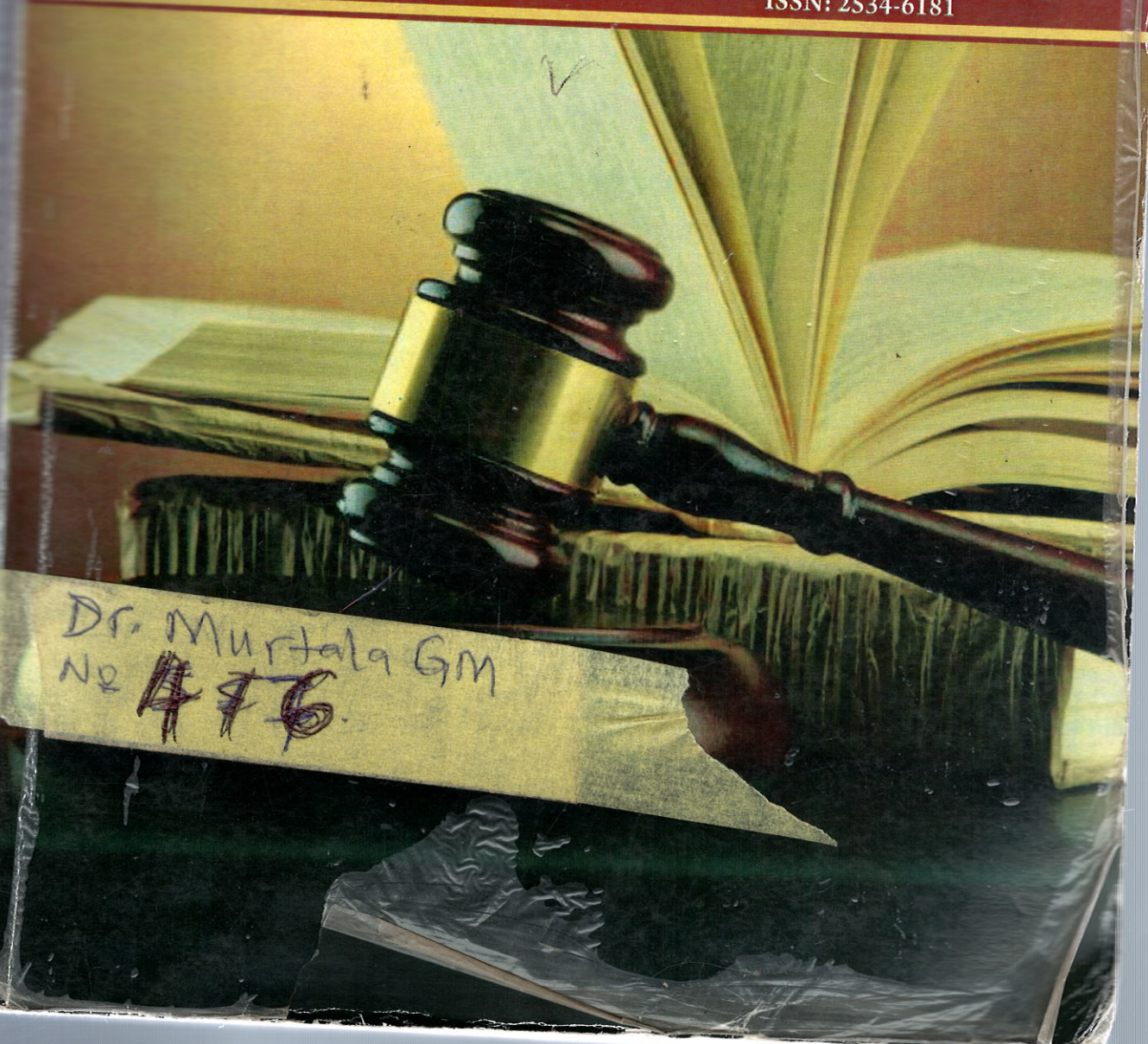




UNIMAID JOURNAL OF PRIVATE AND PROPERTY LAW

(VOL. 1, No.1)

ISSN: 2534-6181



Dr. Murtala GM
No ~~1~~ ~~7~~ ~~6~~

TOWARDS ENSURING RIGHT TO CLEAN AIR AND SUSTAINABLE AVIATION: AN ANALYSIS ON THE CHALLENGES OF IMPLEMENTING INTERNATIONAL REGULATIONS ON REDUCTION OF AVIATION EMISSION IN NIGERIA

By

Murtala Ganiyu Murgan*

1.0 INTRODUCTION

Aviation emission is the gaseous substance emitted by air craft and aerospace engines as a result of their combustion activities. Aviation emission impacts greatly on the environment because aircraft engines emit gases and other substances that negatively affect the environment and contribute to climate change. Emission from aircraft is produced from the fuel burnt in the main aircraft engine and the engine powering the auxiliary power units. The carbon products from the engine combustion comprise of greenhouse gases and other pollutants of Carbon dioxide which is emitted into the air large quantity with Nitrogen oxide and carbon monoxide. These belong to the green-house gases while there are other pollutants such as unburnt hydrocarbons (HC), Nitrous oxide, water vapour, soot aerosol, sulphate aerosol, methane, and volatile Organic Compound (VOC) are also emitted into the air with adverse effects on the environment.⁵³¹

Aviation can be explained as a process of transportation of passengers and cargo by aircraft and helicopters, it can also be explained as a transportation system that involves movement or carriage of persons and goods through the use of airplane or helicopter.⁵³² From the above, it can therefore be said that, provision of aviation services in Nigeria entails the process of Transporting passengers and cargo by aircraft and helicopters.

Worldwide, aviation transportation has been increasing steadily, largely due to globalization of world economy and economic growth which have made air transportation affordable for a large number of populations in the world.⁵³³ The increase in growth of air transportation has led to increase in volume of aviation emission being discharged on the earth surface. This emission however, caused severe consequences on the global environment, in form of pollution of the atmosphere, stratosphere and lithosphere with high level of greenhouse gases like carbon dioxide, carbon monoxide, nitrogen oxide and others.⁵³⁴ It should be noted that aviation emission constitutes the fastest growing source of anthropogenic green house emission.⁵³⁵ This is because aviation emission from annex 1 countries⁵³⁶ rose by 67% between 1991 and 2005

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⁵³¹David Freestone and Charles Streck, *The Legal Aspect of Carbon Trading, Kyoto, Copenhagen and Beyond*, (Oxford University Press, 2009), 27.

⁵³²Suleiman I. Ladan "An Analysis of Air Transportation in Nigeria" Vol. 10 NO 2 (2012), AJOL Info Journal, 1.

⁵³³Clay Bourne, Fox Clerk, and Thiago Chagas, "Aviation And Climate Change Regulation," in *Legal Aspects of Carbon Trading: Kyoto, Copenhagen, and beyond*, ed. David Freestone and Charlotte Streck (OUP Oxford, 2009), 27.

⁵³⁴Ibid.

⁵³⁵Ibid.

⁵³⁶Annex 1 countries are the industrialised countries that are members of Organization for Economic Cooperation and Development (OECD), including countries in Economies in Transition i.e the US, the Baltic States, Japan, the Russian Federation and Eastern European States. Annex II countries however consist of OECD members but not members of Economic Transition. They are practically engaged in activities involving promotion and transfer of environmental friendly technologies such include

and is estimated to rise by as much as 90% when aviation emissions from non-annex 1 countries⁵³⁷ are included for the period.⁵³⁸ It has also been observed that about 3% of both the United States and European Union's (EU) total greenhouse gas emission are from aviation emission. The E.U has forecasted that current growth in trend of emission from international flights using E.U's airports will increase by over 150% over 1990 level.⁵³⁹ Further, it has been observed that the share of aviation to total global transportation emission is larger if non carbon dioxide emissions are added.⁵⁴⁰ The overall impact of aviation emission is however; potentially double in the case of aircraft in the air because aircrafts emit greenhouse gases directly into the atmosphere.⁵⁴¹

The impact of aviation emission on the environment is said to be more evident in correlation between increase in carbon dioxide (CO₂) emission and increase in average temperature observed over entire planets.⁵⁴² Therefore, scientific studies have suggested that reducing global emission by 50 to 80 percent below 1990 levels by year 2050 is necessary in order to stabilize the climate and avoid most destructive impacts of climate change.⁵⁴³

Nigeria, being one of the countries involved in aviation transportation and a member of the International Aviation Organization (ICAO), also shares from the impact of aviation emission on her environment. Although, Nigeria claims not to be one the great aviation emitters like the developed countries, reports have shown that Nigeria's national and international air travel markets expanded over the years with corresponding volume of aviation emission being released.⁵⁴⁴ Reports have equally shown that some parts of Nigeria especially the coastal areas have been experiencing the impact of global warming emanating from effect of aviation emission.⁵⁴⁵ This has thus brought about the need for Nigeria to join the international legal response to reduction of aviation emission. Besides, the boundless nature of emission and the integrated nature of international civil aviation mean that effective action on global reduction of aviation emission requires committed efforts of all countries in the world. As such, Nigeria should take a serious action on reduction of aviation emission in order to have a clean and sustainable environment.

In realisation of the impact and consequences of increasing aviation emission on the environment, the international community responded to the adverse atmospheric effects of aircraft engine emission in two ways: One approach was to control aviation emission through ratification of international conventions and protocols by member states. The notable convention and protocol for this are the United Nations Framework Convention on climate

Australia, Belgium, Greece, Denmark, Sweden, Switzerland etc.. See United Nations Framework Convention on Climate Change <unfccc.int/parties_and_observers/items/20704.php> accessed 2/2/2016.

⁵³⁷ Non Annex 1 Countries are mostly developing countries that are vulnerable to adverse effect of Climate Change. See United Nations Framework Convention on Climate Change <unfccc.int/parties_and_observers/items/20704.php>, accessed 2/2/2016.

⁵³⁸ Ibid., 28.

⁵³⁹ McCollum, Gould, and Greene, "Greenhouse Gas Emissions from Aviation and Marine Transportation: Mitigation Potential and Policies," The Pew Centre on Global Climate Change <www.C2es.org/docuploads/aviation_and_marine_report_2009.pdf> accessed April 10, 2009.

⁵⁴⁰ Ibid.

⁵⁴¹ Ibid.

⁵⁴² Ibid.

⁵⁴³ Ibid., 6.

⁵⁴⁴ IkechiUkoh "Experts; Nigeria Fastest Air Travel Market In Africa," This day Newspaper, September, (Lagos, 27, 2013), 3.

⁵⁴⁵ B. a Usman and A. M Tunde, "Climate Change and Sustainable Development in Nigeria, Planning for Climate Resilient Cities" in Wahab O. Egbewole, Muhtar Adeiza Etudaiye and Olugbenga Ajani Olatunji (University of Ilorin 2011) 117-118.

change, UNFCCC (1992) and the Kyoto protocol to the UNFCCC (1997).⁵⁴⁶ Under Public International Law principle, such convention and protocol are to be signed, ratified and domesticated by member states that adopt common law practice before they become implemented as part of the domestic Acts of a state.⁵⁴⁷ The other approach has been to address reduction in aviation emission directly from air craft engines through the regulatory regime of International Civil Aviation Organization (ICAO). The regime include the Standard Recommended Practices on air craft engines (SARPs) and other regulations contained in annexe 16 volume II of the Chicago Convention 1944. The ICAO regulations equally need adoption into national regulations for the purpose of implementation by member states, in line with ratified convention.

The ICAO is the global organization responsible for regulation of international civil aviation. Its functions include making laws on international standard and best practices in aviation, which are to be implemented among member states. Based on this approach, the International Civil Aviation Organization (ICAO) has since June 1981 adopted a continually updated international standard and recommended practices on aircraft engine emission in exercise of its laws making power under article 37 of the Chicago Convention on International Civil Aviation 1944. The SARPs contained in annex 16 Vol. II call for prevention of international oil venting and established standard for air craft emission control. Added to this, annex 16 volume II of Chicago convention limits certain aircraft emission through engine certification process, depending on the age and type of aircraft. It also established highly technical process for measuring emissions. The emissions under ICAO control include, smoke, hydro carbon, carbon dioxide(CO₂) and Nitrogen Oxide (NO₂) from new engines.⁵⁴⁸

The existing law and regulations on aviation environment protection practice in Nigeria are contained in the Nigerian Civil Aviation Policy 2013, The National Environmental Standard Regulations Enforcement Agency Act 2007(NESREA), and Nigerian Civil Aviation Act, No 6, 2006 and Nigerian Civil Aviation Regulations 2012, Vol.1&11. The general expectation is that if international regulations are properly implemented in these national regulations, they will serve a lot to effect reduction in aviation emission and guarantee safe and sustainable environment in Nigeria. However, these national law and regulations have been observed to lack commitment for implementation of international regulations on reduction of aviation emission.⁵⁴⁹ The NESREA Act 2007, the Nigerian Civil Aviation Act 2006 and the Nigerian Civil Aviation Regulation 2012 are known not to effect implementation of international law on reduction of aviation emission while the newly updated Nigerian Civil Aviation Regulations 2015 is said to merely incorporate the provisions of ICAO international standard and recommended practices without much commitment to actual implementation of international law on reduction of aviation emission.. The overall effect of the above is that it becomes easy for various types of aircraft to continue to discharge emission excessively on the environment

⁵⁴⁶ Yaw Otu Mankata Nyampong, "The Regulation of Aircraft Engine Emissions from International Civil Aviation" (LLM Thesis McGill University, 2005), 3.

⁵⁴⁷ Abdul Ghafur Hamid @ Khin Maung Sein, *Public International Law: A Practical Approach* (Sweet & Maxwell Asia, 2011), 78.

⁵⁴⁸ Ibid..

⁵⁴⁹ See Oyetouna F. Adegbesan, Assistant GM Multilateral/Aviation Unit, Nigerian Civil Aviation Authority ,Lagos, interview conducted by the researcher at (NCAA Lagos, Nigeria on 14 October 2014).

in Nigeria without sanction. This type of bad situation will continue to have serious environmental consequences like global warming, flood, climate change, and diseases on Nigeria. The objectives of this paper are therefore, to identify and discuss the problems of implementation of international regulations on reduction of aviation emission by the Nigerian Civil Aviation Authority and make recommendation for overcoming this.

2.0 THE CONCEPT OF IMPLEMENTATION

Implementation can be explained as an act of putting a plan into action or starting to use a plan.⁵⁵⁰ It is also defined by Oxford English Dictionary, as the process of putting a plan into effect.⁵⁵¹ Therefore, the process for implementing the provisions of UNFCCC, the Kyoto Protocol and the ICAO regulations on reduction of aviation emission in Nigeria, will not only involve that such international conventions and regulations be adopted, ratified and domesticated by the legislative assembly in Nigeria, but also include their application and utilisation by respective agencies in Nigeria.

2.1 NCAA AND IMPLEMENTATION OF INTERNATIONAL REGULATIONS ON REDUCTION OF AVIATION EMISSION IN NIGERIA

The Nigerian Civil Aviation Authority (NCAA) is saddled with the authority as the chief regulator of the aviation industry in Nigeria in accordance with the power given to it by the Civil Aviation Act 2006.⁵⁵² The Federal Government of Nigeria provides the Civil Aviation Act 2006 which gives the NCAA the power to regulate the aviation industry. It also gives the Federal Ministry of Aviation the responsibility for setting and providing policy on civil aviation carrying out other international related negotiations and agreements for the country.⁵⁵³

2.2 The Department of Air Transport Regulations

The department of air Transport Regulation is one the departments under the Directorate of Air Transport Regulation in NCAA. The department consists of four units such as bilateral unit, Commercial agreement unit, licensing unit and Multi- lateral unit. Its functions include attending multilateral meetings and submit report. Treating letters from ICAO and attending to any other assigned duties.⁵⁵⁴

This writer observed during the course of field work conducted in the NCAA's office in Lagos on the issue of implementation of international Legal regime on reduction of aviation emission in Nigeria, that the responsibility for regulation of aviation environment is presently assigned to the Multilateral/ Aviation Environment unit of the Department of Air Transport Regulation (DATR).⁵⁵⁵ It is also observed that this unit is currently carrying out regulatory responsibility on reduction of aircraft noise but it does not discharge any regulatory responsibility on reduction of aviation emission. However, the unit claimed it is aware of this important omission and its presently working hard on how to put in place necessary regulatory provision

⁵⁵⁰ <Dictionary Cambridge.org/dictionary/English/implement> viewed 22/12/2015.

⁵⁵¹ Oxford Dictionary www.oxforddictionaries.com/definition/english accessed 22/12/2015.

⁵⁵² See the Civil Aviation Act No 6, 2006 section 30.

⁵⁵³ See The Federal Government of Nigeria National Aviation Policy, 2013, 3

⁵⁵⁴ Civil Aviation Authority Regulations 2012, on Air Transport Operation.

⁵⁵⁵ Oyetouna F. Adegbesan, Asst GM, Multilateral/Aviation Unit, Nigerian Civil Aviation Authority, Lagos, interview conducted by the researcher at (NCAA Lagos, Nigeria on 14 October 2014).

that will enhance reduction of aviation emission in Nigeria in line with ICAO international standards and regulations.⁵⁵⁶

3.2 The Issue on Implementation of International Legal Regime

As regards the issue of implementation of International Legal Regime (UNFCCC, Kyoto Protocol and ICAO regulations) on reduction of aviation emission by the Nigeria Civil Aviation Authority. It is observed that Section 12 of the Constitution of Federal Republic of Nigeria 1999, made it possible to domesticate the UNFCCC Convention and the Kyoto Protocol to make them become applicable legislation in Nigeria. This is based on the fact before any international legislation can become law in Nigeria, it must have been sanctioned by the legislative arm of Nigerian Government in accordance with the relevant provisions of the Constitution of Federal Republic of Nigeria. The fact in the above is further elucidated in Section 12 of the Constitution states:

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.⁵⁵⁷

Having met the constitutional requirement above, the UNFCCC 1992 and the Kyoto Protocol 1997 therefore, have force of law in the Nigerian legislation and the international convention and protocol are expected to be implemented accordingly. It should however be noted that the aim of these UNFCCC Convention and Protocol include the reduction of Greenhouse gas emission in many sectors of life to which aviation sector is also inclusive. It is therefore expected that the implementation of the above convention and Kyoto Protocol will facilitate reduction of greenhouse emissions in the aviation sector.

However, findings from the report of interview conducted on the senior officers of the Nigerian Civil Aviation Authority Lagos, show that there is no provision for reduction of aviation emission and as well as general sector emission in the Nigerian Civil Aviation Regulations 2012. It is also observed that there is no implementation of the UNFCCC and Kyoto Protocol since the absence of emission reduction in the NCAA Regulations also negates the opportunity for implementation of the UNFCCC Convention of 1992 and the Kyoto Protocol 1997.⁵⁵⁸ The above goes to show that even though the UNFCCC Convention and Kyoto Protocol are domesticated in Nigeria, they are not implemented in the aviation sector in Nigeria. Currently, the UNFCCC and Kyoto Protocol are the umbrella under which many different efforts proceed on mitigation of climate change. It is hereby submitted that the current position of lack of response to implementation of UNFCCC Convention and Kyoto Protocol is inimical to achievement of global efforts on mitigation of climate change which aviation emission is fast becoming a cause.

On the issue of implementation of ICAO regulations as contained in Annex 16 Vol. II of Chicago Convention 1944, it is the responsibility of the NCAA to ensure implementation of ICAO Convention and regulations including those in the annexes. Article 30 of the Civil Aviation Act 2006, specifically gives enormous power to the Nigerian Civil Aviation Authority (NCAA) to make regulations for implementing all provisions in the ICAO

⁵⁵⁶Ibid.

⁵⁵⁷The Constitution of the Federal Republic of Nigeria 1999, Section 12 (1).

⁵⁵⁸Eyitayo Yusuf, Airworthiness, Aircraft Certification and Continue Airworthiness Officer, Nigerian Civil Aviation Authority. Lagos, interview conducted by the researcher, (NCAA Lagos, Nigeria on 13/10/2014).

Regulations (Annex 16 Vol. II Chicago Convention 1944) and recommend practices adopted and contained in the Annex to the Chicago Convention⁵⁵⁹. ICAO's Annex 16 Vol. II of Chicago Convention 1944 contains specific Standards for aircraft engine emission which is known as ICAO emission Limitation Standards. This limits emission of Carbon dioxide, Carbon monoxide, Hydrocarbons (unburned) and oxide of Nitrogen from large turbo jet and turbo fan engine intended for subsonic propulsion and manufactured after 1st January 1986. It also requires Aircraft Engine Emission Certification, it prohibits venting of raw fuel to the atmosphere from all turbine engine powered aircraft manufactured after 18th February 1982.⁵⁶⁰ In line with the provision of Section 30 above, the NCAA is expected to implement ICAO's International Standard Regulations as contained in Annex 16 Vol. II by ensuring that respective airlines meet up with ICAO's specification and requirement on Aircraft Engine Emission Limitation Standard on Carbon dioxide, Carbon Monoxide, Hydro Carbons and Oxide of Nitrogen Aircraft Engine Certification and Venting of Raw fuel. An assessment of compliance by NCAA with implementation of ICAO regulations on reduction of aviation emission however shows that there is no implementation of ICAO international Standards on the following:

1. On compliance and implementation of ICAO's Aircraft Emission Limitation Standards, the information collected confirmed that there is no compliance by NCAA and no implementation of ICAO Aircraft Emission Standards in the Civil Aviation Regulations 2012.⁵⁶¹
2. On compliance with Aircraft Engine Certification, the reports show that there is no compliance on Aircraft Certification at the NCAA and there is no implementation of aircraft engine certification in the Nigerian Civil Aviation Regulations 2012.⁵⁶²
3. On compliance with ICAO's regulations on Venting of raw fuel this process involves discharge of raw fuel through the aircraft tank to the atmosphere. This international regulation on venting of raw fuel is equally not implemented by the Civil Aviation Authority. Based on the above, it is specifically submitted that generally, there is no compliance with the ICAO's International standards and regulations on reduction of aviation emission in Nigeria. Not only that, it is also observed that there is no provision for reduction of aviation emission in the Nigerian Civil Aviation Regulations 2012. What is only contained in Part 16 of the NCAA Regulations 2012 on protection of aviation Environment, is the legislative provision for Aircraft Noise Control. However, it is recently observed that the newly released Nigerian Civil Aviation Regulations 2015 is updated to include provisions for regulation of aircraft emissions, a careful consideration shows that the new regulations is just a mere incorporation of provisions on aircraft emission as no effort has so far been reported on actual implementation. As already remarked, this position of non- implementation of ICAO's international Regulations on reduction of aviation emission in Nigeria poses a threat to reduction of aviation emission, reduction in global warming and mitigation of Climate Change

⁵⁵⁹ See Article 30, The Civil Aviation Act 2006.

⁵⁶⁰ See ICAO Standards And Recommended Practices (SARPs) Annex 16 Vol II of Chicago Convention 1944.

⁵⁶¹ Oyetouna .F. Adegbesan, AGM Multilateral/Aviation Environment Unit, Nigerian Civil Aviation Authority, Lagos interview conducted by the researcher, (NCAA Lagos Nigeria on 13 October, 2014).

⁵⁶² Stephen Musa, Head of Aviation Environment Unit, Nigerian Civil Aviation Authority, Lagos, interview conducted by the researcher, (NCAA Lagos Nigeria on 14 October, 2014).

on the environment in Nigeria generally. From International perspective, the above position of poor response to implementation of international regulations on reduction of aviation emission is found not to be in line with the requirement of the International Civil Aviation Organization (ICAO) which calls for effective implementation of ICAO International Standard and Regulations by member states.

4.0 THE CHALLENGES FACING IMPLEMENTATION OF INTERNATIONAL LEGAL REGIME IN NIGERIA.

The major challenges facing the Nigerian Civil Aviation Authority on the implementation of International Legal Regime on reduction of aviation emission include lack of priority for reduction of aviation emissions, low level development of international aviation transportation, problem of gathering data on aircraft emission, lack of specific legislation on reduction of aviation emission, lack of aviation emission standards experts, lack of equipment for measuring aviation emission level and lack of finance. These factors will be discussed in the following ways:

a. Lack of priority for reduction of aviation emission

Lack of priority for reduction of aviation emission has been identified as one of the challenges facing the Nigerian Civil Aviation Authority on implementation of international legal regime on reduction of aviation emission. According to the general feedback received from the interview conducted on senior and top level officers of the Nigerian Civil Aviation Authority Lagos on the issue of aviation emission, the Nigerian Government places more priority on aviation safety and aviation security in view of the past bitter experience of Nigeria on air crashes and threats to aviation security, rather than on reduction of aviation emission. It is also explained that the attention presently given to aviation environment in the Nigerian Civil Aviation Regulation is only focused on Aircraft Noise Pollution and not aircraft emission.⁵⁶³

Further, it is mentioned that aviation emission is just an emerging issue for Nigeria and does not constitute a priority to Nigeria and Africa until when the International Civil Aviation Organization started to complain about the global effects of aviation emission on the environment and started making effort to handle issues on reduction of aviation emission. It is said that in order to clarify this issue with ICAO, Nigeria and Africa have presented a common front at ICAO session that African countries should be exempted from compliance with international regulations on reduction of aviation emission since its emission level is below one Diminimis.⁵⁶⁴ Nigeria and Africa fall below 1% diminimis for emission standard threshold and should be excluded from keeping to international emission reduction programmes according to the International Civil aviation Authority, until the recent global demand by ICAO at its concluded 38 ICAO Session in 2011⁵⁶⁵ in Rio, that aviation emission constitutes a

⁵⁶³ Olayinka F. Adegbesan, AGM Multilateral/Aviation Environment Unit, Nigerian Civil Aviation Authority, Lagos, interview conducted by the researcher, (NCAA Lagos, Nigeria on 14 October 2014).

⁵⁶⁴ See Texas Commission on Environmental Quality which explains "Diminimis" as the minimum standard permit for air quality level or a minimum threshold for emission to be made. Qualification for diminimis means there will be no significant contamination of the air. <https://www.tceq.texas.gov/assistance/air/deminimis.html> 2014.

⁵⁶⁵ ICAO 38 Session was held in October 2011 with Assembly Resolution A37-19 on states Action plan for CO₂ emission reduction activities and to assist states to voluntarily prepare and submit action plan by June 2012. See Assembly 38 Session Report of the Executive Committee on Agenda Item 17 on Climate change ICAO A38wp/430, www.icao.int/938/Documents/wp/wp430.en.pdf accessed 3/2/2016.

global threat and there should be a reduction in Carbon dioxide, Carbon monoxide, Oxides of Nitrogen, hydrocarbons and others, as well as improving aviation emission level by 2% by 2020 and calling on African countries to join.⁵⁶⁶ It is said that Nigeria and African states voluntarily joined so as to obey the pressures from ICAO. The above are therefore the reasons given on why there has been no regulation on reduction of aviation in the NCAA Regulations 2012 and part of the challenges facing NCAA on implementation of international legal regime on reduction of aviation emission in Nigeria.

b. Problem of Gathering Data on Aircraft Emission

The problem of gathering data on emission made by aircraft is found to constitute another challenge to NCAA on implementation of international legal regime on reduction of aviation emission. This is because the NCAA is presently handicapped on how to gather data and have access to data on fuel uplift and fuel burnt by aircraft on international flight for the purpose of determining the percentage of emission made by airlines.⁵⁶⁷ ICAO is interested in the data of emission made by local airlines that engage in international flight because each country is expected to take care of the emission made by its indigenous airlines. Presently, the NCAA looks up to Arik Airline and the Aero Contractors Airline to supply data on emission made from their flights. Arik Airline is presently the only indigenous airline that flies to New York and London while Aero Contractors fly to many African countries. However, unstable airline operation on international route and lack of equipment are known to be affecting the efforts of Arik Airline and Aero Contractors on providing emission data.⁵⁶⁸ Therefore, inability to gather aircraft emission data and have access to such data as explained above continues to serve as a serious challenge to NCAA on implementation of International Legal Regime on reduction of aviation emission. Presently, the NCAA has no data on reduction of aviation emission and no meaningful implementation of ICAO international regulations can take place if no data is available.

c. Lack of specific Legislation on reduction of aviation emission

Lack of specific legislation on reduction of aviation emission is another serious challenge to implementation of International Legal Regime on reduction of aviation emission by the NCAA. The reason for this is because presently, no legislative provision for reduction of aviation emission is included in the Nigerian Civil Aviation Regulation 2012. This lack of specific legislation on reduction of aviation emission is seriously affecting efforts on implementation of International legal Regime on reduction of aviation emission because without the provision of national legislation for reduction of aviation emission in the Nigerian Civil Aviation Regulations, there will be no basis for implementation of ICAO international regulations on reduction of aviation emission.⁵⁶⁹ However, it can be seen that NCAA has agreed to set up a committee for development of State Action Plan on reduction of aviation

⁵⁶⁶Oyetouna .F.Adegbesan, AGM Multilateral/Aviation Environment Unit, Nigerian Civil Aviation Authority Lagos, interview conducted by the researcher,(NCAA Lagos, Nigeria on 15 October 2014).

⁵⁶⁷Stephen Musa, Head, Aviation Environment Unit, Nigerian Civil Aviation Authority, Lagos, interview conducted by the researcher, Lagos, Nigeria on 16 october,2014.

⁵⁶⁸Ibid.

⁵⁶⁹IllitrusAhmadu, Chief Legal officer, NCAA, Lagos, interview conducted by the researcher, Lagos, Nigeria on 15 october, 2014.

emission.⁵⁷⁰ The aim of the committee will be to ensure legislation on reduction of aviation emission is included in the Nigerian Civil Aviation Regulations 2012.

d. Lack of aviation emission standards experts

Lack of aviation emission standards experts is also a challenge to NCAA on implementation of International Legal Regime on reduction of aviation emission. This is because the process of quantifying aviation emission involves using trained experts who can handle issues adequately but presently, the NCAA claimed that it does not know how to quantify aviation emission and does not even have trained experts who can handle it.⁵⁷¹ The NCAA plans to rely on the service of Arik Airline on issues involving supply of data on aviation emission and it is currently relying and accepting certification processes carried out on aircraft from other countries outside Nigeria.⁵⁷² Lack of aviation emission experts as explained above therefore explains why it has become a challenge for NCAA to implement International Legal Regime on reduction of aviation in Nigeria.

e. Lack of equipment

Lack of equipment for measuring aviation emission standards is another impediment to implementation of ICAO International Standards on reduction of aviation emission in the sense that, the NCAA requires to have specialised technology and equipment to track down aviation emission but it does not have.⁵⁷³ Absence of these specialised equipment definitely serves as a discouragement to the efforts of NCAA at implementing the International Legal Regime on Reduction of aviation emission.

f. Low level of Participation in International Aviation Transportation

Nigeria has relatively low level of participation in international aviation transportation compared to countries like US and UK with high level international participation in international aviation transportation.⁵⁷⁴ It is said that while the aviation authorities in US and the UK have several number of their aircraft engaged on international transportation, Nigeria presently has only Arik airline and Aero Contractors.⁵⁷⁵ The involvement of these two airlines will not warrant the need for Nigeria to be fully involved in implementation of international aviation emission regulation. The above factor therefore, serves as hindrance to involvement of NCAA in implementation of International legal Regime on reduction of aviation emission in Nigeria.

g. Inadequate funding

For Nigerian Civil Aviation Authority to be effectively involved in the programme of implementing International Legal Regime on reduction of aviation emission.⁵⁷⁶ It is expected to buy modern day specialised equipment for tracking aviation emission. Such equipment is

⁵⁷⁰ Christian P. Kwasau, Air safety Inspector, Airworthiness Department, NCAA, Lagos, interview conducted by the researcher. (Lagos, Nigeria on 15/10/2014).

⁵⁷¹ *Ibid.*

⁵⁷² Stephen Musa, Head of Aviation Environment Unit, NCAA, Lagos, interview conducted by the researcher. (NCAA, Lagos, Nigeria on 14 October 2014).

⁵⁷³ Zakariyahu Hassan, Aeronautical Information Officer, National Airspace Management Agency (NAMA) Ilorin Office, interview conducted by the researcher at (Ilorin, International Airport, Nigeria on 6 October 2014).

⁵⁷⁴ Oyetouna F. Adegbesan, Asst. GM, Multilateral/Aviation Unit Nigerian Civil Aviation Authority, Lagos, interview conducted by the researcher at (NCAA, Lagos on 14 October 2014).

⁵⁷⁵ *Ibid.*

found to be expensive while the Nigerian Civil Aviation Authority is not rich enough to procure the equipment.⁵⁷⁷ From the above, inadequate funding is a challenge to the implementation of International Legal Regime on reduction of aviation emission.

5.0 CONCLUSION

From the above, the challenges of the Nigerian Civil Aviation Authority on implementation of International Legal Regime on reduction of aviation emission are found to include the problem of gathering data on aircraft emission, lack of specific legislation on reduction of aviation emission, lack of aviation emission standard expert, low level participation in international aviation transportation and inadequate funding. Having identified the general poor state of compliance with implementation of International Legal Regime on reduction of aviation emission and the attendant challenges, it is hereby recommended positive actions should be taken by the Nigerian Civil Aviation Authority towards overcoming the problems of implementation of international regulations on reduction in aviation emission. More importantly, there should be a change of attitude towards treating this issue of implementation of international regulation on reduction of aviation emission as a matter of top priority by the Nigerian government and not on voluntary basis. This is necessary in order to wade off the impact of global warming from the environment in Nigeria.