verifications of aero plane Operator annual Carbon emissions; while part 5 provides for the carbon offsetting requirements from international flights and emissions reductions from the use of (CORIA) eligible fuels, part 6 is on emissions unite and part 7 provides for verification body and national accreditation body while part 8 is on the administrative process.⁴⁵

⁴¹ NCAR 2015 r16.3.1.1

⁴² NCAR 2015

⁴³ NCAR 2015 r 16.18-16.2

⁴⁴ NCAR 2015

⁴⁵ NCAR 2023

The regulation applies to an aircraft operator attributed to Nigeria that produces annual CO₂ emissions greater than 10000 tonnes; and (b) Aircraft Operators (Airlines) with a maximum certificated take-off mass greater than 5 700 kg conducting international flights except humanitarian, medical and firefighting flights.⁴⁶ From the foregoing provision, it is clear that humanitarian, military firefighting and medical aircraft are not within the ambit of the CORSIA, it is strictly for commercial aircraft.

It is also important to note that the regulation provides that an aeroplane operator is considered attributed to Nigeria under part 16 if the aeroplane operator has an ICAO Designator, which is notified by Nigeria; where the aircraft operator does not possess an ICAO Designator but has a valid air operator certificate (or equivalent) issued by Nigeria; or where the aircraft operator does not possess an ICAO Designator or air operator certificate but is registered as juridical person in Nigeria.⁴⁷ This provision extends to where the aeroplane operator is a natural person having residence and registration in Nigeria.⁴⁸

Again, on the issue of monitoring, verification and reporting, the aero-plane operator shall monitor and record its fuel use from international flights by an eligible monitoring method, an aero-plane operator's fuel use monitoring method shall be submitted for approval by The Authority and following approval of the Emissions Monitoring Plan, the aero plane operator shall use the same eligible monitoring method for the entire compliance period.⁴⁹

In furtherance of the aim to achieve a sustainable aviation sector in Nigeria, the regulation made provision for sustainable alternative fuel. Accordingly, the aircraft operator that intends to claim emissions reductions from the use of CORSIA-eligible fuels shall use a CORSIA-eligible fuel that meets the CORSIA Sustainability Criteria as defined within the ICAO document entitled "CORSIA Sustainability Criteria for CORSIA Eligible Fuels"⁵⁰

For the requirement of carbon offsetting, part 5 provides that from 1 January 2021 to 31 December 2035, the offsetting requirements of this Sub-part shall apply to an aeroplane operator with international flights, as defined in r. 16.3.1.3 (b) (1) and r. 16.4.1.1, between States as defined in the ICAO document entitled "CORSIA States for Chapter 3 State Pairs. The requirements of this Sub-part shall not apply to a new entrant aero plane operator for three years starting in the year when it meets the requirements in 16.4.1.1(a) and (c), or until its annual CO₂ emissions exceed 0.1percent of total CO₂ emissions from international flights, as defined in 16.3.1.3 (a) and 16.4.1.1, in 2020, whichever occurs earlier.⁵¹

From the foregoing, one can safely assert that there exists a substantial legal framework for carbon offsetting and reduction schemes for international aviation in Nigeria. The challenge is with the implementation mechanisms put in place by the NCAA for strict adherence to the regulation. The NCAA had gone ahead to launch the Green-Sky-Green, the first Eco-Citizen Flyer Miles programme that arranges incentive-based voluntary Eco label tokens to mitigate the sector's carbon emission

⁴⁶ NCAR 2023 r. 16.1.1

⁴⁷ NCAR 2023 r. 16.2.3

⁴⁸ NCAR 2023 r. 16.3.1.2

⁴⁹ NCAR 2023 r. 16.4.2.1

⁵⁰ NCAR 2023 r. 16.4.2.6 (a)

⁵¹ NCAR 2023 r. 16.5.4

footprint away from the ICAO's CORSIA scheme in Nigeria⁵². The Nigerian "Green-Sky-Green programme is a voluntary carbon emission mitigation programme that authorises eco-citizen travellers to grow 10 trees for every domestic ticket and 100 trees for every international ticket purchased in Nigeria.

The inventiveness will influence forest impact programmes that guarantee biodiversity and ecosystem conservation to prevent desertification and shield wetlands for Sustainable Development Goal (SDG) Goals 14 and 1.⁵³ "The Green-Sky-Green programme pushes for the Fly-2-Green Nigeria Eco-Label Token that is designed as sustainable aviation policy initiative creation for airline operators within the NCAA regulatory gamut to guarantee carbon neutral emission footprint through out-of-sector green marketplace mechanism.⁵⁴ Green-Sky-Green is engineered to launch the first Green Aviation Marketplace programme in Africa and encourage broadminded potentials that benefit the people and the planet via climate smart efficient programmes that guarantee 'green' and 'blue' economic growth for the United Nations Global Green Goals Agenda⁵⁵ Despite the above seeming initiatives by the NCAA, Nigeria is still lagging as international communities propose a series of research centres, developments, and demonstrations to rise above hurdles for the extensive arrangement of low-carbon sustainable aviation fuel (SAF).

Sustainable aviation fuel processed from renewable biomass and waste resources is a new deal and the future of the aviation sector, it is capable of delivering the performance of petroleum-based jet fuel though with an element of its carbon footprint, giving airlines solid footing for decoupling greenhouse gas emissions from flight. At the moment Nigeria does not have any regulation in place or incentives to airlines to reduce their carbon emissions. For instance, domestic airlines do not have a choice on the type of fuel to purchase, that is sustainable aviation fuel. Conversely, other airlines like Green Africa Airways Limited have the kind of aircraft that mirror the likes of Easy Jet and potentially in design and operations which can give a considerably lower carbon emission compared to the other domestic airlines.

7. National Environmental (Ozone Layer Protection) Regulations, 2009, S. I. No. 32.

The drive of this particular regulation is to prohibit import, manufacture, sale and use of substances that deplete the ozone layer such as fire protection equipment and pressurized containers, flexible and rigid insulation foams. The regulation stated the power vested on the Minister of Environment under section 34 of the NESREA (Establishment) Act to make regulations concerning the environmental protection of Nigeria. Part 1 of the regulation enshrined different prohibitions, ranging from the prohibition of ozone-depleting substances; release of such substance is also prohibited; working with such ozone-depleting substance; fire protection equipment; prohibition of the importation, manufacturing, supply and or leasing of the pressurized container with 10kg or less containing an ozone-depleting substance.⁵⁶

⁵² O Okoroafor, 'NCAA Launches Nigeria's 1st Aviation Environmental Safety Initiative' <<https://sciencenigeria.com/ncaa-launches-nigerias-1st-aviation-environmental-safety-initiative/>> accessed 20 June 2023

⁵³ *Ibid*

⁵⁴ Okoroafor (n 52).

⁵⁵ *Ibid*

⁵⁶ NEOLPR 2009. S. I. No. 32

Worthy of note at this point is that regulation 5 (2) made some exceptions to the general provisions when it stated that: The provision of sub-regulation (1) of this regulation does not apply to a pressurised container which is used to contain (a) a prescription drug (b) a topical anaesthetic; (c) a bronchial dilator; (d) a veterinary powder wound spray; (e) a cytospray or (f) a spermicidal contraceptive foam.⁵⁷ The regulation further made provisions prohibiting the sale of ozone-depleting substances, prohibiting the installation of equipment that does not have a permanent label indicating the type of ozone-depleting substance and oil it contains; prohibition of flexible insulation foams and rigid insulation foams; packaging and wrapping materials.

From the foregoing provisions of part one of the regulation, we can glean that there are no express provisions relating to aircraft engine pollution in Nigeria or prohibiting ozone-depleting substances emanating from the aviation industry. The only provision relating to the aviation sector is Regulation 4 which mentioned aircraft when it provided that

No person shall import, manufacture, install, offer for sale, sell or buy new fire extinguishing equipment that contains or is intended to contain an ozone-depleting substance with an ozone-depletion potential greater than 0.05. (2) The provision of sub-regulation (1) of this regulation does not apply in the following circumstances (a) uses of fire extinguishing equipment for fire protection in an aircraft.⁵⁸

The responsibility of the agency is being spelt out under Regulation 11, Part Two and Part Three deals solely with matters relating to permit conditions application fees for permit, bi-annual reports by permit holders, permit numbers to be shown on records, offences for handling ozone depleting substance refrigerant, possession or trading in refrigerant, an offence for possessing halon.

A critical analysis of the above provision reveals that the aviation sector was not the intendment of the drafters of this regulation. Pollution emanating from the aviation industry contributes largely to the depletion of the ozone layer yet this regulation failed and or neglected to make provisions to mitigate emissions from the sector. Besides the stipulation of regulation 4 (2) (a) and the interpretation regulation defined vehicle to include aircraft, the word was never mentioned again in the regulation. One may be correct to assert that the main focus of the drafters of this regulation is basically on other industries which also contribute to the depletion of the ozone layer.

8. National Environmental (Noise Standards and Control) Regulations, 2009

The reasons for this Regulation are to: ensure the maintenance of a healthy environment for all Nigerians, the tranquillity of their surroundings and their psychological well-being by regulating noise levels, to elevate the standard of living of the people by prescribing the maximum permissible noise levels a facility or activity to which a person may be exposed; providing for the control of noise and mitigating measures for the reduction of noise.

⁵⁷ NEOLPR 2009 r. 5.2

⁵⁸ NEOLPR 2009 r. 4

It also provides for issues relating to permit and its revocation for noise over permissible levels; enforcement challenges covering general action for noise, noise control orders, power to confiscate machinery, restitution of property, guidelines for noise from plant or machinery and codes of practice; general matters relating to exclusion from liability, offences, interpretation.

This regulation did not make any provision for the aviation sector even though the word ‘aircraft’ was not used at all by the regulation even the interpretation regulation did not define vehicles to include aircraft.

It follows that aircraft in Nigeria can emit any level of noise since no regulation or law sets a particular standard for the level of noise that will emanate from the aviation sector. This lacuna account for the incessant noise from the airports in Nigeria, it has been observed that noise pollution produced by any aircraft or its components, during various phases of flight⁵⁹ is very dangerous to human health and the environment yet, the regulation on noise standard and control failed to mention noise from the aviation sector.

9. Climate Change Act 2021

The Climate Change Act 2021 (CCA) offers a regulatory and legal framework for attaining the long-term climate change goals in Nigeria, which encompasses a net-zero carbon emission target, adequate climate financing, environmental and economic accountability, and prioritizing climate change actions for national development priorities. The CCA is structured into eight parts of thirty-six sections and a schedule. It applies to institutions and agencies of government as well as private and public entities,⁶⁰ and compulsory mandates them to adhere to all governmental regulations on climate change.⁶¹ It sets the years 2050-2070 as the target period to achieve net-zero carbon emissions. To achieve this aim, the prioritization of climate change adaptation, finance, national climate resilience and focus on other climate change combating policies.⁶²

The CCA establishes the National Climate Change Council as a body saddled with the responsibility of implementing Nigeria’s climate change action plan.⁶³ The council shall be headed by the President as its chairman, the Vice President as its vice chairman and a cross-section of other stakeholders in government which include the Ministers of Environment, Budget and National Planning, Power, Transportation, Petroleum Resources, Agriculture and Rural Development, Water Resources among others.⁶⁴

One would have thought that the Federal Ministry of Aviation and Aerospace Ordinary should make the list of ministries that form part of the Climate Change Council because the aviation sector contributes to climate change. The need to harness ideas from all regulatory sectors cannot be overemphasised, the Ministry of Aviation needs to be included in the provisions of section 5 of the CCA. Instead of adding

⁵⁹ W. Shodare, “Aircraft Noise Pollution: Is there a Solution in Sight?” accessed November 30, 2022, <<http://ihuanedo.ning.com>>

⁶⁰ CCA 2021, s 1 (I).

⁶¹ *Ibid* s 2.

⁶² *Ibid* s 1 (a-i).

⁶³ *Ibid*, s 3 (1).

⁶⁴ CCA 2021, s.5 (1) (a-u).

reasonable ministries that will work in synergy to achieve zero carbon emissions that result in climate change, the CCA decided to add the likes of the Ministry of Women Affairs. This paper wonders the connection between the Ministry of Women's Affairs and climate governance.

The council is empowered to perform several functions, which amongst others include the mobilisation of finance for climate change adaptation,⁶⁵ overseeing the country's carbon tax regime,⁶⁶ And implementation of the country's climate change plan.⁶⁷ In furtherance of the objective of the Council, the CCA also established a secretariat to be headed by the director-general, which shall aid the Council in the performance of its duties and objectives.⁶⁸ The CCA saddles the Federal Ministry of Environment with the responsibility of setting up the Country's carbon budget and budgetary period.⁶⁹ To keep the average increase in global temperature within 2°C and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.⁷⁰ The budgets usually have a five-year circle put in place, with an overall aim of ensuring that Nigeria achieves its net-zero carbon emission target between 2050-2070. Each budget circle is to be submitted to the Federal Executive Council for approval before implementation.⁷¹

The CCA also establishes a climate fund to be administered by the council.⁷² The fund is to be funded by budgetary allocations by the National Assembly, and fines obtained from entities found to have breached the provisions of the Act.⁷³ And other funding sources to be prescribed by the council from time to time.⁷⁴ Amongst several objectives, the overall intent of the fund is to aid climate change mitigation and adaptation.

The CCA mandates the secretariat to set up an action plan lasting a five-year circle.⁷⁵ The plan amongst other things will ensure Nigeria's emissions are in tandem with her carbon budgets, proffering guides for the achievement of the nation's climate goals and ensure the climate-proofing of national infrastructure, that is the process of ensuring that various infrastructure such as buildings remain usable even as the environment changes.⁷⁶ The first carbon budget is to be submitted no later than 12 months.⁷⁷ Subsequent carbon budgets are to be submitted for approval not later than 1 month before the end of the date of the expiration of the current budget cycle.⁷⁸

⁶⁵ CCA 2021, s 4 (h).

⁶⁶ *Ibid* s 4(b).

⁶⁷ *Ibid* s 4(a).

⁶⁸ *Ibid* s 7(1).

⁶⁹ *Ibid* s 19(1), (b) (i).

⁷⁰ *Ibid* s 19(1) (a).

⁷¹ *Ibid* s 19(2).

⁷² *Ibid*, s 15(1).

⁷³ *Ibid* s 15 (1),(d)

⁷⁴ *Ibid* s 15 (1),(f)

⁷⁵ CCA 2021 s. 20(1)

⁷⁶ *Ibid* s 4 (a),(b)

⁷⁷ CCA 2021, s 19(2)

⁷⁸ PIA 2021, s 19(3)

In ensuring compliance with the provisions on carbon emission reduction, it imposes varying degrees of required compliance from entities in government agencies and private entities alike. The MDAs⁷⁹ are mandated to adhere to stipulated carbon budgets,⁸⁰ as failing to do so attracts the sanctioning of principal officers or the imposition of fines as determined by the council.⁸¹ Private entities are to put in place measures to achieve annual carbon emission reduction,⁸² required to submit annual reports to the secretariat of the council detailing their efforts adhering to stipulated carbon budgets as well as their climate adaptation plans.⁸³

Critically looking at these provisions, it is obvious that the aircraft engine emissions were not mentioned neither was there any section of the law that mentioned the Ministry of Aviation as a sector to be part of the Council. This may account for the reason the Nigerian aviation sector does not have an action plan for aviation and climate change. Unlike other jurisdictions where aviation climate actions are being proposed and implemented.

For instance, the United States of America pledged in 2021 to come up with an action plan which is targeted at Net-Zero GHG emissions from the aviation sector by 2050.⁸⁴ The procedures adopted in achieving aviation net-zero GHG emissions from the aviation sector in the U.S include the following: a) New Aircraft Technologies; b) operational Improvements; c) Sustainable Aviation Fuel (SAF) Uptake; d) Airport Initiatives and Climate Resilience; e) on-CO₂ Climate Impact Initiatives. These action plans can be adopted by the aviation sector in Nigeria, as a measure of mitigating emissions from aviation.

10. Conclusion and Recommendation

Nigeria's legal regime of aircraft engine emissions is very novel, however, there are laws regulating aircraft engine pollution in Nigeria, but these laws are not synergised with the chief environmental law, thereby creating regulatory lapses. It is the submission of this paper that adopting ICAO's SARPs without more is not enough to curtail the impact of aircraft engine emissions on our environment, not doing more than just adopting the SARPs will render the original intendment of the regulation nugatory. Undeniably, other states are making efforts to reduce the impact of aircraft engine emissions that result in climate change, we have a climate change law (CCA) that does not synergy with the aviation sector to see how ideas can be harnessed to reduce the carbon footprint on the environment which contributes to climate change. It is recommended that Nigeria's aviation sector work with the National Climate Change Council to harness ideas, Nigeria's aviation sector should come up with an action plan for aviation carbon reduction and climate change, this way there is a roadmap to reducing the impacts of aviation emissions.

⁷⁹*Ibid* s 35 defines MDA as Ministries, Departments, or Agencies of the Federal Government of Nigeria

⁸⁰*Ibid* s 22 (4)

⁸¹ CCA 2021 s 22 (5).

⁸²*Ibid* s 24 (a).

⁸³*Ibid* s 22 (3) (a), (b)

⁸⁴ United States 2021 Aviation Climate Action Plan