CLIMATE CHANGE IN UGANDA: LEGAL, POLICY AND INSTITUTIONAL FRAMEWORKS

BY

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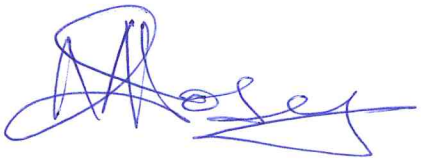
DECLARATION

This Research Project is my original work and has not been presented or submitted for examination in any other university or institution. Where other works have been used, reference has been duly provided.



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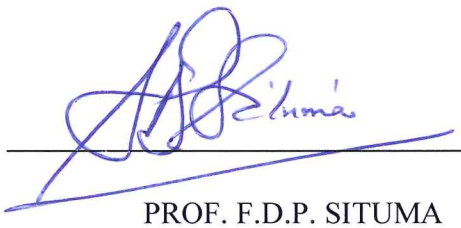
DATED.....23rd November.....2021

This Research Project has been written and submitted for examination with my approval as the candidate's supervisor.



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To Lord Almighty who has blessed me with the spirit of hard work and focus.

To my late mum and dad who inculcated in me the spirit of patience and perseverence.

To my dearest loving husband and children.

LIST OF ABBREVIATIONS

CCI	Uganda Commission on Climatology
CCPC	Uganda Climate Change Policy Committee
CCR	Uganda Centre for Constitutional Rights
CDM	Clean Development Mechanism
CERS	Uganda Centre for Economic and Social Rights
CERs	Certified Emission Reductions
CFCs	Chloroflorocarbons
CH_4	Methane
CNDPF	Uganda Comprehensive National Development Planning Framework
CO_2	Carbon dioxide
CoP	Conference of Parties
EAC	East African Community
EEA	European Environment Agency
ERI	Earth Rights International
FiT	Feed-in-tariff
FORRI	Uganda Forestry Resource Research Institute
UNGA	United Nations General Assembly
GCOS	Global Climate Observing System
GHG	Greenhouse gases
HFCs	Hydrofluorocarbons
ICCTC	Inter-Institutional Climate Change Technical Committee, Uganda
IEA	International Energy Agency
IES	Institute for Environment and Sustainability, Uganda
IPCC	Intergovernmental Panel for Climate Change
LDCF	Least Developed Countries Fund
LDCs	Least Developed Countries
MAAIF	Uganda Ministry of Agriculture, Animal Industry and Fisheries

MEA	Multilateral Environmental Agreement
MSOP	Movement for the Survival of the Ogoni People
N_2O	Nitrous oxide
NAADS	Uganda National Agriculture Advisory Services
NATO	North Atlantic Treaty Organization
NDC	Nationally Determined Contributions
NFA	Uganda National Forest Agency
NGOs	Non-governmental organizations
NNPC	Nigeria National Petroleum Company
OECD	Organization for Economic Cooperation and Development
PCE	Uganda Policy Committee on Environment
PFCs	Perfluorocarbons
PROVIA	Programme of Research on Climate Change Vulnerability, Impacts and Adaptation
RTF	Uganda Rural Transformation Programme
SDM	Sustainable Development Mechanism
SERAC	Uganda Social and Economic Rights Action Centre
SF_6	Sulphur hexafluoride
SPDC	Shell Petroleum Development Corporation
SPPA	Standardized Power Purchase Agreement
UBOS	Uganda Bureau of Standards
UIA	Uganda Investment Authority
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
USA	United States of America
WCASP	World Climate Applications and Services Programme
WCDMP	World Climate Programme to include the World Climate Data and Monitoring Programme

WCIRP	World Climate Impact Assessment and Response Strategies Programme
WCP	World Climate Programme
WCRP	World Climate Research Programme
WCSP	World Climate Services Programme
WMO	World Meteorological Organization

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1992 Rio Declaration on Environment and Development, A/CONF.151/26; reprinted in *31 ILM 874.*

1992 United Nations Framework Convention on Climate Change, May 9, 1992; 771 *UNTS.* 107.

1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997; 2303 *UNTS.* 162.

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CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

Climate change, as a complex phenomenon with widespread impacts on societies, economies, and the planet, continues to be one of the greatest global concerns of the 21 century.[1] Its main causes include excessive accumulation of greenhouse gases in the earth's atmosphere.[2] Mainly driven by human activities, the greenhouse gases (GHGs), include methane, water vapour, carbon dioxide, tropospheric ozone, and nitrous oxide. GHGs allow short wave radiations from the sun to pass through the atmosphere, but trap the long wave radiations escaping from the earth. The trapping of long-wave radiations causes an increase in average atmospheric temperature, a process often termed as global warming.[3]

Besides an increase in average global temperatures, scientists have associated climate change with change in rainfall pattern, receding ice caps and glaciers, and increase in ocean temperature and acidity.[4] Although these ramifications appear to have a transboundary character,[5] countries that suffer the most are developing and least developed countries with limited technical expertise and financial resources to adapt to climate change.[6]

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[1] Birnie Patricia W. Alan E Boyle and Catherine Redgwell, *International Law and the Environment* (3rd edn, Oxford University Press 2009) 335. See also Randall S. Abate. Elizabeth A. Kronk, 'Commonality Among Unique Indigenous Communities: An Introduction to Climate Change and its Impacts on Indigenous Peoples,' in Randal S. Abate and Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham, 2013), p. 3; Michael Grubb, "Seeking Fair Weather: Ethics and the International Debate on Climate Change," in Aynsley Kellow & Sonja Boehmer-Christiansen (eds), *The International Politics of Climate Change* (An Elgar Research Collection, Cheltenham 2010) 463.

[2] Philippe Sands, *Principles of International Environmental Law (*3rd edn, Cambridge University Press 2012) 274.

[3] Deepa Badrinarayana, 'Introduction to International and Domestic Climate Change Regulation,' in Randal S. Abate and Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham 2013) 20.

[4] Susan Solomon, Richard Alley, Jonathan Gregory, *et al*., "A Closer Look at the IPCC Report," 319 Science. 2008 409-410.

[5] Sonja Boehmer-Christiansen, 'Introduction: The International Politics of Climate Change: Learning from Failure or Failing to Learn?' in Aynsley Kellow and Sonja Boehmer-Christiansen (eds), *The International Politics of Climate Change* (An Elgar Research Collection, Cheltenham 2010) xv.

[6] Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham, United Kingdom 2006) 39; Deepa Badrinarayana, 'Introduction to International and Domestic Climate Change Regulation,' in Randal S. Abate & Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham 2013) 21.

The process of climate change is attributed to a number of contributors, namely, the emissions of carbon-related gases from burning of fossil fuels, land and agricultural uses, such as deforestation and emission of methane, and global emission of chlorofluorocarbons.[7]

In a bid to stem the deleterious impacts of climate change, the United Nation General Assembly in 1988 declared climate change a "common concern to mankind" and recommended to member states the formulation of a universal framework to address it.[8] The move gained traction with the help of scientific reports of the Intergovernmental Panel on Climate Change (IPCC). IPCC was established by World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) and endorsed by General Assembly under Resolution 43/53.[9]

The 1992 United Nations Framework Convention on Climate Change (UNFCCC), which entered into force in 1994, aims to curb GHGs concentration in the atmosphere to a level that would avert perilous anthropogenic interference with the climate system.[10] The level was to be determined within timelines that would allow natural adaptation of the ecosystems and ensure sustainable food production and economic growth.[11]

Although the United Nations Framework Convention on Climate Change (UNFCCC) is praised for pioneering the international climate change regime, it was not the first instrument to address atmospheric pollution. In 1979 and 1985, the European Convention on Long-range Transboundary Air Pollution[12] and the Convention on the Protection of Ozone Layer were adopted.[13] The former encouraged parties to limit, prevent and gradually reduce air pollution, while the latter, termed as the most successful treaty of all times, obligated states parties to proactively act on measures to safeguard human health and the environment against adverse effects that are likely to modify the ozone layer.[14]

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[7]Philippe Sands, *Principles of International Environmental Law* (3rd edn Cambridge University Press 2012) 275.
[8] A/RES/43/53.
[9] Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham, United Kingdom 2006) 7; See also Peter D Cameron, 'History of Climate Change Law and Policy,' in Paul Q Watchman (eds) *Climate Change: A Guide to Carbon Law and Practice* (Globe Law and Business, London 2008) 24.
[10]United Nations Framework Convention on Climate Change 1992, article *2*. < http://www.unfccc.de/> (accessed on 14/4/2021).
[11] Ibid.
[12]Convention on Long-range Transboundary Air Pollution 1979; *1302 UNTS 217*. <http://www.unece.org/env/env_eb.htm> (accessed on 14/4/2021).
[13]Vienna Convention for the Protection of the Ozone Layer 1985, *UNEP Doc. IG.53/5*; *26 ILM 1529 (1987).*
[14] Ibid, article 2.

The United Nations Framework Convention on Climate Change (UNFCCC) is construed as the meeting point between states that sought emission reduction targets and timetables and those that merely wanted a skeleton that would inform future protocols. It also amplified the purview of climate change by establishing commitments to stabilize greenhouse gases, financial mechanism by certain developed countries for adaptation,[15] important guiding principles,[16] implementation and dispute settlement mechanism.[17]

In 1995, the Conference of Parties met in Berlin to discuss the inadequacy of the commitments put forward under Article 4 of United Nations Framework Convention on Climate Change. The Berlin discussions culminated in the adoption of the Kyoto Protocol in 1997 by the 3rd Conference of Parties.[18] The Protocol was not intended to introduce new commitments, but to simply commit Annex I countries to quantified emission limitations and reduction targets within a given timetable.[19] Specifically, it required developed party states to cut their GHGs by 5.2% from their 1990 heights by 2012.[20]

Unlike the United Nations Framework Convention on Climate Change, the Kyoto Protocol introduced an array of novel innovations. These innovations are summarized as the three 'flexible mechanisms',[21] namely, the clean development mechanism,[22] emission trading,[23] and the joint implementation.[24]

Notwithstanding the progress made by the Kyoto Protocol in introducing legally binding commitments on developed countries, the Protocol failed in a number of ways.[25] Significantly, the Protocol failed to attract the ratification of the greatest emitters, like the

[15] United Nations Framework Convention on Climate Change 1992, article 11; Deepa Badrinarayana, 'Introduction to International and Domestic Climate Change Regulation,' in Randal S. Abate & Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham 2013) 24.
[16] United Nations Framework Convention on Climate Change 1992, article 3.
[17] Ibid, article 14.
[18] Kyoto Protocol to the United Nation Framework Convention on Climate Change 1997. < http://www.unfccc.de/> (accessed on 14/4/2021).
[19] Ibid, article 3; Philippe Sands, *Principles of International Environmental Law* (3rd edn Cambridge University Press 2012) 285. See also Patricia Birnie *et al*, *International Law and the Environment (*3rd edn Oxford University Press, Oxford, 2009), p. 361.
[20] Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham 2006) 103.
[21] Patricia Birnie *et al*, *International Law and the Environment* (3rd edn Oxford University Press 2009) 361. See also Phillipe Sands, *Principles of International Environmental Law (*3rd edn Cambridge University Press 2012) 287; Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham, 2006) 173-4; Peter D Cameron, 'History of Climate Change law and policy,' in Paul Q Watchman (ed) *Climate Change: A Guide to Carbon Law and Practice* (Globe Law and Business, London, 2008) 28.
[22] Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, article 12. *FCCC/CP/1997/L.7/Add.1.*
[23] Ibid., Article 17.
[24] Ibid., Article 6.
[25] Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham 2006) 104.

USA,[26] who were deeply obsessed with the absence of binding obligations on developing countries. Ironically, emissions in developing countries, such as China and India, have increased by more than 100%, making the possibility of future emission reduction harder.[27] Secondly, the Protocol did not become operative until more than halfway through the 1990-2012 period; leaving little room for implementation.[28]

Under Article 22, the United Nations Framework Convention on Climate Change stipulated for its ratification and acceptance by states and regional economic integration organizations. Uganda ratified the Convention on 8th September 1993, and it came into force for the country on 21st March 1994. Uganda is also a party to the Kyoto Protocol of 1997 and 2015 Paris Agreement,[29] which have majorly impacted the discourse of climate change.

By being a State party to the Convention and its Protocol, Uganda signified its readiness to comply with the provisions laid down in these international instruments. Uganda is required to take action under its legal framework to discharge its international obligations and is expected to draw up policies, laws and institutional frameworks that help in implementing the requirements of the Convention.

Uganda must follow the provisions of the United Nations Framework Convention on Climate Change to the letter. The country is one of the African nations that are dependent on agriculture for their social and economic development.[30] It experiences adverse weather changes, such as floods, landslides, droughts and drying rivers, all of which are calamities that are attributed to climate change.[31] For example, the heaviest rains ever documented in 1994, and associated with El-nino phenomenon,[32] occasioned a sharp rise in lake levels, extensive floods, damage to costly infrastructure, extensive soil erosion and landslides.[33] It is vital to state that issues of climate change require holistic policies, backed by the rule of law, good governance and good institutional framework.

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[26] Ibid. 168. See also Deepa Badrinarayana, "Introduction to International and Domestic Climate Change Regulation," in Randal S. Abate & Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham 2013) 27.
[27] Edward A. Page, *Climate Change, Justice and Future Generations,* (Edward Elgar, Cheltenham 2006) 174.
[28] Patricia Birnie *et al, International Law and the Environment* (3rd edn Oxford University Press, Oxford, 2009) 362.
[29] FCCC/CP/2015/10/Add, 1 (Jan 29, 2016).
[30] Medhanit A Abebe, "Climate Change, Gender Inequality and Migration in East Africa," 4 Washington Journal of Environmental Law and Policy 104 (2014), 106.
[31] Ministry of Water and Environment 2015, Uganda National Climate Change Policy, p. 1-2.
[32] Mabasi Thadeus, "Review of the Policy and Legal Framework for Implementing Clean Development Mechanisms Projects in Uganda and its Implications for Climate Change Mitigation," 4 Law Environment & Development Journal 149, (2008), p. 151.
[33] Ibid.

1.2. Statement of Problem

Although Uganda has made concerted efforts towards addressing climate change challenges, including some legal and policy frameworks, these are yet to be fortified with an enabling climate law to ensure consistency and complementarity in the different efforts to mitigate the impacts of climate change in the country.

The lack of such enabling legislative framework has made measures taken, including Clean Development Mechanism (CDM) and voluntary carbon markets, to have limited effects in addressing climate change challenges in the country. The opportunities presented by these mechanisms are critically undermined by a lack of human resource capacity and inadequate funding devoted to climate change-related activities. Further, the implementation of climate change measures solely depends on the willingness of respective states parties to incorporate internationally agreed norms into their domestic plans and actions underpinned by appropriate laws.

Although Uganda has expressed this willingness through the recently adopted National Climate Change Policy,[34] and National Development Plan,[35] success is still hampered by the sectoral approach, which is characterized by weak institutional capacities to deal with the emerging challenges of climate change and competing institutional priorities for these limited financial resources. Further, with the current sectoral approach, Uganda finds it difficult to collate and consolidate climate change data and file reports effectively.

This thesis, thus, seeks to investigate whether the current sectoral approach towards climate change in Uganda has compromised the progress expected in addressing climate change and in doing so, it will also identify other reasons why Uganda experiences climate related problems despite ratification and domestication of the climate change treaties.

[34] Ministry of Water and Environment, Uganda National Climate Change Policy 2015.
[35] Republic of Uganda, Second National Development Plan (NDPII) 2015/16 – 2019/20.

1.3. Hypothesis

Uganda's inability to effectively implement the International Climate Change Regime into its national framework is attributed to, namely, Uganda's sectoral approach, limited capacity in the sectoral institutions, inadequate financing and lack of public awareness.

1.4. Research Questions

The present research aims at addressing the following questions:

1. What are Uganda's obligations under international climate change regime?
2. What are the legal, policy and institutional frameworks in Uganda aimed at addressing climate change and its negative impacts?
3. How effectively have the legal, policy and institutional frameworks addressed climate change in Uganda?

1.5. Theoretical Framework

This research is guided by the concept of climate change as elucidated in the United Nations Framework Convention on Climate Change (UNFCCC)[36] and its subsequent agreements, namely, the Kyoto Protocol,[37] and the Paris Agreement.[38] The agreements furnish this study with the theory of climate change adaptation and mitigation, new green marketing paradigm, global warming, the concept of sustainable development, and common but differentiated responsibilities.

The principle of common but differentiated responsibilities will be discussed in the context of justice as espoused by Aristotle[39] and John Rawls.[40] According to Aristotle, justice manifests either as "corrective" or "distributive". While "corrective" focuses on rectification of the disharmony that has existed between parties, the latter focuses on distribution of resources between individuals.[41] In the context of climate change, the United Nations Framework Convention on Climate Change adopts a distributive approach by positing that developed

[36] 771 UNTS 107.
[37] 2303 UNTS 162.
[38] FCCC/CP/2015/10/Add, 1 (Jan 29, 2016).
[39] Brian Bix, *Jurisprudence: Theory and Context*, (6th ed. Sweet and Maxwell, London, 2012) 107.
[40] John Rawls, *A Theory of Justice* (Harvard University Press 1971).
[41] Patricia Birnie *et al, International Law and the Environment* (3rd edn Oxford University Press 2009). See also Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham, 2006) 3.

countries should aim at ensuring technological and information transfer to developing countries to bring them to levels within which they can 'justly' deal with the impacts of climate change.

John Rawls, on the other hand, discusses justice in the context of organization. He avers that in a society (international community) composed of people with different values and aspirations (different states), there develop structural rules which ensure cooperation, co-existence and, to some extent, competition (international law).[42] In any case, the need for these structural rules is necessitated by different social and economic positions, which translate into self-interest objectives.

Rawls further amplifies his discussion of justice in two ways, namely, the first principle and the second principle. Important to this study is the second principle in which he reiterates the distribution or sharing of resources (transfer of technology and information to developing countries) in an equitable manner that does not manifest substantial inequality by any chance.[43] In regards to the first principle, Rawls argues about 'basic liberties', which, in most cases, are considered political rights, that is, freedom of conscience, speech, and right to property. These are obligations that a sovereign has towards its subjects and, as such, bear no relationship with the regime of climate change except in underscoring the emerging principle of public participation in decision making. However, the second principle, as highlighted above, is the basis of cooperation among member states to the climate change legal regime and the transfer of information and technologies to developing countries.

Moreover, Rawls' theory of justice provides an avenue in handling the deep-rooted reality that developing and least-developed countries are among the countries that mostly bear the impacts and burden of climate change. This is because they lack adequate technical capacity and information necessary to implement climate change adaptation mechanisms. As such, the climate change regime has considered Rawls' theory of allotting greater significance to the worst of affected countries, against the utilitarian theory of maximum benefit for the maximum majority.[44]

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[42]Brian Bix, *Jurisprudence: Theory and Context* (6th edn Sweet and Maxwell, London 2012) 109.
[43] Edward A. Page, *Climate Change, Justice and Future Generations* (Edward Elgar, Cheltenham, 2006) 60.
[44] Michael Grubb, 'Seeking Fair Weather: Ethics and the International Debate on Climate Change,' in Aynsley Kellow & Sonja Boehmer-Christiansen (eds), *The International Politics of Climate Change* (An Elgar Research Collection, Cheltenham, 2010) 471.

Ratification, compliance and enforcement of internationally agreed instruments become a mirage especially where the instruments conflict with the interest of municipal law. This conflict, between municipal and international law, is best ironed out by Hans Kelsen in his monistic theory of international law.[45] According to Kelsen, international law is super-ordinate to all municipal laws because, not only does it impose norms and obligations to states,[46] but also because it claims its binding nature from the deep-rooted principle of *pact sunt servanda*. As such, municipal law is just a 'partial system' that attracts validity and legality from the international law.[47] In relation to climate change, national laws should always reflect the stipulations of the internationally agreed climate change regime, which is the higher norm in determining the steps and measures to be taken by party states. International obligations on states should transcend their respective self-interest goals and observance should not be in a manner that jeopardizes the interest of the international community at large.

1.6. Literature Review

The film industry has for a long time depicted and predicted the end or the invasion of the earth by either aliens from the outer space or collision of the earth with a much larger a heavenly body. With the rise of weather forecasting technology,[48] and the ability of man to visit the space and take pictures of the earth, the fallacy of an alien invasion as a possible cause of the end of the world seems questionable. Environmental research and technology have shown that the alien that is slowly pushing the world to annihilation is man himself who has been careless in his stewardship.[49]

The carelessness of man in his stewardship is not only limited to his anthropocentric actions, but also failure to adopt strong measures aimed at combating climate change. David Hunter *et al*,[50] acknowledge that climate change is an intergenerational issue, depending on the choices that are made currently in relation to emission reduction and adaptation undertaken. They

[45]Stern, W. B. "Kelsen's Theory of International Law." *The American Political Science Review*, 30(4), 1936, pp. 736–741. < www.jstor.org/stable/1947949> (accessed on 14/4/2021).
[46] Hans Kelsen, *Principle of International Law*, (Reinhart & Co, New York, 1952): https://babel.hathitrust.org/cgi/pt?id=mdp.39015021919280;view=1up;seq=8> (accessed on 14/4/2021).
[47] Ibid., p. 415.
[48] Jean-Philippe Touffut, "Introduction: Changing Climate, Changing Economists?", in Jean-Philippe Touffut (ed.) *Changing Climate, Changing Economy* (Edward Elgar, Cheltenham, 2009) 2.
[49] P. Q. Watchman, *Climate Change: A Guide to Carbon Law and Practice* (Globe Business Publishing Ltd, London, 2008) 7.
[50] David Hunter *et al*., *International Environmental Law and Policy* (5th ed. Foundation Press, St Paul, MN, 2015), p. 608.

also consider emission reduction as mitigation activities aimed at reducing the greenhouse gases (GHG) sources, and adaptation as adjustments in response to expected climatic effects. Ironically, Hunter *et al* note that even if the world was to cut carbon dioxide emissions to zero today, the world temperature would still not reduce for the next a thousand years, leading to the future generations unfairly inheriting the impacts of climate change. Unfortunately, apart from noting the difficulty faced by developing countries in choosing an effective, equitable and proportionate policy response, they fail to propose new policy responses besides the extenuation and adaptation approaches highlighted in the various climate change legal regimes.[51]

Francis D. P. Situma, in discussing the efficacy of international environmental law, critiques the vagueness of the United Nations Framework Convention on Climate Change (UNFCCC) in relation to states' commitments towards stabilizing greenhouse gases emission.[52] According to Situma, not only is the instrument very general in stipulating the commitments, but also fails to identify the extent to which parties are bound to their commitments. Further, although the convention identifies the principle of common but differentiated responsibilities, it sadly does not identify those responsibilities.[53]

Situma's paper would inform this thesis on the best way forward in implementing international instruments, including the United Nations Framework Convention on Climate Change (UNFCCC). He suggests a national level implementation where state parties undertake administrative and legislative means to effect an international instrument. According to Situma, domestication should be reinforced with follow up mechanisms which monitor state action at the national level.[54]

Deepa Bandrinarayana finds it unreasonable that although nations have established robust legal frameworks aimed at addressing climate change, compromise has generated laws that are not effective in addressing the catastrophic repercussions of climate change.[55]

Randall Abate and Elizabeth Ann, in discussing the effects of climate change to indigenous people, note that climate change is the precursor for indigenous communities losing land and

[51] Ibid., p. 635-658.
[52] Francis .D.P Situma, "The Efficacy of International Environmental Law: A Personal Reflection," 2 ILSA *Journal of Int'l & Comparative Law* 61, (1995), p. 78.
[53] Ibid.
[54] Ibid., p. 79.
[55] Deepa Badrinarayana, "Introduction to International and Domestic Climate Change Regulation," in Randal S. Abate & Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham, 2013), p. 19.

natural resources, which are crucial pillars to their survival.[56] In quoting Tsosie, they affirm that it is rather industrialization than failure in the domestication of international policies that trigger climate change.[57]

Although Randal and Elizabeth affirm that indigenous land is deeply connected to the identity and culture of a given community and that climate change threatens the said unique identities,[58] they fail to address the issue of political goodwill as an overarching cause for disenfranchising indigenous people social rights. However, they identify litigation as part of legal strategy that can be employed by such communities in ameliorating the consequences of climate change.[59]

Emmanuel Kasimbazi, in discussing multifaceted responses to climate change in Uganda, he highlights the projects, policy and legal dimensions undertaken by the country to address the outcomes of climate change.[60] Not only does he give an overview of the climate change in Uganda, but also identifies the centrality of forests in mitigating climate change and the challenges in implementing clean development mechanism.

Kasimbazi proposes that for Uganda to adequately respond to the issue of climate change, specifically the actualization of clean development mechanism projects, it must develop a specific climate law, just like the policy framework.[61] His work will contribute heavily towards this research as it will help in identifying the legal lacunae that exist in Uganda. Presently, what is in existence is the Uganda National Climate Change Policy 2015,[62] which gives general guidelines on the establishment of the Commission and a legal framework on climate change. However, Emmanuel does not address the issue of liability and whether the various legal frameworks in Uganda provide for liability in climate change.

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[56] Randall S. Abate & Elizabeth A. Kronk, "Commonality Among Unique Indigenous Communities: An Introduction to Climate Change and its Impacts on Indigenous Peoples," in Randal S. Abate & Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples (*Edward Elgar, Cheltenham, 2013), p. 6.
[57] Ibid., p. 5.
[58] Ibid., p. 14.
[59] Ibid., p. 18.
[60] Emmanuel B. Kasimbazi, "Policy and Legal Dimensions of CDM Projects in the Forestry Sector: Implications for Climate Change Mitigation and Adaptation in Uganda," in Benjamin J. Richardson et al. (eds), *Climate Law and Developing Countries- Legal and Policy Challenges for the World Economy* (Edward Elgar, Cheltenham, 2009), pp. 285-310.
[61] Ibid., p. 305.
[62] Ministry of Water and Environment, National Climate Change Policy, April, 2015.

Erik Kashambuzi associates climate change with the inept and militaristic leadership of Idi Amin Dada.[63] He argues that the beginning of environmental degradation in Uganda was as a result of Amin's policies which intended to double agricultural production after the manufacturing and commercial sectors supporting the country began to decline.[64] This commercialization of agriculture led to, *inter alia*, desertification, soil fertility loss as a result of monoculture and vulnerability to food insecurity. Notwithstanding Kashambuzi's assertion that Amin's policies were the genesis of climate change in Uganda, climate change is still a menace in Uganda, yet Idi Amin is long dead. Similarly, it cannot be, in the strict sense, assumed that diversification of agriculture was and is the accelerating cause of climate change in Uganda as noted by Kashambuzi.[65]

Mabasi Thadeus, in reviewing the legal and policy framework for the implementation of clean development mechanism in Uganda, notes that climate change in Uganda is attributed to unsustainable utilization of natural resources.[66] The situation has been exacerbated by lack of awareness, poverty and overreliance on biomass as the main source of energy and encroachment on wetlands for farming and settlements.

Mabasi is quick in noting that the climatic impacts in Uganda are difficult to quantify because of the uncertainty on the magnitude and rate of climate change therein.[67] Despite the uncertainty, Mabasi notes, Uganda has adopted a number of laws, projects and policies in various sectors to ensure climate change mitigation and application of clean development mechanism in Uganda. These include (i) in the forestry sector, the Vision 2040,[68] The Uganda Forestry Policy Plan,[69] the National Forestry and Tree Planting Act[70] and the 1995 Uganda Constitution;[71] (ii) in the energy sector, the 2002 National Energy Policy,[72] the National

[63] Eric Kashambuzi, "Once There Were Trees: Impacts of Agricultural Policy on Climate Change in Uganda," 16 *Whitehead Journal of Diplomacy & International Relations* 147, 154 (2014).
[64] Ibid., p. 149.
[65] Ibid., p. 150.
[66] Mabasi Thadeus, "Review of the Policy and Legal Framework for Implementing Clean Development Mechanisms Projects in Uganda and its Implications for Climate Change Mitigation," 4 Law Environment & Development Journal 149(2008).
[67] Ibid., p. 153.
[68]Uganda Vision 2040. <http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf> (accessed on 7/6/2018).
[69]Uganda Forestry Policy Plan, 2013. <http://www.mwe.go.ug/sites/default/files/National%20Forest%20Plan%20Uganda.pdf> (accessed on 7/6/2018).
[70] National Forestry and Tree Planting Act, No. 8 of 2003. < http://www.nfa.org.ug/images/National_Forestry_and_Tree_Planting_Act_2003.pdf> (accessed on 7/6/2018).
[71]The Constitution of Uganda 1995 as amended in 2005. Available at: http://www.statehouse.go.ug/sites/default/files/attachments/abridged_constitution_2006.pdf> (accessed on 7/5/2018).

Environment Management Policy;[73] (iii) in the wetland sector, the 1995 National Policy for the Conservation and Management of Wetland Resources,[74] and the National Environment Act.[75] However, it is important to note that the aforementioned policies and legal frameworks are not designed to specifically handle climate change and, as such, Mabasi urges the adoption of regulations and policies that specifically target clean development mechanism.[76]

Tunde Olarinoye and Samwel Mukulu, just like Mabasi, note that although Uganda has adopted over thirty (30) environment-related legal and policy instruments, much has not been achieved in relation to climate change because the sectoral and the cross-sectoral nature of these laws have resulted into complexity in coordination.[77] Moreover, natural resources depletion is still on the rise despite the sectoral approach adopted by the various legal instruments and policies touching on climate change.[78]

Besides the sectoral approach, other factors that facilitate environmental depletion in Uganda include weakness in policy enforcement and implementation, poor participation of private sector and NGOs, and lack of evaluation and monitoring systems.[79] Although Tunde and Samwel overlooked the challenges faced by Uganda in combating climate change, the data they provide will guide this research in examining laws related to climate change in Uganda.

Ambuj Sagar *et al* discuss climate change in developing countries in the context of global energy situation and the significance of energy in the economic, human and social development.[80] Sagar *et al* note that a third of the world energy consumption in developing countries, including Uganda, stems from biomass, which, compared with developed countries, results into higher energy intensities. Intensive biomass utilization leads to

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[72]The Energy Policy for Uganda, 2002. < http://energyandminerals.go.ug/downloads/EnergyPolicy.pdf> (accessed on 7/6/2018).
[73]The Draft National Environment Management Policy for Uganda, 2014.<http://enr-cso.org/wp-content/uploads/2014/12/Draft-Final-National-Environment-Management-Policy-Dec-2014.pdf> (accessed on 7/6/2018).
[74]National Policy for the Conservation and Management of Wetland Resources, 1995. <https://www.ramsar.org/sites/default/files/documents/library/national_wetland_policies_-_uganda.pdf> (accessed on 7/6/2018).
[75]National Environment Act, 2019.
[76]Mabasi Thadeus, "Review of the Policy and Legal Framework for Implementing Clean Development Mechanisms Projects in Uganda and its Implications for Climate Change Mitigation," 4 Law Environment & Development Journal 149 (2008), p. 164.
[77]Tunde Abraham Olarinoye and Samwel Mukulu Orecho, "Evolution of Environmental Policies in Uganda and Nigeria: A Developing Country Perspective," Environmental Policies (2015).
[78] Ibid., p. 13.
[79] Ibid.
[80] Ambuj D. Sagar *et al*, "Climate Change, Energy, and Developing Countries," 7 Vermont Journal of Environmental Law 71, (2006).

deforestation, which cumulatively causes serious climatic implications, such as reduced precipitation, drought, reduced agricultural production and carbon sequestration. These implications, merged with poor adaptive capability (legal framework, policies and projects) increases climate vulnerability.[81] Although Sagar *et al* link climate change to energy consumption and recommend the use of low greenhouse gases emitting technologies, efficient energy converters and carbon capture mechanisms, they do not show the statistical contribution of carbon combustion to climate change.

According to Medhanit Abebe, Africa suffers the most from climate change due to exacerbating factors, such as over reliance on rain-fed agriculture, extensive poverty, poor governance, weak adaptive capacities and environmental degradation.[82] In examining the relationship between gender and climate change in East Africa, Abebe notes that climate change had worsened the social-economic, political and environmental issues already bedeviling East Africa.

By 2050, temperatures in East Africa are projected to increase by 1.3 to 2.3^0 C, the rainfall is anticipated to decline by 10%, and the length of growing season to significantly reduce.[83] These changes will have far reaching ramification on food production in the region, particularly in Uganda, Kenya and the horn of Africa. Despite suggesting the establishment of efficient institutions and coordination among different stakeholders, Abebe argues that women participation should be the overarching concern because women suffer disproportionately from climate change impacts.[84]

According to Anel du Plessis, climate change and governance should be understood in the context of territoriality, within which the government is required to design, program and implement laws and policies directed at mitigating climate change.[85] It is from this assertion that this thesis seeks to scrutinize the laws and policies in Uganda that aim at mitigating climate change impacts. Although Anel du Plessis focuses further on local government, that is, the closest government to the people, this thesis will focus on the general national context. However, some of the challenges that she highlights, in relation to developing democracies,

[81] Ibid., p. 87.
[82] Medhanit A Abebe, "Climate Change, Gender Inequality and Migration in East Africa," 4 Washington Journal of Environmental Law and Policy 104 (2014).
[83] Ibid., p. 109.
[84] Ibid., p. 137-138.
[85] Anel du Plessis, "Climate Governance in South African Municipalities: Opportunities and Obstacles for Local Government ," in Benjamin J. Richardson (ed.) *Local Climate Change Law- Environmental Regulations in Cities and Other Localities* (Edward Elgar, Cheltenham, 2012) 353.

will provide insights on the obstacles faced by Uganda in the implementation of her climate change laws.

The best way to address climate change has been given by Patricia Kameri-Mbote and Collins Odote.[86] They note that climate change necessitates the rigorous interventions by many stakeholders and the employment of various tools and approaches. They further posit that through law, institutions can be compelled to act accordingly to prevent climate change. Facilitators of climate change can also be held accountable through criminal proceedings or private actions.[87]

Shuaib Lwasa *et al*, in assessing climate change for Uganda, note that the vulnerability of a communities to respond to climate change is influenced by a number of factors. In Uganda, the factors include: poverty levels, lack of institutional readiness to face the impacts of climate change, inappropriate political and technological frameworks, limited institutional capacity for management, insufficient observation and monitoring systems, lack of funding to invest, inadequate basic information and poor decisions, and lack of capacity building.[88]

In criticizing the sectoral approach taken by Uganda towards combating climate change, they assert that the various laws have not integrated climate change issues sufficiently.[89] This is because the various institutions established under the sectoral approach have a narrow focus as well as limited financial, logistic and human resource.[90]

Although Shuaib Lwasa *et al* propose several items to be taken into consideration in combating climate change, among them adopting a holistic, integrated and systematic regulatory framework, their research does not locate the role of flexible mechanism in Uganda. It also does not appreciate the contribution of the Copenhagen Accord especially in relation to foreign funding that heavily assists in logistic and human resource problems. However, their research will significantly assist this thesis in identifying the adaptation and mitigation measures in Uganda. Their recommendations will also buttress chapter five of this thesis on conclusion and recommendations.

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[86] Patricia Kameri-Mbote & Collins Odote, "Kenya", in Richard Lord et al (eds*), Climate Change Liability-Transnational Law and Practice* (Cambridge University Press 2012) 318.
[87] Ibid.
[88]Shuaib Lwasa *et al*, "Climate Change Assessment for Kampala, Uganda: A Summary." UNHABITAT's Cities and Climate Change Initiative, 2009, p. 9. http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=2999&alt=1 > (accessed on 9/8/2018).
[89]Ibid., p. 13.
[90] Ibid.

The paper published by Environmental Alert identifies key policy and legal challenges faced by Uganda in battling climate change.[91] The paper also reviews the legal and documentary literature that focuses on climate change at the international, regional and national level.[92]

In asserting the role of clean development mechanism, one of the flexibility instruments, the paper gives an example of Nyagak mini-hydro project as beneficiary of the implementation of three mechanisms introduced by the Kyoto Protocol.[93]

The paper notes weak climate change adaptation capacity as one of the major challenges not only in Uganda, but also at the regional level. This is attributable to lack of political goodwill in policies and program implementation, and due to the sectoral approach undertaken towards combating climate change.[94]

The paper will assist this thesis in identifying the national initiatives undertaken by Uganda in combating climate change. It will also help in highlighting the institutional and policy gaps that exist in the regulatory framework of climate change in Uganda.

Victor Orindi and Siri Eriksen identify ways through which vulnerable groups can adapt to climate change. In exploring the comprehensive measures to reduce vulnerability, they note natural, physical, financial and legal resources, all of which are lacking in Uganda, as cardinal elements.[95]

Although Victor Orindi and Siri Eriksen identify the building of community resilience through strengthening existing local and livelihood strategies as an appropriate adaptation strategy, their research is limited to local strategies, which have limited effects due to lack of financial and physical resources, and political good will. However, their research will assist in identifying the local strategies that should be adopted by Uganda to combat climate change.

Bernard Bashaasha *et al* state that climate change has exerted immense pressure on the government structures, particularly because they lack capacity to meet its ramifications. The situation is worsened by corruption, insufficient and ineffective institutions, and

[91]Joshua Zake et al, "Climate Change in Uganda: Insights for Long Term Adaptation and Building Community Resilience," ENVIRONMENTAL ALERT, 2010, p. 5.
[92] Ibid.
[93]Ibid., p. 9.
[94] Ibid., p. 22.
[95] Victor Orindi & Siri Eriksen, 'Mainstreaming Adaptation to Climate Change in the Development Process in Uganda,' African Centre for Technology Studies 15 (2005) 5. <www.jstor.org/stable/resrep00089. (accessed on 20/9/2018).

unwillingness of the populace to support government initiatives and programmes to combat climate change. Not only are these factors a hindrance to actions against climate change, but also impediments towards Uganda meeting its obligations under the United Nations Framework Convention on Climate Change.[96]

Although Bernard Bashasha *et al* do not comprehensively discuss the mitigation and adaptation actions undertaken in combating climate change in Uganda, their research will help this thesis in unraveling the shortcomings in the institutional frameworks dealing with climate change.

The United States Agency for International Development (USAID), in discussing climate change adaptation in Uganda, highlights several challenges that are a hindrance to combating climate change in Uganda.[97] Among them are institutional and policy related impediments, such as gaps in climate and sectoral data, weak and insufficient technical and scientific capacity. The United States Agency for International Development fact sheet, though not exhaustive, shall assist this thesis in scrutinizing the institutional framework on climate change in Uganda.

Egeru Anthony in his thesis "Assessment of Forage Dynamics under Variable Climate in Karamoja Sub-Region of Uganda," argues that the ramifications and variability in climatic situations hamper the actualization of sustainable development goals in Uganda.[98] This is due to lack of harmonization of policies, institutions and information relevant to climate change. According to Egeru's findings, policy makers rely on secondary data to draft measures and policies on climate change. He, therefore, recommends the use of location specific and sub-regional level climate information in developing and drafting policies on climate change in Uganda.[99]

Although Egeru's thesis shall assist this thesis in contextualizing climate change and variability in Uganda, especially on the case study of Karamoja, Egeru neither relates nor

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[96] Bernard Bashaasha *et al,* 'Decentralized climate change responses in Uganda Climate Change Adaptation Lacks local Government Funding,' Danish Institute for International Studies (2015), p. 4.

[97] USAID (2012), Climate Change Adaptation in Uganda Fact Sheet. < https://www.climatelinks.org/sites/default/files/asset/document/uganda_adaptation_fact_sheet_jan2012.pdf> (accessed on 8/27/2018).

[98] Egeru Anthony, Assessment of Forage Dynamics under Variable Climate in Karamoja Sub-Region of Uganda , (Unpublished Doctor of Philosophy (Ph. D.) Dissertation, University of Nairobi, Nairobi, 2014), p. 26. <http://erepository.uonbi.ac.ke/bitstream/handle/11295/75781/Egeru_Assessment%20of%20forage%20dynamics%20under%20variable%20climate%20in%20Karamoja%20subregion%20of%20Uganda.pdf?sequence=3&isAllowed=y > (accessed on 8/27/2018).

[99] Ibid., p. 240.

traces the measures he recommends from the international treaties on climate change. Though an extensive and comprehensive community-based research, it omits the discussion of United Nations Framework Convention on Climate Change and Kyoto Protocol, both of which inform the commitments, adaptation and mitigation mechanisms that member states have towards combating climate change.

Twinomugisha Ben postulates that among the constraints that Uganda is facing in combating climate change are inadequate institutional capacity in meteorology infrastructure, inadequate financial resources for implementing measures, and policies, poor research and capacity building, and inadequate data on climate change. These constraints have eclipsed the actualization of existing policies and measures, such as the Forestry Policy, Environmental Policy, and climate monitoring mechanisms.[100]

According to Twinomugisha, most policies in Uganda, before the 2015 Climate Change Policy, were not designed to address climate change. The few that did fell short of specifying the linkages with the United Nations Framework Convention on Climate Change (UNFCCC) and, thus, climate change was apportioned little attention.[101] Twinomugisha's paper will be crucial in profiling Uganda in relation to its geographical location, food security, and the areas for implementation of United Nations Framework Convention on Climate Change (UNFCCC), and major constraints for the execution of climate change regime.

Daniella Echeverria *et al* review Uganda's actions to address climate change on its development plans.[102] They aver that Uganda is dedicated to mainstream climate change into various governmental plans and policies. Unfortunately, while some of the policies identify climate change as a disaster for Uganda and, hence, the need to develop proactive measures, they do not specifically identify the adaptation measures to be taken, and which are informed by the international climate change regime.[103]

Daniella Echeverria *et al* not only discuss the institutional structure for climate change in Uganda, but also the national and sub-national policies adopted in various sectors, such as health, environment, energy and water. Furthermore, they discuss the current and planned adaptation projects and programs, including climate finance. Although they omitted a

[100] Twinomugisha Ben, "A Content Analysis Report on Climate Change Impacts, Vulnerability and Adaptation in Uganda," March 2005, p. 13.< http://pubs.iied.org/pdfs/10011IIED.pdf > (accessed on 8/27/2018).
[101] Ibid.
[102] Echeverría, D *et al*. Review of current and planned adaptation action in Uganda. International Development Research Centre, CARIAA Working Paper no. 19. 2016. < www.idrc.ca/cariaa >. (accessed on 28/8/2018).
[103]Ibid., p. 23.

discussion of public participation and gender parity in combating climate change, their work will have an influence on this thesis, especially in discussing the current and planned policies on public participation and gender.

Ronald Kaggwa *et al* reiterate the known, but ignored, the fact that an inaction by state parties to discharge their obligations under the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto and Post Kyoto Agreements would lead to an intensification in global temperature.[104] Uganda, being a state party, has made tremendous effort to discharge its obligations through short term adaptation strategies, such as National Adaptation Programme of Action (NAPA) and institutions, like the National Environment Management Authority (NEMA). Ronald Kaggwa *et al,* however, note that climate change is still an ignored province, as evidenced by the limited resources allocated to such institutions and strategies.[105]

The research by Ronald Kaggwa *et al* will assist this thesis in discussing the emerging issues, opportunities and challenges Uganda is facing in relation to climate change. It shall also inform the strategies adopted and the impacts of climate change on Uganda' development agenda.

Although the research was conducted before the negotiations at the United Nation Climate Change Conference (COP26) in Glasgow, Scotland, this thesis slightly incorporates in the literature review some of the key highlights and outcomes at Glasgow.

Although member states committed to reducing global emissions to a level that would maintain the 1.5 C alive, the lack of commitment on a clear timeframe of emission reductions by the large emitters makes this a difficult target to achieve. However, a significant outcome of Glasgow Climate Pact, which has never been discussed at a COP before, is the phasing down of unbated coal power and phasing out of fossil fuel subsides.[106] Further, the need to put an end to deforestation was also discussed at the conference.

Adaptation financing remained a dividing issue throughout the negotiations. Developing countries got a window at the Glasgow Climate Pact, to express their frustration and disappointment at the lack of solidarity by developed countries and default on previous

[104]Ronald Kaggwa *et al,* 'Enhancing the Contribution of Weather, Climate and Climate Change to Growth, Employment and Prosperity,' UNDP/NEMA/UNEP Poverty Environment Initiative, Uganda, 2009.
[105] Ibid., ix.
[106] UNFCCC (2021), 'Glasgow Climate Pact. Decision -/CMA.3', Advance unedited version, https://unfccc.int/sites/default/files/resource/cma3_auv_2_cover%20decision.pdf.

commitments. Though regret was shown by the developed countries and promised to fulfil the commitments and pledge of 100 billion dollars by 2023,[107] there is no mechanism of monitoring compliance with the commitments made. Besides, adaptation financing was not given the level of priority the developing countries were advocating.

The literature above will help this thesis in discussing the existing legal and institutional framework in Uganda in relation to climate change challenge. The literature will also enable this study to address the shortcomings in the legal, institutional and policy responses to climate change and derive the possible recommendations for this study.

1.7. Research Methodology

This is a qualitative study that used desk research methodology in answering the research questions. The study used both primary and secondary data. The primary sources included Uganda's constitution, statutes, reports and policies. Others were international agreements on climate change, resolutions and declarations. The textual analysis of these primary sources helped in discussing the extent to which Uganda's policies and legal frameworks are in tandem with its international obligations in line with the United Nation Framework Convention on Climate Change.

The secondary data, which was used to explain the doctrinal and background information on primary sources, included books, journal articles and periodicals. Considering that climate change is a global concern and relatively a new concept, the internet was also used to inform this study on the progress and impacts of climate change. Information was obtained through the use of the library and internet. This helped in textual analysis of existing laws in Uganda.

1.8. Chapter Breakdown

This thesis is divided into five chapters, which are discussed as indicated below.

Chapter One: Introduction

[107] OECD (2021), 'Statement by the OECD Secretary-General on future levels of climate finance: Developed countries likely to reach USD 100 billion goal in 2023', 25 October 2021, https://www.oecd.org/newsroom/statement-by-the-oecd-secretary-general-on-future-levels-of-climatefinance.htm

This Chapter covers the introduction, background of the study, statement of the problem, hypothesis, objectives, research questions, theoretical framework, literature review and research methodology.

Chapter Two: Climate Change and International Response

This Chapter includes the international actions on climate change through the United Nations Framework Convention on Climate Change, Kyoto Protocol, Post Kyoto negotiations (Copenhagen Accord 2009, Cancun Agreement 2010 and Durban 2011) and the 2015 Paris Accord.

Chapter Three: Uganda and Climate Change

This Chapter deals with the legal, policy and institutional frameworks adopted by Uganda in response to climate change, such as National Environment Management Authority (NEMA), Uganda Wildlife Authority (UWA), Climate Change Unit (CCU), National Planning Authority (NPA), the 1995 Uganda Constitution, 2015 National Climate Change Policy, Vision 2040, National Environment Act, 2019, National Environment Act, Cap 153 (repealed), 1995 and Uganda Meteorological Authority.

Chapter Four: Uganda's Legal and Institutional Framework

This Chapter identifies effectiveness of and gaps in the legal and institutional framework adopted in Uganda.

Chapter Five: Conclusion and Recommendations

This Chapter presents the conclusion and recommendations pursuant to all the previous chapters discussed.

CHAPTER TWO

CLIMATE CHANGE AND INTERNATIONAL RESPONSE

2.1 Introduction

Ozone depletion and climate change have been recognized as serious threats to the global atmosphere.[108] Both being agents of environmental change that transcends international borders, international law has been applied, through treaties and declarations, to ameliorate the quality of the atmosphere and the environment *in toto*.

Despite the increasing frequency of adverse climate events, effective response to climate change through treaties has been slowed by political and economic impediments.[109] Such obstacles are attributed to climate change as a complex problem, with political, economic and legal facets.[110] As an economic and political problem, developing states argue that strict compliance to the global regime regulating climate change will hinder their social and economic development.[111] As a legal and political problem, it manifests in the reluctance of states to cooperate in the ratification and domestication of international law.

These conflicts have been a hindrance to reaching a common and fruitful *consensus ad idem*[112] on how to handle climate change effectively. While some states have signed up to the United Nations Framework Convention on Climate Change (UNFCC), Kyoto Protocol and Post Kyoto Agreements, several states have been reluctant,[113] with some even expressing intention to withdraw their consent.[114]

Despite the aforementioned challenges, the world has moved towards appreciating and acknowledging climate change concerns. This is demonstrated by the readiness and

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[108] Patricia Birnie *et al, International Law and the Environment (*3rd edn Oxford University Press, Oxford, 2009) 336.
[109] Philippe Sands, *Principles of International Environmental Law*, (3rd edn Cambridge University Press, Cambridge, 2012) 239.
[110] n1.
[111] Ibid, p. 335.
[112] Thom Brooks, 'The Real Challenge of Climate Change,' Political Science and Politics, Vol. 46, No. 1 (2013), p. 34. See also Jesse Vogel, 'The Problem with Consensus in the United Nations Framework Convention on Climate Change,' 32 Philosophy and Public Policy Quarterly 2, (Winter 2014).
[113] USA has not ratified the Kyoto Protocol. See Anita M. Halvorssen, "Global Response to Climate Change - From Stockholm to Copenhagen," 85 Denver University Law Review, 2008, p. 850; Daniel H. Cole, Climate Change, Adaptation, and Development, 26 UCLA Journal of Environmental Law and Policy 1 (2008), p. 2; See also https://edition.cnn.com/2013/07/26/world/kyoto-protocol-fast-facts/index.html > (accessed on 8/19/2018).
[114] United States pulling out of the Paris Agreement. See Zhang Hai-Bin *et al,* 'U.S Withdrawal from the Paris Agreement: Reason, Impacts and China's Response, 'Advances in Climate Change Research 8 (2017), p. 220-225; https://www.independent.co.uk/news/world/americas/us-politics/trump-paris-climate-deal-agreement-us-go-back-latest-a8152531.html > (accessed on 8/19/2018).

willingness of several states to shelf their disparaging development ambitions for the sake of reducing emissions. This chapter discusses climate change by tracing its origin, locating its legal regime and the response accorded it by the international community.

2.2 Climate Change and Global Atmosphere

Climate change, mainly characterized by global warming, refers to the rise in the average surface temperature on earth.[115] Though the rise in temperature may be due to natural causes, such as volcanic eruption and sun's radiation, anthropogenic emissions, specifically the burning of fossil fuel, have been established as the primary and significant causes.[116]

The planetary climate is regulated by the presence of naturally occurring greenhouse gases in the atmosphere. These gases, namely, carbon dioxide, methane, fluorinated gases, tropospheric ozone and nitrous oxide,[117] have the effect of allowing shortwave solar radiations to reach the earth, but trap and absorb longwave radiations emitted from the earth's surface.[118] The trapped longwave radiations have the effect of warming up the earth's lower atmosphere, hence the term 'global warming'.[119]

While the occurrence of greenhouse gases in the global atmosphere is already a climatic threat, an increase in their concentration through anthropogenic means intensifies the threat. Such anthropogenic means include deforestation, production of cement and agriculture. It is from this realization that the United Nations General Assembly, in the late 1980s, recognized climate change as common concern for mankind and encouraged international organizations, governments and non-governmental organizations to cooperate in preparing a legal regime to address it.[120]

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[115] Jeff Craig, 'Introduction to Project, Research, and General Information,'< https://www.researchgate.net/publication/312320726_International_Climate_Change_Law > (accessed on 8/19/2018). see also 'what is Climate Change? <http://www.takepart.com/flashcards/what-is-climate-change/index.html > (accessed on 8/19/2018).

[116] Philippe Sands, *Principles of International Environmental Law*, (3rd edn Cambridge University Press, Cambridge, 2012) 275. See also Dan Galpern, Climate Change 101: Urgency and Response, 23 Journal of Environmental Law & Litigation, 191 (2008), p. 194; James E. Hickey Jr., 'Some Legal Impacts of the Emerging International Climate Change Regime on Energy Prices,' 4 Global Business Law Review (2013), p. 2, < http://engagedscholarship.csuohio.edu/gblr/vol4/iss1/3 > (accessed on 8/18/2018).

[117] Overview of Greenhouse Gases < https://www.epa.gov/ghgemissions/overview-greenhouse-gases > (accessed on 8/19/2018).

[118] Deepa Badrinarayana, "Introduction to International and Domestic Climate Change Regulation," in Randal S. Abate and Elizabeth A. Kronk (eds), *Climate Change and Indigenous Peoples* (Edward Elgar, Cheltenham, 2013), p. 20.

[119] Ibid.

[120] UNGA Res. 43/53 (1988).

2.3 International Response to Climate Change

2.3.1 The 1979 World Climate Conference

It was the 1979 World Climate Conference, also referred to as the First World Climate Conference, which recognized climate change as a serious global problem. World Climate Conferences are a series of global meetings about climate and forecasting research, usually organized and sponsored by World Meteorological Organization (WMO).

The initial Conference was held in Geneva, Switzerland, in February 1979,[121] and focused on global warming and its effects on human activities, namely, forestry, urban planning, agriculture, fishing and hydrology.[122]

The Conference issued a declaration committing to take full advantage of man's present knowledge of climate, take steps to improve that knowledge significantly, and foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity.[123]

The declaration recognized carbon dioxide concentration, as a result of burning fossil fuels, changes in land uses and deforestation, as a leading cause of global warming in the lower atmosphere.[124] Furthermore, it was influential in the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988, and the World Climate Programme (WCP), both under the joint guidance and responsibility of World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP).[125]

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[121] John W. Zillman, 'A History of Climate Activities,' <https://public.wmo.int/en/bulletin/history-climate-activities > (accessed on 8/19/2018). See also http://www.un.org/climatechange/towards-a-climate-agreement/index.html > (accessed on 8/19/2018); http://enb.iisd.org/crs/climate/wcc3/html/ymbvol165num1e.html > (accessed on 8/19/2018).

[122] See a research paper by Bryan Bonseok Koo, "Successful Models of Non-Governmental Organizations in Consultative Status: Best Practices on Climate Change," April 2011 available at: http://csonet.org/content/documents/ClimateChange.pdf > (accessed on 8/19/2018); See also http://canviclimatic.gencat.cat/en/politiques/acords_internacionals/primera_conferencia_mundial_sobre_el_clima_1979/ > (accessed on 8/19/2018).

[123] Declaration of the World Climate Conference < https://www.documentcloud.org/documents/3467449-First-World-Climate-Conference-Declaration.html > (accessed on 8/19/2018).

[124] Ibid. See also http://enb.iisd.org/crs/climate/wcc3/html/ymbvol165num1e.html > (accessed on 8/19/2018).

[125] n14.

2.3.1.1 The World Climate Programme

The World Climate Programme was established in response to the urgent need to establish a common strategy for understanding and rationally using climate system and information, as recommended by the 1979 World Climate Conference Declaration.[126]

The Programme was established in 1979 by the World Meteorological Congress at its Eighth Session and was consequently mandated the responsibility of improving the understanding of climate system for the benefits of countries coping with climate change and variability.[127]

The Programme had five objectives, namely, improving the understanding of climate change processes, fostering the application of climate change information and knowledge, promoting and enhancing the availability and accessibility of user-targeted climate services, promoting and facilitating a comprehensive observation, collection, monitoring and management of global climate data, and promoting capacity development, especially for developing and least developed states.[128]

Structurally, the Programme is comprised of World Climate Services Programme (WCSP), advised and guided by the Commission for Climatology (CCl), World Climate Research Programme (WCRP), Global Climate Observing System (GCOS), and Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA) managed by the United Nations Environment Programme (UNEP).[129] The World Climate Services Programme (WCSP) is responsible for improving the availability and accessibility to climate data, the Global Climate Observing System (GCOS) disseminates information on the total climate service, the World Climate Research Programme **(**WCRP) analyzes and predicts the variability and change of the Earth's surface, and the Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptations **(**PROVIA) connects decision makers and research community with other stakeholders in the hope of improving policy relevant research.[130]

[126]Extraordinary session of the World Meteorological Congress (Cg-Ext 2021) http://www.wmo.int/pages/prog/wcp/wcp.html > (accessed on 14/4/2021).
[127] Ibid.
[128]World Climate Programme. < https://public.wmo.int/en/programmes/world-climate-programme > (accessed on 8/19/2018).
[129] Ibid.
[130]Ibid.

2.3.1.2 The Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change was established in 1988 jointly by World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) and endorsed by United Nations General Assembly.[131] The Panel is responsible for assessing the science of climate change and providing policymakers with assessment, based on a scientific background of the impacts and risks of climate change, and the options for mitigation and adaptation.[132]

Despite being an international organization with an open membership to all members of the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP), the Panel does not carry out its own original research.[133] The scientists at Intergovernmental Panel on Climate Change depend on published and peer reviewed literature.[134] However, the reports published by the Panel usually undergo numerous rounds of drafting and review to ensure they are comprehensive, objective, open and transparent.[135]

Reporting at Intergovernmental Panel on Climate Change is grouped into three working groups. Working Group I deals with the physical scientific aspects of climate system, which include the history of climate change, evaluation of climate models, future projections of climate change, observing temperature changes in air, land and oceans, and detecting climate change. Working Group II focuses on impacts, adaptation and vulnerability to climate change based on sector (such as ecosystems, industry and human health) and region (such as Asia, Africa, Europe, America and Polar regions). Working Group III narrows down on mitigation options of climate change through limiting greenhouse gas emission and promoting activities that absorb the already emitted gases in the atmosphere.[136]

The contribution of IPCC to climate change regulation cannot be over emphasised. Its first assessment report in 1990 brought to light the importance of climate change as a problem that demanded international cooperation to handle its ramifications.[137] Thus, it influenced the

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[131] UNGA Res. 43/53 (1988). See also Ravindranath, N. "IPCC: Accomplishments, controversies and challenges," Current Science, 99, (2010), 26-35. Available at: http://www.jstor.org/stable/24108347 > (accessed on 8/19/2018).
[132] The Intergovernmental Panel on Climate Change. <http://www.ipcc.ch/ > (accessed on 8/20/2018).
[133] Intergovernmental Panel on Climate Change <http://www.environment.gov.au/climate-change/climate-science-data/climate-science/ipcc > (accessed on 8/19/2018).
[134] Ibid.
[135] John W. Zillman, 'A History of Climate Activities <https://www.ipcc.ch/organization/organization_history.shtml > (accessed on 8/20/2018).
[136]The Intergovernmental Panel on Climate Change http://www.ipcc.ch/ > (accessed on 8/19/2018).
[137] n28.

drafting of the United Nations Framework Convention on Climate Change (UNFCCC). Its second assessment report of 1995 provided salient material and literature that was relied upon by the Kyoto Protocol negotiators and its subsequent adoption in 1997.[138]

2.3.2 The Second World Climate Conference

The second Conference, held on 29 October to 7 November 1990, in Geneva, was sponsored by United Nations Environment Programme (UNEP), World Meteorological Organization (WMO), Food and Agriculture Organization (FAO), and United Nations Educational, Scientific and Cultural Organization (UNESCO).[139]

The major task of the Conference was to review World Climate Programme (WCP) already set up by the First World Climate Conference.[140] Since the First Assessment Report by Intergovernmental Panel on Climate Change (IPCC) had already been completed, the Conference ended up reviewing the report.

The Conference resulted into the adoption of a seven-page Conference Declaration and a Ministerial Statement. The former recommended the establishment of a Global Climate Observing System (GCOS), and the latter, adopted by consensus, called for cooperative international approach in tackling climate change and emphasized the support needed for the development of the United Nations Framework Convention on Climate Change (UNFCCC).[141]

2.3.2.1 The Global Climate Observing System

The Global Climate Observing System was established in 1992 as an outcome of the Second World Climate Conference.[142] It aims at providing information on the total climate system. The information analyzes the biological, physical and chemical properties of climate. Since the information provided supports the World Climate Programme (WCP), the Intergovernmental Panel on Climate Change (IPCC), and the United Nations Framework Convention on Climate Change (UNFCCC), the Global Climate Observing System can be said to be playing an observatory and supportive role in the climate change discourse.

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[138] Ibid.
[139] Information Unit for Conventions (IUC) <http://unfccc.int/cop3/fccc/climate/fact17.htm > (accessed on 8/20/2018).
[140] John W. Zillman, 'A History of Climate Activities < https://public.wmo.int/en/bulletin/history-climate-activities > (accessed on 8/20/2018).
[141] World Climate Conference, Summary Report <http://enb.iisd.org/crs/climate/wcc3/html/ymbvol165num1e.html > (8/20/2018).
[142] John W. Zillman, 'A History of Climate Activities < https://public.wmo.int/en/bulletin/history-climate-activities > (accessed on 8/20/2018).

2.3.3 The Third World Climate Conference

The third Conference was held in Geneva, Switzerland, from 31 August to 4 September 2009.[143] Just like the former Conference, it was jointly organized by the United Nations Environment Programme (UNEP) and World Meteorological Organization (WMO).

2.3.4 The United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 in New York[144] and opened for signature at the Rio Conference. The Convention is recognized as the primary and the first convention to combat climate change through international cooperation.[145]

Though recognized as the first convention to target and provide for climate change specifically, it is neither comprehensive nor fully detailed as a regulatory regime and, hence, it leaves room for further negotiation and agreement on policies to combat climate change.

The Conference was attended by 143 states hence the resultant convention is recognised as among the few international instruments to be negotiated by almost the entire international community.[146] To date, there are 197 parties to the convention making it one of the most ratified conventions.

2.3.4.1 Adoption of UNFCCC

Before the UNFCCC, countries had their own internal mechanisms for addressing climate change. The United States relied on the Clean Air Act[147] which controlled air pollution. United Kingdom relied on the Alkali Acts in the 19th Century.[148] Later, after joining the European Community in 1972, her domestic environmental law became shaped by the EU directives which aimed at an integrated approach to protecting the environment. In other words, there was no international cooperation in handling climate change and hence countries relied on their standalone national legislations.

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[143]Extraordinary session of the World Meteorological Congress (Cg-Ext 2021) < http://www.wmo.int/gfcs/wwc_3 > (accessed on 8/20/2018).
[144] 1992 United Nations Framework Convention on Climate Change; *31 ILM 849 (1992);*
[145] IISD Reporting Services< http://enb.iisd.org/process/climate_atm-fcccintro.html > (accessed on 8/20/2018).
[146]Philippe Sands., *Principles of International Environmental Law*, 3rd ed. (Cambridge University Press, Cambridge, 2012), p. 276. See also Scott J. Stone, "Comment on COP 11 to the UNFCCC," 6 Sustainable Development Law & Policy 45, 46 (2006), p. 45.
[147] Clean Air Act, 42 U.S Code 7401.: Public Health and Social Welfare.
[148] Roy M. MacLeod, "The Alkali Acts Administration, 1863-84: The Emergence of the Civil Scientist" 9 Victorian Studies 2, 1965, Available at: https://www.jstor.org/stable/3825263 > (accessed on 12/11/2018). See also Michael Hill, "The Role of the British Alkali and Clean Air Inspectorate in Air Pollution Control," 11 Policy Studies Journal 1, September 1982. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1541-0072.1982.tb00245.x (accessed on 12/11/2018).

The resulting country specific legislations did not effectively address climate change because national legislations are restricted by territorial jurisdictions, yet the effects of climate change are transboundary. Essentially, the point of anthropogenic emission is not necessarily where the effects and impacts are felt.[149] As a result, developing and least developed countries, though not being serious contributors to climate change in the 20th century, disproportionately suffer the risks and effects of climate change due to insufficient adaptation and mitigation capability.

In 1992, the UNFCCC was adopted to ensure stabilization of greenhouse gases concentration in the atmosphere. This is provided for under Article 2, which states that:

> The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.[150]

While other reasons for the adoption might include boosting international cooperation,[151] addressing the historical climate change injustices perpetrated by developed countries,[152] and boosting resilience to climate change in low lying small islands, fragile mountainous ecosystems and semi-arid areas,[153] the underlying assumption is that the aforementioned reasons aim at ensuring stabilization of greenhouse gases.

2.3.4.2 The Principles

Article 3 of the UNFCCC identifies several principles, most of which are encapsulated in early declarations such as the 1972 Stockholm Declaration and the 1992 Rio Declaration. These include Precautionary principle; Equity; Common and differentiated responsibilities; Sustainable development; and Special needs for developing countries.

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[149] Understanding the UN Climate Change regime. <https://unfccc.int/resource/bigpicture/ > (accessed on 13/11/2018).
[150] Article 2 of the 1992 United Nations Framework Convention on Climate Change, *31 I.L.M. 849 (1992)*.
[151] The Preamble of the 1992 United Nations Framework Convention on Climate Change, *31 I.L.M. 849 (1992)*.
[152] Ibid.
[153] Ibid.

The precautionary principle

The precautionary principle is an anticipatory approach in the field of environmental law that acknowledges the imperfection of science. The principle postulates that lack of full scientific evidence shall not be a reason to postpone effective measures to prevent damage to the environment.[154] Its origin can be traced in the German Administrative Law principle, *Vorsorgeprinzip,* meaning "prior worry or care."

Before finding locus in the UNFCCC, the precautionary principle was applied in several cases such as the ***EFTA Surveillance Authority v. Norway***,[155] in which the court held that where it was impossible to determine certainly the hazard posed, a decision maker shall be justified to use precautionary principle to take restrictive measures.

The adoption of the UNFCCC saw the incorporation of the precautionary principle in the field of climate change.[156] In acknowledging the impossibility of having absolute scientific proof, the principle urges state parties to take measures to mitigate climate change where there are threats of irreversible damage in case of inaction.

Like the Rio Declaration, the UNFCCC envisages that measures taken to combat climate change should be cost-effective and take into account different socio-economic contexts, so as to ensure universal benefit at the lowest cost.

Equity

Broadly termed as the principle of inter-generational and intra-generational equity,[157] this principle allocates the benefits of exploitation and protection of natural resources to both the current and the future generations. Although the principle achieves the allocation through fairness, the obligation to protect natural resources is placed on the current generation for they precede the future generations in handling and interacting with natural resources. Therefore, the current generation interacts and holds the resource in trust for the future generations.

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[154]Rio Declaration on Environment and Development 1992, Principle 15 , A/CONF.151/26; reprinted in *31 ILM 874;* Cass R. Sunstein, "Beyond the Precautionary Principle," 3 University of Pennsylvania Law Review, 151, (Jan., 2003), p. 1005; Elizabeth Fisher, "Is the Precautionary Principle Justiciable?" 13 Journal of Environmental Law, 3 (2001), pp. 316-7.

[155] [2001] 2 CMLR 47.

[156] United Nations Framework Convention on Climate Change 1992, article 3 (3).

[157] Nicholas A. Robinson , Lal Kurukulasuriya, *Training Manual on International Environmental Law* (Pace Law Faculty Publications, New York, 2006), p. 26.

In embracing the principle of equity, the UNFCCC calls for the protection of climate system for the benefit of the present and future generations.[158]

Though narrowly constructed under UNFCCC, inter-generational equity entails two types of relationships, namely, the relationship between man and the natural system of which he is part, and the relationship between man and other generations. In the former, man has the capacity and is in control of shaping the relationship due to his capacity to reason. He can choose to destroy the integrity of the natural system by degrading it or he can exploit it sustainably. The latter entails the right that all generations should enjoy by linking them to the ongoing relationship with the earth. This relationship places a higher burden on the current generation for they have the immediate link with the natural system.[159]

Common but differentiated responsibilities

Douglas Bushey and Sikina Jinnah consider UNFCCC negotiations as a series of attempts to activate the principle of common but differentiate responsibilities.[160] Essentially, the principle aims at taking into consideration the different circumstances of parties, particularly their contribution in GHG's emissions into the atmosphere.

The principle of common but differentiated responsibilities is premised on equity. The rationale has been that while greenhouse gases emission per capita are concentrated in developed states, the greatest impacts of climate change are borne by developing states. Thus, developed countries are placed on a higher platform of responsibility than developing states to combat climate change.

The Principle has been invoked to identify the vulnerability of developing countries, low-lying islands and coastal states, to climate change and, hence, calls upon developed states to take immediate action, considering their greenhouse gases contribution, to combat climate change.[161]

The UNFCCC requires developed countries to be on the lead to combat climate change,[162] for they have, in the past, placed disproportionate pressure on the global environment in pursuit

[158] United Nations Framework Convention on Climate Change 1992, article 3.
[159] Ibid.
[160] Douglas Bushey & Sikina Jinnah, 'Evolving Responsibility: The Principle of Common but Differentiated Responsibility in the UNFCCC,' 6 Publicist 1, 10 (2010), p. 1.
[161] United Nations Framework Convention on Climate Change 1992, Article 4 (8).
[162] United Nations Framework Convention on Climate Change,1992,Article 3 (1).

of development. However, some developed countries are apportioned a higher degree of responsibility because they have higher levels of technological empowerment and huge financial resources.

Sustainable development

Closely related to the principle of inter-generational equity,[163] sustainable development entails development that meets the needs of the current generation without jeopardizing the ability and the needs of the future generation.[164] Besides UNFCCC, several instruments have adopted this principle, namely, Agenda 21[165] and the Rio Declaration.[166]

2.3.4.3 Commitments

While the onus to lead in implementation has been placed on developed countries, all state parties have an obligation to live up to their commitments established under the UNFCCC. The Convention categories state parties into three groups, namely, Annex I Parties; Annex II Parties; and Non-Annex I Parties.

Annex I parties encompass developed countries and economies in transition. The developed countries under Annex I are states that were members of the Organization for Economic Cooperation and Development (OECD) in 1992. Economies in transition, on the other hand, means economies in the process of changing to a free market from a centrally planned one. Under the UNFCCC they include the Russian Federation, Baltic states and some countries in Central and Eastern Europe; in total 14 states.

Annex I Parties commit, in addition to the general commitments, to be on the lead in modifying long-term trends in anthropogenic emissions by adopting national policies and mitigation measures.[167] Furthermore, they are required to communicate detailed information

[163] Edith Brown Weiss, "In Fairness to Future Generations and Sustainable Development," 8 American University International Law Review, 1 (1992), p. 19.
[164] Report of the World Commission on Environment and Development: Our Common Future, *UNGA A/42/427*, (1987). See also http://www.fdsd.org/the-challenge/what-is-sustainable-development/ > (accessed on 8/21/2018).
[165] UN (1992) Agenda 21: United Nations Sustainable Development, United Nations Conference on Environment & Development. 1992, United Nations: https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf > (accessed on 12/11/2018).
[166] Rio Declaration on Environment and Development 1992, Principle. A/CONF. 151/26; reprinted in *31 ILM 874*.
[167] United Nations Framework Convention on Climate Change 1992, article 4 (2)(a).

of measures taken to return, jointly or individually, the concentration of greenhouse gases not controlled under the Montreal Protocol to their 1990 levels.[168]

Unlike developed countries, economies in transition are entitled to some degree of flexibility in implementing their commitments.[169] For instance, economies in transition can use historical base line or a base line other than the 1990 levels. Slovenia, Bulgaria and Romania were allowed 1986, 1988 and 1989 base years respectively. [170] Similarly, the general commitments established for all parties are interpreted less strictly than Annex I commitments. For example, report and communication submission, under Annex I, is more stringent and frequent than under general commitments.[171]

Annex II Parties consists of all the OECD members listed in Annex I except Turkey, which was deleted by the 28 June 2002 amendment, adopted at COP 7.[172] During the Cold War, Turkey was a strategic state used by the Western Block to counterbalance the influence of Soviet Union. As a result of her close ties with the Western Block, she was admitted to organizations such as NATO in 1952 and OECD in 1960. Being a founding member of OECD, Turkey ended up being listed as Annex I and II under the UNFCCC, when it was adopted in 1992. After realizing the ramifications of being classified as Annex II, she requested to be deleted from the list.[173] Her removal reduced Annex II Parties to 24.

Under the UNFCCC, Annex II Parties are required to provide new and additional financial resources to meet the costs incurred by developing countries in reporting and executing their general commitments.[174] The obligation to provide resources is limited to Annex II Parties. However, in practice, some developed countries, though not listed as Annex II, also contribute towards achieving this commitment.[175]

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[168] Article 4 (2)(b) of the 1992 United Nations Framework Convention on Climate Change, *31 ILM. 849 (1992).*
[169] Article 4 (6) of the 1992 United Nations Framework Convention on Climate Change, *31 ILM. 849 (1992).*
[170] Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge University Press, Cambridge, 2004), p. 90.
[171] United Nations Framework Convention on Climate Change 1992, article 12 (5) *31 ILM. 849 (1992).*
[172] United Nation (2002), Report of The Conference of the Parties on its Seventh Session, held At Marrakesh from 29 October to 10 November 2001, COP 7, FCCC/CP/2001/13/Add.4. Decision 26/CP.7.
[173] http://climateobserver.org/tangled-case-turkey-status-unfccc-paris-agreement/ > (accessed on 13/11/2018).
[174] United Nations Framework Convention on Climate Change, 1992,article 4(3) *31 ILM. 849 (1992).*
[175] Ibid. See also Farhana Yamin & Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge University Press, Cambridge, 2004), p. 267.

In addition to the provision of financial resources, Annex II parties are required to ensure technology transfer and meeting the cost of adaptation for vulnerable developing countries.[176]

Non-Annex I refers to countries which have ratified UNFCCC but have not been included in the list of Annex I. Members under this category are mostly emerging economies and low-income developing countries such as Brazil, China and India.[177] When they are sufficiently developed, Non-Annex I countries can volunteer to become Annex I. Like all the parties, Non-Annex I are required to take measure to stabilize GHG's concentration in the atmosphere.

All parties to the UNFCCC are required to undertake some specified measures and actions towards stabilizing the concentration of greenhouse gases in the atmosphere. The measures include, *inter alia*, promoting sustainable development, ensuring cooperation, promoting sinks conservation, formulating national inventories, and integrating climate change into national policies and action.[178]

The measures outlined under Article 4 are general commitments to be fulfilled by all member states in accordance with national circumstance and the principle of common but differentiated responsibilities.

2.3.4.4. Institutions under United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change establishes three institutions, namely, the Conference of Parties,[179] the Secretariat[180] and the Subsidiary Bodies.[181]

The Conference of Parties is the supreme body of the Convention. It is responsible for reviewing the implementation of the Convention and other related instruments within its mandate. In ensuring the implementation, the Conference of Parties, *inter alia*, examines the obligation of parties, promotes the exchange of information, facilitates the coordination of measures meant to tackle climate change, assesses the implementation of the Convention by

[176] United Nations Convention on Climate Change 1992, article 4(4) & (5). *31 ILM. 849 (1992).* On technology transfer under the UNFCCC see Karen Sullivan, "Technology Transfer and Climate Change: Additional Considerations for Implementation under the UNFCCC," 7 Law, Environment & Development Journal 1 (2011).
[177] http://www.cicep.no/copguide/2015/10/26/non-annex-i-parties > (accessed on 13/11/2018).
[178] United Nations Framework Convention on Climate Change, 1992, article 4(4) & (5). *31 ILM. 849 (1992).*
[179] Ibid, article 7.
[180] Ibid., article 8.
[181] Ibid., article 9, 10.

parties, reviews reports submitted by the subsidiary bodies, and adopts rules for its functioning and Subsidiary Bodies.

The Secretariat, established under Article 8, is responsible for organizing sessions of the Conference of Parties and the Subsidiary Bodies. It also compiles reports, facilitates assistance to developing states in compiling information, guides the Conference of Parties and ensures coordination with the secretariats of other international organizations.

The UNFCCC establishes two subsidiary bodies, namely, the Subsidiary Body for Scientific and Technological Advice[182] and the Subsidiary Body for Implementation.[183] The former is responsible for providing the Conference of Parties with scientific and technological information, while the latter is responsible for assessing and reviewing the effective implementation of the Convention.

2.3.4.5. Importance of the UNFCCC

The UNFCCC plays a para**m**ount role in the field of environmental law. To begin with, the UNFCCC marked the first collaborative and integrated effort towards combating climate change. The Convention earned the cooperation of 192 countries who expressed their intention to ensure the balance of greenhouse gases concentration to levels that would prevent dangerous anthropogenic interference with the climate system.

Secondly, the UNFCCC set the foundation for the negotiation of multilateral action towards combating climate change. Both the Kyoto Protocol and the Paris Agreement were negotiated under the purview of the UNFCCC and builds on the Convention.

The UNFCCC also acted as a historic platform where the international community acknowledged, for the first time, the necessity to check their economic activities, which were contributing to climate change. Developed countries committed to assisting developing states like Uganda through financial support and technology transfer. In contrast, the developing states undertook to implement programmes containing measures for adaptation and mitigating climate change.

[182] Ibid., Article 9.
[183] Ibid., Article 10.

2.3.5. Short Comings of the UNFCCC

2.3.5.1. Qualification of general commitments

Heavily premised on the principle of common but differentiated responsibilities, the actualization of some of the commitments posited under the UNFCCC is dependable on the implementation of other commitments. For instance, the extent to which developing nations can meet their general commitments, commonly referred to as treaty obligations, is dependent on the extent to which Annex II and developed countries provide financial and technological assistance to combat climate change.[184]

This qualification of general commitments emphasizes that performance by developing countries in fighting climate change is legally contingent and only feasible upon the fulfilment of other commitments by developed countries. Whereas the rationale for the principle of differentiated responsibilities is appreciated,[185] it may be criticized that it slows down the universal cooperative progress expected in combating climate change in that action by developing countries in fighting climate change is secondary to performance by developed countries.

2.3.5.2. Sanctions

Sanctions are coercive orders or decisions taken against a state in response to non-compliance. Unlike the Montreal Protocol on Substances that Deplete the Ozone Layer, which ensures implementation through trade sanctions, the UNFCCC does not impose sanctions for noncompliance. The UNFCCC simply relies on the dispute resolution mechanism provided for under Article 14.[186]

2.3.6. Kyoto Protocol to the United Nations Framework Convention on Climate Change

The Kyoto Protocol to the United Nations Framework Convention on Climate Change was adopted on 11 December 1997 in Kyoto, Japan. It entered into force on 16 February 2005 after Russia, a leading industrialized nation, ratified the Protocol.[187] Like the United Nations Framework Convention on Climate Change (UNFCCC), the Protocol invokes the principle of common but differentiated responsibilities[188] in placing heavier burdens on developed states

[184] Ibid., Article 4(7).
[185] See page 40
[186] Ibid., Article 14.
[187] https://unfccc.int/process/the-kyoto-protocol > (accessed on 8/22/2018). See also Sands, P., Principles of International Environmental Law, 3rd ed. (Cambridge University Press, Cambridge, 2012), p. 285.
[188] Article 10 of the 1997 Kyoto Protocol to the United Nation Framework Convention on Climate Change, *FCCC/CP/1997/L.7/Add.1*.

to reduce their emissions, with developing countries being excused due to development and historical reasons.[189] The industrialized countries and the European Community were obligated to reduce their overall GHGs emission by 5% below the 1990 levels by 2012. In achieving this emission target, each of the Annex I member, except Turkey, was apportioned quantified emission limitations that varied depending on their development agenda.

Increased scientific findings on the harmful effects of climate change convinced the Conference of Parties on the need to negotiate a follow-up instrument. This conviction further catalysed the realization that the provisions of Article 4(a) and (b) of the United Nations Framework Convention on Climate Change were not adequate in trying to ensure the stabilization of the greenhouse gases.[190] At the third Conference of Parties, delegates agreed to the adoption of the Kyoto Protocol, which committed developed countries and economies in transition to achieve a quantified emission reduction target.[191]

The Kyoto Protocol did not come into effect without its share of political drama. According to the agreement, it was to come into effect upon ratification by at least 55 nations accounting for a minimum of 55% of the global greenhouse gas emissions.[192] Even before then, negotiations were difficult and complex due to the deep-seated division among the delegates pertaining emission reduction targets, sinks and joint implementation. While these differences got ironed out and consensus reached, complications manifested in reaching decisions on the implementation of commitments and penalty for non-compliance. This resulted in the USA announcing, in 2001, its intention not to ratify the Protocol, thus throwing the success of the Protocol into doubt.[193] At that particular time, USA accounted for more than 36% of the global greenhouse gas emissions.[194] Despite the USA announcement, the remaining member states reached an agreement at the Marrakesh Accords on the implementation mechanisms of the Kyoto Protocol.[195]

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[189] https://unfccc.int/process/the-kyoto-protocol > (accessed on 8/22/2018).
[190] Sands, P., Principles of International Environmental Law, 3rd ed. (Cambridge University Press, Cambridge, 2012), p. 284.
[191] Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, Article 2. *FCCC/CP/1997/L.7/Add.1.*
[192]Ibid, article 25 (1
[193]Philippe Sands, *Principles of International Environmental Law,* (3rd ed. Cambridge University Press, Cambridge, 2012), p. 284.
[194] Understanding thee UN Climate Change Regime <https://www.mtholyoke.edu/~danov20d/site/history.htm > (accessed on 8/22/2018).
[195] http://unfccc.int/cop7/documents/accords_draft.pdf > (accessed on 8/22/2018).

The Kyoto Protocol introduced comprehensive greenhouse gas emission reduction targets for each state party under Annex I. It also introduced the three flexible mechanisms, which assisted state parties to achieve their reduction targets.[196]

2.3.6.1. Commitments

The Kyoto Protocol did not supplant the commitments under the United Nations Framework Convention on Climate Change (UNFCCC), but rather introduced new commitments for developed states.[197] Developing states were still required to meet their commitments under Article 4(1) of the Convention hence Uganda was required to undertake some specified measures and actions towards stabilizing the concentration of greenhouse gases in the atmosphere.[198]

One of the unique features of Kyoto Protocol is the commitment of Annex 1 countries to meet their quantified emission reduction targets within a given timetable. Article 3(1) of the Protocol provides that "Annex I countries shall, jointly or individually, ensure their greenhouse gas emissions amounts do not exceed their commitment levels inscribed in Annex B".[199] According to the Protocol, it was intended that by 2012, if all the Annex I countries implemented their commitments, the overall emission would have reduced by at least 5%, below the 1990 levels.[200] However, before then, some demonstrable progress towards meeting the objective of the Protocol should have manifested by 2005.[201]

The emission targets and commitments within Annex I differed depending on geography and economy. For instance, the bulk of the European Union committed to an 8% reduction of the 1990 levels. Russia, Ukraine and New Zealand committed to stabilize their emissions at 100% of the 1990 levels. While majority of Annex I countries committed to reducing the emissions, a few, namely, Australia, Iceland and Norway, were allowed an increase of 8%, 10% and 1%, respectively because of 'concept of differentiated targets based on a country's particular economic circumstance.'[202]

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[196] Patricia Birnie *et al, International Law and the Environment, (*3rd edn Oxford University Press, Oxford, 2009) 361.
[197] Sands, P., Principles of International Environmental Law, 3rd ed. (Cambridge University Press, Cambridge, 2012), p. 284.
[198] Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, article 10. *FCCC/CP/1997/L.7/Add.I.*
[199] Ibid., article 3.
[200] Ibid.
[201] Ibid., Article 3(2).
[202] https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/archive/kyoto > (Accessed on 5/20/2020).

The commitments undertaken by Annex I countries only focused on six (6) gases. As listed in Annex A, these are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6). While there was strong disagreement on whether to limit the application of the Protocol to three gases, namely, carbon dioxide, methane and nitrous oxide, the negotiations ended up including all the six greenhouse gases under Annex A.[203]

2.3.6.2. Implementation of the Commitments

A list of measures and policies is provided for under Article 2 for the Annex I countries to implement their quantified greenhouse gas emission targets. Although during the negotiations there was a push by eco-centric blocks, such as the European Union, to make the implementation of the policies mandatory,[204] the Protocol adopted a less restrictive language, which considered the national circumstances of concerned states.[205]

The measures contemplated under Article 2 include enhancing energy efficiency, protecting and enhancing sinks and reservoirs of greenhouse gases, promoting sustainable forest management practices, promoting sustainable form of agriculture, conducting research, promotion and development of renewable sources of energy, and encouraging measures that reduce greenhouse gases emissions. These measures are to be undertaken on a cooperative basis among the state parties in accordance with the spirit of transparency, comparability and effectiveness.[206]

2.3.6.3. The Flexibility Mechanisms

The three flexibility mechanisms, namely, joint implementation,[207] clean development mechanism,[208] and international emission trading,[209] established under the Kyoto Protocol are regarded as unique identifiable features of the Protocol. According to Patricia Birnie *et al*, not only did the provision for flexibility mechanisms provide a possibility for Annex I states meeting their reduction targets, but also allowed developing states, such as Uganda, to restrain their emission by allowing green investment in their territory under the concept of

[203]Phillipe Sands, *Principles of International Environmental Law,* (3rd edn Cambridge University Press, Cambridge, 2012) 286.
[204] Ibid., p. 287.
[205] Article 2(1)(a) of the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change *FCCC/CP/1997/L.7/Add.1*.
[206] Ibid, Article 2(1)(b).
[207] Ibid, Article 6.
[208] Ibid, Article 12.
[209] Ibid, Article 17.

CDM.[210] Short of the three flexible mechanisms under the Kyoto Protocol, several countries would not have met their emission reduction targets. Most countries relied on emission credits bought from other complying countries, as discussed below. The concept of flexible mechanisms ensured a balance between development and the obligation to combat climate change. Through these mechanisms, instead of a country jeopardizing its economic development agenda in the name of combating climate change, it would be allowed to further its development by purchasing emission credits elsewhere.

2.3.6.4. Joint implementation

Joint implementation mechanism provides a cost-effective method through which an Annex I country may meet its reduction target by enhancing emission reduction projects in another Annex I, hence generating emission reduction units. Article 6 provides that:

> Any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy.

The application of joint implementation is subject to several conditions, namely, the consent of parties involved;[211] the projects must provide a reduction in emission by source or remove emission by sinks;[212] and joint implementation has to be supplemental to domestic actions.[213]

Not only does joint implementation mechanism provide an Annex I country with a cost-effective way of reaching their emission targets, but also provides the host Annex I country the benefit of investment, information and technology transfer.[214]

2.3.6.5. Clean Development Mechanism

Unlike joint implementation, which is a relationship between Annex I countries, clean development mechanism interlinks an Annex I and non-Annex I country.[215] The link is achieved through the former investing in greenhouse gases emission reduction projects in the

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[210] Patricia Birnie *et al, International Law and the Environment, (*3rd edn Oxford University Press, Oxford, 2009), p. 363.
[211] Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, Article 6(1)(a) *FCCC/CP/1997/L.7/Add.1.*
[212] Ibid., Article 6(1)(b).
[213] Ibid., Article 6(1)(d).
[214] Patricia Birnie *et al, International Law and the Environment, (*3rd edn Oxford University Press, Oxford, 2009), p. 366.
[215] Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, article 12(2). *FCCC/CP/1997/L.7/Add.1.*

latter's territory.[216] The accruing certified emission reduction (CERs) from such projects are to be utilized by the Annex I countries in meeting their reduction obligation under the Protocol[217] as the least developed countries enjoy sustainable development through projects initiated in their territory, which not only ensures general economic growth but also act as a source of livelihoods.[218]

2.3.6.6. International Emissions Trading

Emission trading involves the buying and selling of emission reduction credits among countries specified in Annex B. This is provided for under Article 17, which stipulates that:

> The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3.

However, such trading, pursuant to the Protocol, must be supplemental to domestic actions and the reduction commitment under Article 3.

2.3.7. Shortcomings of the Kyoto Protocol

Notwithstanding Kyoto's contribution in the fight against climate change, it has been criticised for three main reasons, namely, targets for developing countries; the long ratification process; and the enforcement mechanism.

Developing countries were exempted from binding commitments and their compliance was on a voluntary basis. The exemption of China and India from the Protocol was a big blow to the fight against climate change since by 2005, China had overtaken the United State as the largest emitter of GHGs. In 2011, India was the fourth emitter of CO_2 after China, USA and EU-27.[219]

Absence of binding commitment for developing countries significantly affected the Kyoto Protocol. The United States, once the largest GHGs emitter, did not ratify the Protocol because it lacked binding commitments for developing countries.[220] This delayed the Protocol entering into force until 2004 when Russia ratified it, thus meeting the requirement that

[216] Ibid.
[217] Ibid., Article 12(3)(b).
[218] Ibid., Article 12(2).
[219] International Centre for Climate and Governance (ICCG) (2012), Corina Haita, "The State of Compliance in the Kyoto Protocol," ICCG Reflection No. 12/2012, p, 4-5.
[220] Lovett, J. "1997 Kyoto Protocol." 49 Journal of African Law, 1 (2005), p. 95. See also Telesetsky, Anastasia, "The Kyoto Protocol." 26 Ecology Law Quarterly 4 (1999), p. 812-3.

parties ratifying must be responsible for at least 55% of the total 1999 emission from developed countries.[221]

Due to the long ratification process, which resulted into less than three years prior to the beginning of the first commitment period and seven years until the end of the commitment period, parties could not establish comprehensive long-term goals such as engaging in research and shifting to non-GHGs emission technology, for instance, nuclear energy, within the limited period left.

The long ratification process in first commitment period spilled over to the second commitment period. The Doha Amendment is meant to actualize the second commitment period running from 2012 to 2020 and is expected to enter into force upon ratification by at least three fourths of the parties to Kyoto Protocol.[222] Unfortunately, up until 5 November 2018, only 121 of the required 144 have deposited their instrument of acceptance.[223] With the end of the second commitment period set at 2020, it is unlikely the amendment will take effect.

Although the Kyoto Protocol compliance mechanism is lauded as one of the most rigorous and comprehensive for a multilateral environment agreement (MEA),[224] it is still toothless. The Enforcement Branch of the Compliance Committee, responsible for determining whether an Annex I party is complying, has no coercion or sanction powers over a non-compliant party. Its enforcement powers are limited to suspending a non-compliant party from its eligibility to participate in flexible mechanisms and deducting from a party assigned amount for second commitment period.[225] Although a serious failure, the existence of these weak and limited enforcement mechanisms under Kyoto Protocol, is understandable. It was thought

[221] Article 25 of the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change *FCCC/CP/1997/L.7/Add.1*.
[222] Ibid., Article 20(4).
[223] The Doha Amendment <https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment > (accessed on 23/11/2018).
[224] An Introduction t the Kyoto Protocol Compliance Mechanism <https://unfccc.int/process/kyoto-protocol/compliance-under-kyoto-protocol/introduction > (accessed on 23/11/2018).
[225] United Nations Framework Convention on Climate Change, Report of the Conference of the Parties on its Seventh Session, held at Marrakesh from 29 October to 10 November 2001, FCCC/CP/2001/13/Add.3 21 January 2002, Decision 24/CP.7 on Procedures and mechanisms relating to compliance under the Kyoto Protocol. Available at: https://unfccc.int/sites/default/files/resource/docs/cop7/13a03.pdf > (accessed on 23/11/2018).

that if the consequences for non-compliance were to take a punitive approach, several states would have been reluctant to ratify the Protocol.[226]

2.3.8. Post Kyoto

The Post-Kyoto era is characterised by several Conference of Parties, some of which were intended to extend the Kyoto Protocol by introducing the second commitment period running until 2020. Essentially, it was the Doha Amendment that introduced the second commitment period.[227] The outcome of Copenhagen (2009), Cancun (2010), Durban (2011) and Paris (2015) furthered the presumption that climate change is the hardest political dilemma the world has ever faced. Efforts to adopt a framework with meaningful binding commitments, for both developing and developed states, have been thwarted by development agendas and power struggles.[228]

2.3.8.1. Copenhagen Accord

The Copenhagen Accord was agreed at the fifteenth Conference of Parties on 18th December 2009.[229] The Accord was drafted by the United States and Brazil, South Africa, India and China (BASIC states). Due to its non-binding nature, the Accord attracted even states which were not parties to the Kyoto Protocol.

The Copenhagen Conference was expected to supplant the Kyoto Protocol by introducing a legally binding agreement that would attract ratification by the United States, include binding commitments for developing countries, such as India and China, and suggest deep cuts in global emissions.

The Accord was passed in a manner that raised fundamental questions on the relevance of the United Nations in negotiations processes. While decisions at United Nations meetings are consensus based, the Copenhagen Accord was a political declaration that propagated the common interest between the United States and the BASIC States (Brazil, South Africa, India and China).[230] A number of party states, namely, Sudan, Bolivia and Cuba, expressed their

[226] Xueman Wang and Glenn Wiser, "The Implementation and Compliance Regimes under the Climate Change Convention and its Kyoto Protocol." 11 Review of European Community & International Environmental Law 2 (2002), P. 195-6. Available at: https://www.ciel.org/wp-content/uploads/2015/03/Wang_Wiser.pdf > (accessed on 23/11/2018).
[227] FCCC/KP/CMP/2012/13/Add.1, Decision 1/CMP.8
[228] Brian Spak, 'The Success of the Copenhagen Accord and the Failure of the Copenhagen Conference' (Research Paper, American University, Washington D.C, 2010).
[229] FCCC/CP/2009/L.P, 18 December 2009.
[230] Why Cpenhagen failed to deliver. <http://news.bbc.co.uk/2/hi/8426835.stm > (accessed on 27/11/2018).

frustration with the legitimacy of the Accord. [231] This notwithstanding, the Accord was adopted as a voluntary document since coming out of the Copenhagen Conference without an agreement would have resulted into a political humiliation for several delegates.

The Copenhagen Accord contemplated the establishment of the Green Climate Fund as an entity under Financial Mechanism.[232] The Fund sought to support projects, policies, programmes and other mitigation related activities such as REDD+, capacity building, technology development and transfer, and adaptation, which would benefit developing countries.[233]

The provision of finance proved to be the most significant breakthrough for the Copenhagen Accord. Several developed countries pledged to finance actions, policies and programmes in developing countries. Developed countries promised US$ 30 billion for the period 2010-2012 and a further US$ 100 billion per annum by 2020.[234] By 2018, developed countries had raised about US$ 78.9 billion. It is argued that the target of US$ 100 billion will not be achieved until the end of 2021.[235]

Although the Copenhagen Accord mentioned the establishment of the Green Climate Fund, it was not formally established until the 2010 Cancun Conference (COP 16), in Mexico.[236] The Fund's governing instrument was later adopted during the 2011 Durban Conference (COP 17) in South Africa.[237]

The financial assistance to developing countries aside, the Copenhagen Accord failed to tackle climate change robustly. To start with, it was a non-binding political declaration to which states committed voluntarily.[238] Secondly, the Copenhagen Accord did not include a

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[231] Video available at: https://www.youtube.com/watch?v=Vg60wxCtSqs > (accessed on 27/11/2018).
[232] UNFCCC, Copenhagen Accord, FCCC/CP/2009/11/Add.1.
[233] Ibid.
[234] UN Climate Change Conference. < https://unfccc.int/event/copenhagen-climate-change-conference-december-2009-meetings-page > (accessed on 28/11/2018).
[235] Amar Bhattacharya *et el*, "Delivering on the $100 billion Climate Finance Commitment and Transforming Climate Finance," Independent Expert Group on Climate Finance, December 2020, p. 21.
[236] UNFCCC, COP 16, Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010, FCCC/CP/2010/7/Add.1. Available at: https://unfccc.int/documents/6527 > (accessed on 28/11/2018).
[237] UNFCCC, Green Climate Fund, Report of the Transitional Committee, FCCC/CP/2011/9/Add.1, Available at: https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf > (accessed on 28/11/2018).
[238] Executive Secretary, Framework Convention on Climate Change, Notification to Parties, 25 January 2010, Ref: YDB/DBO/drl.https://unfccc.int/files/parties_and_observers/notifications/application/pdf/notification_to_parties_20100118.pdf > (accessed on 28/11/2018). See also Executive Secretary, Framework Convention on Climate Change, Notification to Parties, 25 January 2010, Ref: DBO/drl.

specific deadline for capping GHGs emission. Instead, the Accord urged party states to cooperate in achieving global and national emission peak as fast as possible. Lastly, the Copenhagen Conference manifested a blatant disregard for the principle of consensus. The Accord was drafted by a few states in a fashion that lacked transparency and inclusivity,[239] thus reducing the Copenhagen Accord to a political declaration without any legal basis. Notably, the lack of consensus derailed the call for cooperation in combating climate change.

2.3.8.2. Cancun Agreements

The Cancun Conference was held in Cancun, Mexico from 29 November to 10 December 2010.[240] Two documents were adopted at its conclusion, namely, the Kyoto Cancun Agreement and the Convention Cancun Agreement, both of which committed to help developing countries build sustainable futures, protect themselves against the negative impacts, and support plans to reduce GHGs emissions.

Since the Copenhagen Conference failed to conclude a legally binding agreement that would limit global temperature rise within the range of 1.5 – 2 degrees Celsius, the Cancun Agreements is perhaps a 'sigh of relief' for the overdue soul searching by the UNFCCC regime in the fight against climate change.

The Cancun Agreements were premised on the need to adopt the most comprehensive package that would assist developing countries, such as, Uganda deal with climate change. The move entailed technology, finance and capacity building support to help developing countries adapt to climate change and its impacts. This was achieved through the establishment of the Green Climate Fund as an entity under the UNFCCC's Financial Mechanism,[241]to formalize climate finance. The Fund was designed to manage the long-term funds mobilized during the Copenhagen Conference to support developing countries in adaptation and mitigation actions using thematic funding windows.

The Cancun Agreements cover three main objectives. The first is on adaptation, which is identified as a global goal necessary for achieving the shared vision for a long-term

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https://unfccc.int/files/parties_and_observers/notifications/application/pdf/100125_noti_clarification.pdf > (accessed on 28/11/2018).

[239] Venezuelan President's Speech on Climate Change. <https://www.globalresearch.ca/venezuelan-president-s-speech-on-climate-change-in-copenhagen/16615 > (accessed on 28/11/2018).

[240] Intro to Cancun Agreements. <https://unfccc.int/process/conferences/the-big-picture/milestones/the-cancun-agreements > (accessed on 8/09/2018)

[241] See Article 11 of the United Nations Framework Convention on Climate Change.

cooperative action to combat climate change.[242] The Agreements set adaptation at per with mitigation, the two of which require appropriate institutional arrangement for implementation.

Through the Cancun Adaptation Framework, the Agreements underscore the difficulty experienced by developing and least developed countries in developing and implementing mitigation measures.[243] As a result, the Agreements acknowledge the importance of international cooperation in ensuring technical and financial support particularly to developing countries.

Although the need for prompt adaptation is key, there is no requirement that the actions and measures taken be uniform. The Cancun Agreements offer some latitude for flexibility in that such actions, besides being gender sensitive, should also be country driven.[244] This requirement is well captured under the principle of common but differentiated responsibilities, which equally forms a bedrock of the Cancun Agreements.[245]

The second is mitigation. Developed countries are tasked with the leadership of undertaking ambitious mitigation measures. Just like adaptation, proper institutional empowerment and international cooperation through technology development and transfer are necessary for enhancing mitigation actions.

Developed countries have been accorded specific mitigations roles entailing the submitting of annual greenhouse gases inventories and reports, and supplementary information on noting the success of quantified economic-wide emission reduction. On the other hand, the contribution of developing countries in terms of mitigation action and measure is dependent on the available finance and technology received from developed countries.

The third and final objective is transparency of action. The requirement for transparency is essential in mitigation, capacity building and implementation of actions. This, according to the Cancun Agreements, is to be achieved through international consultation and sharing of information on mitigation actions.

[242] FCCC/CP/2010/7/Add.1. Available at https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf (accessed on 08/07/2019).
[243] Ibid.
[244] Ibid.
[245] Ibid.

2.3.8.2.1. Impact of the Cancun Agreements on developing countries

The Cancun Agreements encouraged parties to adopt ways that reduce pressure on forests, contribute to mitigation actions on forests, and develop national forest reference emission level through REDD+.

REDD+ (Reducing Emission from Deforestation and Forest Degradation) is an incentivised framework that financially rewards developing countries for achieving emission reductions through decreasing the rate at which they convert forest cover to alternative land uses.

REDD+, under the Cancun Agreements, refers to the three added points to REDD. The Cancun Agreements state that:[246]

> Developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forest; enhancement of forest carbon stocks.

The Cancun Agreements succeeded in providing guidelines that assist developing nations in implementing and identifying REDD+ actions. However, the REDD+ framework under the Cancun Agreements does not restrict a developing nation to specific reductions, save that in monitoring the forest activities, they are encouraged to have transparent national forest monitoring systems.

2.3.8.3. Paris Agreement

The Paris Agreement was negotiated at the twenty-first Conference of Parties held in Le Bourget, near Paris, France. The Agreement aimed at strengthening the global response to climate change by keeping global temperatures rise below 2 ^{0}C and further limiting temperature increase to 1.5^{0}C.[247] It entered into force on 4th November 2016 after its ratification by 55 states that contribute 55% of the global greenhouse gases emission.[248]

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[246] FCCC/CP/2010/7/Add.1. paragraph 70. Available at https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf (accessed on 08/07/2019).

[247] The Paris Agreement. <https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement > (accessed on 8/24/2018).

[248] Ibid.

The Agreement was necessitated by the need to strengthen the UNFCCC by attracting the effort and contribution of all Parties. A common cause, which enhanced support to developing countries without imposing binding commitment or new commitments to developed countries, was necessary. As a result, the Parties adopted the Paris Agreement, which introduced a framework for further emission reduction in the future. Parties readily adopted the Paris Agreement because, unlike the Kyoto Protocol that attracted less participation due to its formalistic top-down approach, it emphasized on the bottom-up approach, which was flexible.

2.3.8.4. National Determined Contributions

National Determined Contributions refers to the non-binding national plans which highlight the policies, government measures and targets for GHGs reduction as required under the Paris Agreement. At the heart of the Paris Agreement is a bottom-up approach manifesting through the National Determined Contributions.[249] A bottom-up approach, in the context of climate change, entails the democratic and consultative decision making process whereby Parties decide on their own emission reduction targets without pressure from the UNFCCC. The bottom-up approach attracts all Parties' participation, hence more efficient than the Kyoto Protocol's top-down approach.

The Paris Agreement mandates "each Party to prepare, communicate and maintain successive nationally determined contributions which it intends to pursue".[250] Parties are to be ambitious in adopting the highest possible mitigation measures, with each successive national determined contribution indicating progress.[251]

The Nationally Determined Contribution offers developing states a voluntary opportunity to participate independently in emission reduction without external pressure. On the other hand, developed countries are relieved of the burden of being the only actors in reducing emission, though they retain the leading role.

[249] Paris Accord 2015, article 3 UN. Doc. FCCC/CP/2015/10/Add, 1.
[250] Ibid., Article 4.
[251] Ibid.

2.3.8.5. Sustainable Development Mechanism

Although not specifically referred to as Sustainable Development Mechanism (SDM), the Paris Agreement establishes a mechanism to support sustainable development and mitigate emission of greenhouses gases (GHGs).[252]

The Sustainable Development Mechanism is a successor of the Clean Development Mechanism (CDM), a flexible mechanism under the Kyoto Protocol. They both pursue the same objective in that they facilitate sustainable development and encourage the participation of developing countries in addressing climate change.

2.3.8.6. The bottom-up approach

The Kyoto Protocol was unsuccessful partly because it adopted a top-down approach for emission targets. This approach pegs on universal membership and Parties' consensus on how best to handle an issue cumulatively.[253] Under the Kyoto Protocol, Parties agreed to a centralized target and timeline, which had no specific commitment on the part of the developing countries. Therefore, Kyoto, through the top-down approach, failed to capture emission reductions by major polluters in developing countries, such as India, Brazil, and China.

The Paris Agreement, on the other hand, proposed a bottom-up approach through the proposed National Determined Contributions (NDC). Unlike the traditional and rigid top-down approach, the bottom-up approach is very flexible and inclusive. The Paris Agreement affords Parties the latitude to set their own emission reduction targets based on their political and economic capabilities.

2.3.8.7. Failures of the Paris Agreement

2.3.8.7.1. Non- Compliance and enforcement

Parties to the Agreement are bound to prepare, communicate and maintain their national determined contribution.[254] However, the Agreement does not provide that parties are bound to the contents of their National Determined Contribution. Essentially, failure of a party to live up to their national determined contribution does not attract explicit sanctions because of lack of enforcement mechanism in case of non-compliance. Although the Paris Agreement contemplates the establishment of a Compliance Mechanism, it has not been developed.

[252] Ibid., Article 6(4).
[253] Steinar Andresen, "International climate negotiations: Top-down, bottom-up or a combination?" The International Spectator: 50 Italian Journal of International Affairs 1 (2015).
[254] Article 3, Paris Accord, UN. Doc. FCCC/CP/2015/10/Add, 1.

2.3.8.7.2. Weak pledges

The sum of the pledge undertaken by all Parties is not adequate to limit the global average temperature rise below 2^0C above the pre-industrial levels. The cumulative pledges amount to a third of the emission reduction needed to meet the Paris Agreement temperature goal.[255]

Thus, developed countries need to commit to achieving zero emission goals by mid centaury. The developed states pledged commitments must be globally achieved and consistent with the Paris Agreement, parties need to reflect on their National Determined Contribution to the period 2030.

As for developing countries, parties need to put in place more versatile adaptation plans underpinned by strong institutions and legal frameworks. Application of traditional knowledge and nature-based solutions for adaptation and mitigation will need to be mainstreamed in government policies.

[255] UNEP (2017) The Emissions Gap Report 2017. United Nations Environment Programme (UNEP), Nairobi, p. xiii. <https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?sequence=1&isAllowed=y> (accessed on 7/15/2019).

CHAPTER THREE
UGANDA AND CLIMATE CHANGE

3.1. Introduction

In embracing climate governance, Uganda has signed and ratified the United Nations Framework Convention on Climate Change and the Kyoto Protocol, thus obliging to develop, adopt and implement measures and policy necessary to combat climate change. At the regional level, Uganda has contributed to the development of the East Africa Climate Change Policy, whose aim is to ensure sustainable development in East Africa by harmonizing and coordinating adaptation and mitigations measures.

Measures taken at the national level include the development of the Uganda National Climate Change Policy (which among other things, call for the coordination of the various sectors to ensure synergies) and the Third National Development Plan (which seeks to address the shortcomings of the First and Second National Development Plan). Further, Uganda has reviewed and revised some of the relevant statutes (for instance, the National Environment Act) to make them more responsive to the emerging challenges of climate change.

This Chapter examines Uganda's legal, policy and institutional responses to climate change. The Chapter starts by discussing the national circumstances and the various sectors in Uganda that are susceptible to climate change.

3.2. National Circumstances

Uganda lies across the Equator[256] between latitudes 4^0N and 2^0S and longitude 29^0 and 35^0E. She occupies 241,038 square kilometers[257] with a population of 41.6 million.[258] According to United Nations Development Programme (UNDP), 80% of the population depends on rain-fed agriculture for livelihood,[259] hence the influences of climate change on agriculture

[256] Uganda National Adaptation Programmes of Action < https://unfccc.int/resource/docs/napa/uga01.pdf > (accessed on 1/20/2018).
[257] Ramathan Ggoobi and Julian Barungi, 'Socio-Economic Effects of Chinese Agricultural Investments on the Environment and Local Livelihoods in Uganda.' Advocate Coalition for Development and Environment (ACODE), 2016, Policy Research Paper No. 78, 2016. Kampala, p. 30. Available at: http://www.acode-u.org/Files/Publications/PRS_78.pdf > (accessed on 2/10/2018). See also <http://adaptation-undp.org/explore/eastern-africa/uganda > (accessed on 1/20/2018).
[258] https://www.ubos.org/wp-content/uploads/publications/07_2020WORLD-POPULATION-DAY-BROCHURE-2020.pdf > (accessed on 21/3/2020).
[259] Climate Change Adaptation <http://adaptation-undp.org/explore/eastern-africa/uganda > (accessed on 1/20/2018).

significantly affect the livelihood of most Ugandans. With a growth rate of 3.28%, it is projected that Uganda's population may reach 48.5 million by the end of 2025.[260] Land being finite, the pressure on the limited natural resources will rise. This study does not argue that Uganda should halt her population growth rate, but rather that a population that is ignorant of the dynamics of climate change is likely to worsen the impacts of climate change through its anthropogenic activities.[261]

Uganda experiences moderate temperatures and humid conditions throughout the year due to its equatorial climate.[262] Except in semiarid areas, most areas in Uganda experience wet and dry seasons. Located near the equator, Uganda boasts of two rainy seasons, the first from March to June, and the second from August to November.[263]

Climate in Uganda is classified into highland climate, savannah tropical climate, and semi-arid climate.[264] The highland climate experiences cool temperature and moderate rainfall with a mean annual of 900mm. Such areas are around Rwenzori Mountains. The savannah tropical climate, which consists of the lake basin, experiences high mean annual rainfall of over 1900mm and moderate average temperatures of about 28^0C.[265] The semi-arid climate experiences low annual rainfall of below 887mm and high temperatures of between 26.3^0C and 35.6^0C. This climate is experienced in areas such as Moroto and Mbarara.[266]

The typical tropical climate is of great importance to the national economy and livelihoods of citizens. The good climate supports almost all the sectors in the country, including wildlife and tourism, agriculture, fisheries, forestry and water resources. Variations in climate, due to the impacts of climate change, will ultimately affect the productivity of these sectors, either directly or indirectly. For instance, variation in rainfall pattern significantly affects agriculture, considering that 98% of the sector is rain fed. Fluctuation in water levels, as a result of extreme climatic events, affect hydropower generation. Recent events of elevated

[260] Uganda Bureau Of Statistics <https://www.ubos.org/explore-statistics/statistical-datasets/6133/ > (accessed on 2/10/2018). Compare with World Population Review < http://worldpopulationreview.com/countries/uganda-population/ > (accessed on 2/10/2018).
[261] LTS International (2008), Hepworth, N. and Goulden, M., "Climate Change in Uganda: Understanding the implications and appraising the response," LTS International, Edinburgh. Available at: https://reliefweb.int/report/uganda/climate-change-uganda-understanding-implications-and-appraising-response > (accessed on 2/10/2018).
[262] Climate Change, Uganda National Adaptation Programmes of Action, (NAPA). <https://unfccc.int/resource/docs/napa/uga01.pdf > (accessed on 10/10/2018).
[263] Ibid.
[264] Ibid.
[265] Ibid.
[266] Ibid.

Lake Victoria levels which threatened the Own Falls Dam in Jinja is a testimony to this impact. The mass migration of animals due to drought and floods is a threat to the wildlife and tourism sector. The sharp variation in the climate and the increasing frequency of extreme weather events in Uganda is as result of climate change and, if left unchecked, the resulting ramifications to the various sectors are going to be dire to the national economy. Climate change damage estimates in the agriculture, water, infrastructure and energy sectors collectively is estimated to amount to 2-4% of GDP between 2010 and 2050. Over the next 40 years from 2010-2050, the costs of inaction are estimated at between US$273 - 437 billion.[267]

3.2.1. Agriculture

Agriculture is the dominant sector in Uganda.[268] The sector provides income, food, employment, and raw material for export and internal consumption.[269] During the 1990s, the agricultural sector employed over 80% of the country's labor force and was responsible for 44% of the country's GDP in the period 1996/1997.[270] Unfortunately, according to Uganda Investment Authority (UIA), employment capability dropped to 69% and its GDP contribution to 26% in the period 2015/2016.[271] In 2017, there was an increase in the contribution to employment to 80%, but a decline in the GDP contribution to 22%.[272]

The food crops subsector averages a growth rate of 6.4% while the livestock sector recorded a growth of 2.1% as of 2020. Nonetheless, the overall sectoral growth has fallen short of the 6.0% target projected in the Vision 2040. This slump in performance is attributable to the

[267] Ministry of Water and Environment, Climate Change Department, Economic Assessment of the Impacts of Climate Change in Uganda, November 2015, p. 16. Available at: https://cdkn.org/wp-content/uploads/2015/12/Uganda_CC-economics_Final-Report2.pdf > (Accessed on 2/4/2021)

[268] Ministry of Agriculture, Animal, Industry and Fisheries, Uganda National Agricultural Policy, September 2013, p. 10. Available at: https://docs.google.com/viewerng/viewer?url=http://agriculture.go.ug/wp-content/uploads/2018/06/National-Agriculture-Policy.pdf > (accessed on 2/10/2018). See also National Web Portal (gov.ug) Maintained by Office of the Prime Minister. Available at: http://gou.go.ug/content/agriculture > (accessed on 2/10/2018).

[269] Ministry of Agriculture, Animal, Industry and Fisheries, Uganda National Agricultural Policy, September 2013, p. 10.

[270] Directorate: Marketing, National Department of Agriculture Pretoria, (August 1998), Report on Opportunities in Agricultural Trade and Investment in Uganda, Available at: https://www.nda.agric.za/docs/GenReports/Uganda.htm > (accessed on 2/10/2018).

[271] Uganda Investment Authority, 2018. Available at: http://www.ugandainvest.go.ug/priority-sectors/agriculture-agribusiness/ > (accessed on 2/10/2018).

[272] Republic of Uganda (2017), Ministry of Finance, Planning and Economic Development, State of Uganda Population Report, 2017, p. 3.

sector's inter-seasonal and annual vulnerability to climate change[273] which, if left unchecked, will lead to loss of employment opportunities, hunger and retard economic growth. [274]

3.2.2. Natural Resources

Uganda's natural resource pedestal is one of the richest in Africa. Ugandans heavily rely on natural resources for livelihood.[275] Biodiversity alone has the capability of returning gross earnings of US$ 63.9 billion per year,[276] while agriculture, if sustainably managed, could employ up to 80% of the total population.

Natural resources in Uganda range from the energy sector, wildlife, fisheries, forests, oil and gas, land, to wetlands. Each is discussed herein below.

3.2.2.1. Energy Sector

The intensity of energy consumption determines the economic growth of a country. Uganda's energy mix comprises biomass, hydroelectricity and petroleum, which contribute 96.5%, 2 % and 1.5%, respectively, to the total energy consumed.[277]

Despite the diversification of energy through geothermal, solar and wind resources, most of the population relies on biomass for cooking and heating, with charcoal being produced using low efficient traditional kilns.[278] Although the government has set up a national rural electrification program to extend electricity supply to rural areas, wood fuel is still the dominant source of energy because of its cheapness and for being a faster means of cooking and heating than the other sources in the rural areas.[279]

The discovery of petroleum resources in Uganda provides an opportunity for further economic growth. Though production has not yet commenced, appraisal drilling, seismic survey and well tests have been undertaken. These efforts have been buttressed by the

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[273] Uganda Third National Development Plan (NDPIII) 2020/21 -2024/25, p. 62.
[274] Republic of Uganda 2015, Ministry of Water and Environment, National Climate Change Policy, April, 2015, p. vi.
[275] Ivan Amaniga Ruhanga and Jacob Manyindo, Uganda's Environment and Natural Resources: Enhancing Parliament's Oversight (UWS and UNEP/GRID-Arendal, Birkeland Trykkeri, Norway, 2010). Available at: https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/191/original/uganda-hand-book.pdf?1486715726 > (accessed on 3/10/2018).
[276] Ibid., p. 5.
[277] Ibid., p.17.
[278] Marembo Micheal *et al*, "Uganda's Energy Security Based on Prospects, Challenges, Opportunities, Supply, and Demand towards Achieving a Green Energy-Reliant Environment," 2 International Journal of Energy Engineering 8, 2018, p. 40.
[279] Ibid., p. 46.

adoption of the National Oil and Gas Policy (NOGP),[280] which is meant to ensure sustainable production of oil and gas discovered in the country's Albertine Grabel,[281] capable of producing up to 6 billion barrels of oil.[282] Other areas, beside Albertine Grabel, with potential for hydrocarbon exploration include Hoima basin, Lake Wamala basin, and Lake Kyoga basin.[283]

Though the discovery of petroleum should be lauded as an opportunity to fight poverty and open up employment opportunities for Ugandans,[284] it also poses environmental risks. Most discoveries so far are in sensitive ecosystems, such as national parks and lakes. In most cases, the community living around petroleum production sites whose main source of livelihood is dependent on agriculture, fisheries and farming, will suffer significantly because such economic activities are sensitive to the effects of hydrocarbon exploration.

3.2.2.2. Wildlife, Tourism and Biodiversity Sector

When Winston Churchill christened Uganda '*The Pearl of Africa'*[285] it was because of its phenomenal aesthetic beauty, expressed by stunning glacier mountain-tops, august variety of terrestrial and aquatic animals, the rainforests, and savannah land.[286]

The exceptional biodiversity of Uganda supports the tourism industry, which is a source of revenue and income for the government and the citizens. Ranking among the top ten most bio-diverse countries in the world, Uganda is home for 53.9% of the remaining population of endangered mountain gorillas worldwide and hosts 18,783 species of fauna and flora.[287]

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[280] National Oil and Gas Policy for Uganda, 2014.
[281] Republic of Uganda (2017), Ministry of Energy and Mineral Development, "Progress Of Implementation of the National Oil and Gas Policy for Uganda," February 2017. Available at: http://pau.go.ug/uploads/Status_Policy_Implementation.pdf > (accessed on 3/10/2018).
[282] International Alert (2011), "Oil and Gas Laws in Uganda: A legislator's Guide," Oil Discussion Paper No. 1, May 2011. Available at: https://www.international-alert.org/sites/default/files/publications/18-Oil-web.pdf > (accessed on 3/10/2018).
[283] Ivan Amaniga Ruhanga and Jacob Manyindo, Uganda's Environment and Natural Resources: Enhancing Parliament's Oversight (UWS and UNEP/GRID-Arendal, Birkeland Trykkeri, Norway, 2010). Available at: https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/191/original/uganda-hand-book.pdf?1486715726 > (accessed on 3/10/2018).
[284] The policy goal for Uganda National Oil and Gas Policy is "to use the country's oil and gas resources to contribute to early achievement of poverty eradication and create lasting value to society."
[285] Winston Spencer Churchill, *My African Journey*, (Richard Clay & Sons, Limited, Bread Street Hill, E.C and Bungay, Suffolk, 1909), p. 198. Available in e-book at: http://www.gutenberg.org/files/43035/43035-h/43035-h.htm > (accessed on 3/10/2018).
[286] Ibid., p. 152.
[287] Uganda Wildlife Authority (UWA), 2018. Available at: http://www.ugandawildlife.org/ > (accessed on 3/10/2018). See also The Republic of Uganda 2014, Ministry of Tourism, Wildlife and Antiquities, Uganda Wildlife Policy 2014.

While Columbia holds the record for the highest number of bird species, Uganda follows closely behind at 1063 species, representing 50% of the Africa's species.[288]

As of 2014, the wildlife sector was estimated to have directly employed 800,000 people. Revenue collection grew to Uganda shillings 46 billion from 3.3 billion in 2000. The diversity of species makes wildlife and tourism the leading foreign exchange earner in Uganda.[289]

However, human population, terrorism threats, and climate change, pose a threat to the benefits of such an impressive flora and fauna in Uganda. The effects of climate change are already evident on Mt. Elgon through the landslides which have resulted in damage to infrastructure and death. The biodiversity in and around the Mt. Elgon National Park has also been affected by floods, human encroachment and deforestation.[290]

To protect endangered species from the effects of climate change, the Uganda Wildlife Policy aims at promoting climate change awareness, adaptation and mitigation.[291] UNDP, through the funding of the Danish Embassy, has also implemented the Territorial Approach to Climate Change Project, that intends to provide coordinated mitigation and adaptation plans to heighten climate change resilience,[292] including the Mt. Elgon National Park area.

3.2.2.3. Fisheries Sector

Uganda is endowed with an array of natural water bodies, namely, Lakes Victoria, George, Kyoga, Albert, and River Nile. These rich water resources not only make Uganda the second largest aquaculture producer in sub-Saharan, after Nigeria,[293] but also secure employment and revenue for Uganda. The fisheries sector employs over 700,000 people and earns Uganda an estimate of US$ 124 million per year in export revenue.[294] As a result of the strict

[288] The Republic of Uganda 2014, Ministry of Tourism, Wildlife and Antiquities, Uganda Wildlife Policy 2014.
[289] Ibid.
[290] Adonia Kamukasa Bintoora, "Initiatives to combat landslides, floods and effects of climate change in Mt Elgon Region," in Radhika Murti and Camille Buyck (eds) *Safe Havens: Protected Areas for Disaster Risk Reduction and Climate Change Adaptation* (IUCN, Gland, Switzerland, 2014), p. 132-133.
[291] The Republic of Uganda 2014, Ministry of Tourism, Wildlife and Antiquities, Uganda Wildlife Policy 2014, p. 15.
[292] Adonia Kamukasa Bintoora, "Initiatives to combat landslides, floods and effects of climate change in Mt Elgon Region," in Radhika Murti and Camille Buyck (eds*) Safe Havens: Protected Areas for Disaster Risk Reduction and Climate Change Adaptation* (IUCN, Gland, Switzerland, 2014), p. 133.
[293] FAO (2018). Available at: http://www.fao.org/fishery/facp/UGA/en >(accessed on 4/10/2018).
[294] Ivan Amaniga Ruhanga and Jacob Manyindo, *Uganda's Environment and Natural Resources: Enhancing Parliament's Oversight* (UWS and UNEP/GRID-Arendal, Birkeland Trykkeri, Norway, 2010). Available at: https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/191/original/uganda-hand-book.pdf?1486715726 > (accessed on 3/10/2018).

enforcement of the fisheries regulations, the fisheries sub-sector recovered from a decline of -2.1% in 2017/18 and grew at 11.3% in 2018/19.

The contribution of the fisheries sector to the economy is threatened due to the vulnerability of fisheries resources to the impacts of climate change. An increase in mean temperature, extreme weather events, and shifting precipitation pattern,[295] threaten the lakes, rivers and aquaculture fisheries resources.

Most of the fish species in Uganda, such as tilapia and Nile perch, are freshwater, hence ectotherms. Unlike endotherms, which rely on their internal processes, such as metabolism, to maintain a stable body temperature, ectotherms cannot use physiological processes, and so rely on their ambient temperature to sustain a stable body temperature. Therefore, an increase in surrounding temperature affects their physiology, reproduction, metabolism and growth to fatal extents.[296] A decrease in the quantity of fish would, consequently, affect employment, income earned and revenue to the government.

3.2.2.4. Forestry Sector

The sector plays a vital role in Uganda. It supports other sectors, such as agriculture, wildlife and tourism, and energy.[297] The majority of the rural population depends on the forests for energy in the form of charcoal and firewood. The sector also sustains Uganda's ecology through adaptation to impacts of climate change.[298]

The sector employs more the 850,000 and contributes 6% to the national GDP.[299] This contribution stems from the 698 gazetted forest reserves and private forests. With such a

[295] The World Fish Center, 2012, B. Timmers, "Impacts of Climate Change and Variability on Fish Value Chains in Uganda," Project Report No 2012-18, The World Fish Center, Penang, Malaysia.
[296] Ashley D. Ficke *et al*, "Potential impacts of global climate change on freshwater fisheries," Rev Fish Biol Fisheries 17, (2007), p. 583-4. Available at: https://changingclimate.osu.edu/assets/pubs/ficke-2007.pdf > (accessed on 10/10/2018).
[297] Ivan Amaniga Ruhanga and Jacob Manyindo, Uganda's Environment and Natural Resources: Enhancing Parliament's Oversight (UWS and UNEP/GRID-Arendal, Birkeland Trykkeri, Norway, 2010). Available at: https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/191/original/uganda-hand-book.pdf?1486715726 > (accessed on 3/10/2018).
[298] NEMA (2017), Julius Muyizzi *et al*, "National State of the Environment Report 2016/17: Restoring the Environment for Livelihood Improvement and Sustainable Economic Development," NEMA, Kampala, p. 121. Available at: http://nema.go.ug/sites/all/themes/nema/docs/NSOER%202016_2017.pdf > (accessed on 10/10/2018).
[299] Ivan Amaniga Ruhanga and Jacob Manyindo, Uganda's Environment and Natural Resources: Enhancing Parliament's Oversight (UWS and UNEP/GRID-Arendal, Birkeland Trykkeri, Norway, 2010). Available at: https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/191/original/uganda-hand-book.pdf?1486715726 > (accessed on 3/10/2018).

huge reserve, it becomes necessary to involve various stakeholders in the management. The Uganda Wildlife Authority (UWA) manages forests located within national parks. The National Forest Authority (NFA) manages central forest reserves, and the local governments manage local forests reserves.[300]

Unfortunately, climate change poses a serious threat to these forest reserves. Contributing factors include deforestation to meet the increasing demand for agricultural land, and the increasing human population, all of which are straining the resources. It is estimated that between 1990 and 2005, Uganda lost almost 27% of its original forest reserves because of the aforementioned factors.[301]

Kalanga District, extensively covered by forests in 1990, had been converted to farmland, especially the southern part of Bugala Island, by 2005.[302] By 2015, both the southern and northern parts had been reduced to palm oil plantations.[303] Similarly, Katuugo and Kasagala Central Forest Reserves have been, in the recent past, converted to large-scale agriculture.[304] At such a rate, the reserves are likely to be exhausted by 2050 if informed actions and responses are not undertaken.

3.2.2.5. Water and Wetlands Sector

Wetlands play a critical role in reducing the impacts of climate through carbon sequestration. They not only act as carbon storage but also regulate the emissions of greenhouse gases in the atmosphere.

The wetlands and water resources in Uganda are under constant pressure. To begin with, flooding, which is because of climate change, affects the quality of surface and underground water.[305] Secondly, encroaching settlements, wetlands mismanagement, and agriculture have

[300] Ibid.
[301] Ibid.
[302] NEMA (2017), Julius Muyizzi *et al*, "National State of the Environment Report 2016/17: Restoring the Environment for Livelihood Improvement and Sustainable Economic Development," NEMA, Kampala, p. 130. Available at: http://nema.go.ug/sites/all/themes/nema/docs/NSOER%202016_2017.pdf > (accessed on 10/10/2018).
[303] Ibid.
[304] Ibid., 134.
[305] Kundzewicz, Z.W., *et al,* (2007) "Freshwater Resources and Their Management. Climate Change 2007: Impacts, Adaptation and Vulnerability." In: Parry, M.L., *et al* (eds)., Contribution of Working Group 11 to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, (Cambridge University Press, Cambridge, UK, 2007). See also https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-water-resources_.html > (accessed on 10/10/2018).

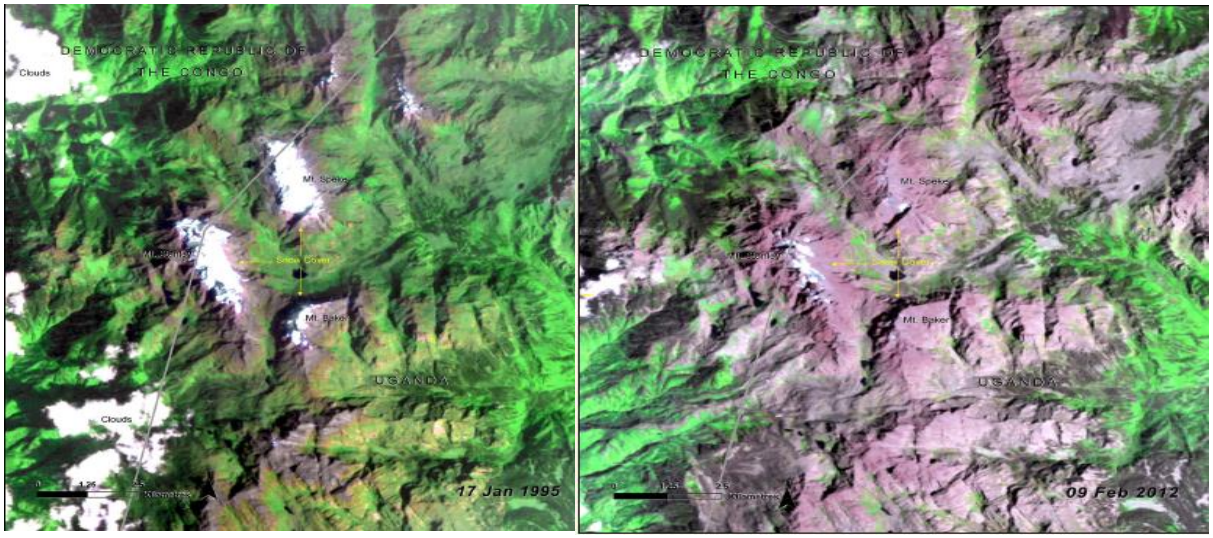
led to the decline of wetlands cover from 13% to 8.6% between 1990 and 2015.[306] Wetland cover is reducing at an alarming rate of 21,000 hectares per year. Having recorded a cover of about 4.5 million hectares in 1990,[307] at such a rate of depletion, Uganda is likely to have no wetlands left by 2040.[308]

3.3. Uganda and Climate Change

Climate change impacts on Uganda's development agenda is felt in all the sectors critical to the economy. The adverse effects are readily manifest in the deterioration of sensitive ecosystems, such as ice caps on Mt Rwenzori, the failing agricultural sector, intense droughts because of deforestation and forest degradation, and decreased revenue from tourism due to the encroachment into forests and wildlife reserves. On Rwenzori, the receding ice caps are an explicit exhibit. Satellite images from 1987 to 2005 depict a decrease in glaciers on Baker, Stanley and Speke peaks.[309] Between the two periods, the glacier on Rwenzori which, a century ago, covered nearly 6.5 km^2, has decreased by almost 50%. At such an alarming rate, the glacier will disappear in the next 20 years.[310]

Informed by the damage that climate change does to development, Uganda has responded by ratifying and domesticating the UNFCCC, the Kyoto Protocol and the Paris Agreement, into its municipal laws.

[306] NEMA (2017), Julius Muyizzi *et al*, "National State of the Environment Report 2016/17: Restoring the Environment for Livelihood Improvement and Sustainable Economic Development," NEMA, Kampala, p. 13. Available at: http://nema.go.ug/sites/all/themes/nema/docs/NSOER%202016_2017.pdf > (accessed on 10/10/2018).
[307] Ibid.
[308] Ibid.
[309] Ministry of Health Uganda (2009), Namanya Didacus Bambaiha, "An Assessment of the Impact of climate change on the Health Sector in Uganda: A case of Malaria and Cholera epidemics and how to improve planning for effective preparedness and response." Uganda, May 2009, p. 11. Available at: http://www.health.go.ug/docs/climate.pdf > (accessed on 10/11/2018). See also the 2015 Uganda National Climate Change Policy, p. 6. Available at: http://www.mwe.go.ug/sites/default/files/library/National%20Climate%20Change%20Policy%20April%202015%20final.pdf> (accessed on 12/10/2018).
[310] Ibid.



Glaciers on the Speke, Stanley and Baker peaks are important water sources for the lower plains. They have been declining due to higher air temperatures, reduced snow accumulation and declining cloud cover during the 20th century. Some experts believe they will be gone within the next 20 years (UNEP, 2015).

3.3.1. Vulnerability to climate change

Vulnerability means the "degree to which a system is susceptible to damage".[311] Vulnerability is a factor of exposure, sensitivity,[312] and ability to cope with the effects of climate change and recover from them.[313] Least developed countries, such as Uganda, are vulnerable because their ability to cope and recover from the impacts of climate change are dwarfed by poverty, lack of technical skills, limited financial resources, corruption, poor prioritization, weak institutional structure, poor legal and policy frameworks, and an unstable economy dependent on natural resources.[314]

Although the effects of climate change are felt throughout Uganda, the extent of vulnerability differs from region to region as well as among the population. For instance, women, children and persons with disabilities are more exposed to the effects of climate change than men. Women suffer more because of the multiple tasks they undertake in households. On the other hand, children are vulnerable due to the malnutrition and diseases occasioned by the climate

[311] Environmental Alert (2010), "Climate Change in Uganda: Insights for Long Term Adaptation and Building Community Resilience," Environmental Alert, An Issues Paper, July 2010.
[312] Ibid., p. 25.
[313] IIED (2005), Twinomugisha Ben, "A Content Analysis Reports on Climate Change Impacts, Vulnerability and Adaptation in Uganda." IIED, Mar 2005, p. 9. Available at: http://pubs.iied.org/pdfs/10011IIED.pdf > (accessed on 10/10/2018).
[314] Ibid.

change.[315] However, this study does not suggest that adaptation measures should focus only on women, persons with disability and children, but rather be structured to address the needs of these population groups.

Sector-wise, agriculture, forestry, and wetlands, prove to be the most vulnerable ones.[316] Wetlands, which support fishing, recreation, ecological sustenance and provide water for households consumption and industrial use are significantly susceptible to climate change because of non-climate stressors, such as clay and sand mining, pollution and drainage for agriculture. Polluting wetlands adversely affects the quality of water and fish productivity. The fish industry is already suffering from the effects of overfishing, habitat degradation and pollution, and, hence, climate change further aggravates the harm.

The forestry sector is susceptible to the effects of climate change due to non-climate stressors, such as deforestation and degradation. Finally, agriculture, which is employs almost 80% of Uganda work force and ensures food security, is the most vulnerable due to sensitivity of crops to temperature changes, humidity, variable rainfall patterns, lower soil moisture levels, higher rates of evapotranspiration, drought, pest and diseases, and floods.

3.3.2. Uganda's Response to Climate Change

In 2002, Uganda submitted its First National Communication to UNFCCC. Later, in 2014, it submitted the National Adaptation Programme of Action (NAPA), which was followed by the Second National Communication in 2014. The submission of NAPA makes Uganda, a least developed country, eligible for funds from Least Developed Countries Fund (LDCF).

As a state party to the UNFCCC, Uganda is obliged to adopt and operationalize policies and measures designed to mitigate climate change. In response, a number of policies, legal frameworks and institutions, have been established over the years. Institutional capacity development is however still lagging behind, undermining the country's opportunity to fully benefit from some of the innovative legal regimes put in place.

[315] Environmental Alert (2010), "Climate Change in Uganda: Insights for Long Term Adaptation and Building Community Resilience," Environmental Alert, An Issues Paper, July 2010.
[316] CARIAA (2016), International Development Research Centre, Ottawa, Canada and UK Aid, London, United Kingdom, Review of current and planned adaptation action in Uganda. CARIAA Working Paper no. 19.

3.3.2.1. Flexibility mechanisms in Uganda

Flexibility mechanisms also known as the Kyoto mechanisms as defined under the Kyoto Protocol are aimed at lowering the overall costs of achieving emissions targets. These mechanisms, namely, Emission Trading, Clean Development Mechanism and Joint Implementation, allow Parties to achieve emission reductions or to remove carbon from the atmosphere cost-effectively by investing in other countries.[317]

The Kyoto Mechanisms have contributed significantly towards the fight against climate change in Uganda. The first-ever CDM deal in Africa was launched in Uganda, that is, the West Nile Electrification Project. The project sourced financial support from the Prototype Carbon Fund (PCF) and aimed at promoting socio-economic development in rural Uganda as well as to reduce energy Carbon dioxide emissions that cause global climate change. The project was, in 2001, identified as a potential CDM project and was accordingly projected to generate carbon finance revenue from the sale of Carbon dioxide emissions reduction. Further, the Project was expected to reduce the demand for diesel fuel and prevent transport related GHG emissions from fuel trucks.[318]

The project cast the West Nile region on a development trajectory, particularly regarding sustainable energy. Since the inception of the project, Uganda has reported a reduction in the exploitation of forest resources and burning fossils. The project has as well informed the regeneration of forest in Kibale and Mount Elgon which are not only carbon sinks but also nature-based tourist centre, earning Uganda significant revenue.

Uganda also became the first African country to register a Program of Activities by launching the Municipal Waste Compost Program. The program aimed at reducing dangerous methane emissions in the atmosphere under Kyoto's Clean Development Mechanism (CDM) by setting up sustainable waste composting facilities in Ugandan municipalities. The various projects generated from the program are financed by the revenues emanating from compost and carbon credits. In return, the projects have improved the organic content of the soil, reduced methane emissions and prevented land degradation.[319] These benefits have not only

[317] https://unfccc.int/process/the-kyoto-protocol/mechanisms > (accessed on 4/4/2021)
[318] https://cdm.unfccc.int/filestorage/P/1/G/P1GHO7ERDMZN2KV6XUW5YFQCBL9I40/Revision%20of%20PDD-West%20Nile_v2.pdf?t=UEJ8cWUwZ3JufDCH0v4hjYUVxQXBkRw15if5 > (Accessed on 4/20/2020).
[319] Kyoto Protocal 1997 < https://www.worldbank.org/en/news/press-release/2010/07/26/uganda-shows-way-on-scaling-up-carbon-mitigation > (Accessed on 5/20/2020).

positively impacted the agricultural sector but have assisted in combating climate change through a reduction in methane emission.

3.3.2.2. Policy and Program Response

3.3.2.2.1. Uganda National Adaptation Programmes of Action (NAPA), 2007

The UNFCCC stipulates that the state parties should take into consideration "the specific needs and special situations of least developed countries (LDCs) in their actions with regard to technology transfer and funding".[320] In implementing this provision, NAPA was introduced in 2007 as an avenue for least developed countries to identify and prioritize adaptation activities.[321]

Uganda launched its NAPA process in 2007.[322] The preparation of NAPA involved experts from the most vulnerable sectors, namely, agriculture, water resources, health, and forestry and wildlife. The conspicuous internal player was the Ministry of Water, Land and Environment, while external players included focal institutions from UNFCCC and the Kyoto Protocol. The process was guided by the principle of the participatory approach. [323] The participatory rural appraisal (PRA) approach facilitated the collection of data and relevant information from targeted districts.

Uganda identified nine projects under NAPA, which required an urgent response. These were "community tree growing projects, land degradation management projects, strengthening meteorological services, community water and sanitation project, water for production project, drought adaptation project, vectors, pests and disease control project, indigenous knowledge (IK) and natural resources management project, and climate change and development planning project".

A countrywide implementation of these projects would have cost US $39.8m. The Community tree growing project was considered the topmost priority based on the contribution of forests to economic development and livelihood of Ugandans. Forests provide

[320]United Nations Framework Convention on Climate Change 1992, article 4(9).
[321] UNFCCC (2018), National Adaptation Programmes of Action (NAPA). Available at: https://unfccc.int/topics/resilience/workstreams/national-adaptation-programmes-of-action/introduction > (accessed on 10/11/2018). See also CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), (2016), Nyasimi M *et al*, "Uganda's National Adaptation Programme of Action: Implementation, Challenges and Emerging Lessons." Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org > (accessed on 10/11/2018).
[322] Republic of Uganda, Climate Change: National Adaptation Programmes of Action (NAPA), 2007. Available at: https://unfccc.int/resource/docs/napa/uga01.pdf > (accessed on 23/10/2018).
[323] In the Foreword of the Uganda National Adaptation Programme of Action, 2007.

99% of the rural energy, habitat for the mountain gorillas, which earns the country Ushs 2.7 billion yearly in tourism and contributes 6% to the national GDP.[324]

NAPA did not see the light of the day without a number of challenges. The overarching obstacle was lack of funding. Worse, not all of the allocated funds were disbursed to the respective projects hence, some were not fully implemented. Secondly, coordination among the different stakeholders at the national, district, sub-county, and village levels proved difficult, hence delaying the implementation process.

Thirdly, the prolonged effects of drought, as a result of climate change/variability, made the implementation of the tree project a hard nut to crack. Most seedlings died before planting due to lack of water and the intense heat. This was further exacerbated by lack of skills and training on tree nursery management amongst the farmers. Finally, lack of weather stations and equipment delayed weather information, hence derailing decision making and preparation.

Despite the challenges, NAPA left an indelible mark in the Uganda climate change struggle. NAPA paved the way for the establishment of Climate Change Unit (CCU). Through its collaborative approach towards implementation, NAPA was a revelation for other sectors to adopt the interdependence approach in handling implementation, especially where cross-cutting issues are involved. In addition, NAPA underscored the importance of involving the local communities in governance.

3.3.2.2.2. Vision 2040

Vision 2040 was developed by the National Planning Authority in consultation with government institutions in Uganda and other stakeholders.[325] Vision 2040 builds on Uganda's past visions, namely, Vision 2025 and the 2035 Drafts. Vision 2040 strives to incorporate emerging development prospects, such as the discovery of oil and gas, economic integration, globalization and long-term planning lesson learnt from East Asian countries, such as Singapore, South Korea, Malaysia and Thailand.[326] Vision 2025 and 2035's efforts were futile due to lack of policy, legal and institutional frameworks to set the two visions on a development path.

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[324] Ibid., p. 51.
[325] NPA (2018): http://npa.ug/uganda-vision-2040/ > (accessed on 10/13/2018).
[326] Uganda Vision 2040, p. 3. Available at: http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf > (accessed on 23/10/2018).

Through Vision 2040, Uganda hoped to graduate to a middle-income economy by 2017 and by 2040, attain a per capita of US$ 9500. As it turned out, the 2017 milestone of middle-income status did not materialize. The Vision recognizes that the effects of climate change in Uganda are manifested by changing rainfall pattern, drought, high temperatures and frequent floods. These ramifications affect all the sectors of the economy, hence calling for preparedness. Although Uganda had expressed this preparedness through the formulation of NAPA, NDP-I, Renewable Energy Policy and the Disaster Management and Preparedness Policy, progress on ameliorating the effects of climate change is still insignificant due to poor understanding of climate change, thus poor mitigation and adaptation measures.

Furthermore, climate change is afforded insufficient attention, both financially and politically, hence the lagging in implementation of the available policies. The Vision promises to incorporate climate change in the sector and local governments' budgets and plans. It also suggests the preparation of adaptation and mitigation mechanisms in all sectors to increase Uganda's resilience to climate change. In addition, the Vision contemplates the strengthening of policies and institutional structures on climate change with emphasis on mainstreaming structures and systems at national and local levels.[327]

3.3.2.2.3. East Africa Community Climate Change Policy (EACCCP)

EACCCP was signed on 20th November 2009 in Arusha, Tanzania at the 11th Summit with the hope that it would address the impacts and the increasing threats of climate change in the East Africa region.[328] It was also a culmination of the Community's objective to develop policies for strengthening cooperation among the partners, namely, United Republic of Tanzania, Kenya, Uganda, Rwanda and Burundi.[329]

The policy identifies the impacts of climate change on rain-fed agriculture, a key sector to livelihoods of people and economic development. Other vulnerable sectors include wetlands, wildlife and forestry ecosystems.[330] In this regard, the Policy sets out seven objectives, namely, implementing collective measures to address climate change, promoting awareness and information of climate change, establishing a regional climate change harmonization and implementation framework, spelling out priority actions and roles of respective states,

[327] Ibid., pp. 101-102.
[328] East Africa Community Climate Policy 2010.
[329] Article 112 of the 1999 East Africa Community Treaty.
[330] Supra, note 96, p. I.

facilitating resource mobilization to implement climate change actions and programmes, developing predictive models to ensure strategic response and preparedness for future climate change impacts; and promoting capacity building including technology transfer, information sharing and training.

The achievement of the aforementioned objectives is guided by a number of principles, including, partnership and collaboration, prioritization of regions, sectors and communities, mainstreaming climate change in National Development Plans (NDPs) and carrying out adaptation and mitigation actions without compromising social and economic development.[331]

Unlike most policies, the EACCCP does not establish new institutions to execute the objectives. The policy requires the Secretariat to work in conjunction with relevant government agencies, organs of the Community, Lake Victoria Fisheries Organization,[332] Lake Victoria Basin Commission,[333] Inter-University Council of East Africa,[334] relevant Sectoral Committees and Sectoral Council of Ministers for Environment and Natural Resources.

3.3.2.2.4. National Policy on Disaster Preparedness and Management

The Policy was adopted in 2010 and is located in the Department of Relief, Disaster Preparedness and Management under the Ministry of Disaster Preparedness and Management. It aims at creating a practical framework through which disaster preparedness and management is entrenched,[335] and proposes the establishment of institutions and mechanisms which would reduce the vulnerabilities of Uganda's wildlife, livestock, plants, and people to the impacts of disasters.[336]

The policy affirms the problems of climate change as real with evident effects, namely, landslides, floods, drought, and environmental degradation, which cumulatively compound the threat to Uganda's economy. It, therefore, recommends the development of adaptation

[331] Ibid., p. 5.
[332]East Africa Community- Lake Victoria Fisheries Organization: http://www.lvfo.org/ > (accessed on 23/10/2018).
[333]Lake Victoria Basin Commission (2018): https://www.lvbcom.org/ > (accessed on 23/10/2018).
[334] https://www.iucea.org/ > (accessed on 23/10/2018).
[335] See the Mission of the 2010 National Policy for Disaster Preparedness and Management. Available at: https://www.ifrc.org/docs/IDRL/Disaster%20Policy%20for%20Uganda.pdf > (Accessed on 3/11/2020).
[336] Ibid., p. 2.

and mitigation strategies by the government and calls for active participation in international and regional efforts.

3.3.2.2.5. National Environmental Management Policy (NEMP) 2014

This policy replaced the 1995 National Environmental Management Policy (NEMP) to incorporate the new emerging trends in environmental governance in terms of climate change, strategic environmental assessment, cross boarder/transboundary natural resource management, biosafety and biotechnology, green economy and sustainable development.[337] These new issues rendered the 1994 NEMP obsolete, hence necessitating the 2014 NEMP.

The Policy recognizes climate change as a threat to the environment and natural resources, and economy of Uganda. One of its objectives is to ensure all stakeholders harmoniously address the impacts of climate change through the necessary mitigation and adaptation measures.

The Policy identifies several guiding principles necessary for combating climate change, namely, re-defining climate change as a development issue, providing and promote incentives for Clean Development Mechanisms (CDMs), promoting the development and adoption of an integrated approach to address the effects of climate change, mainstreaming climate change in all development policies, programs and projects, promoting effective response to climate change induced disasters; and promoting implementation of climate change conventions.

3.3.2.2.6. National Climate Change Policy (NCCP) 2015

NCCP was adopted in 2015 to reinforce climate resilience through a harmonized and coordinated approach that would ensure sustainable development. It is also a response to the constraints identified in NDP-I, namely, lack of policy on climate change and inadequate institutional resource.[338] Like UNCED, the policy endeavors to integrate development and environment by providing that all stakeholders shall address the causes and impacts of climate change through appropriate measures while at the same time ensuring sustainable

[337] Uganda National Environment Management Policy (NEMP), 2014, p. vii. Available at: http://enr-cso.org/wp-content/uploads/2014/12/Draft-Final-National-Environment-Management-Policy-Dec-2014.pdf > (accessed on 18/10/2018).

[338] Republic of Uganda, National Development Plan 2010/11-2014/15, April 2010. Available at: http://www.fao.org/fileadmin/user_upload/drought/docs/Uganda_NDP_April_2010.pdf > (accessed on 23/10/2018), p. xix

development.[339] However, NCCP also boasts of other specific objectives, such as identifying and promoting common policy priorities, adaptation policy, mitigation policy and prediction policy, to handle climate change.

Several principles guide NCCP, namely, promoting community-based approaches to adaptation, mainstreaming and coordinated response to climate change, communicating effectively and promoting participatory approaches, devoting adequate attention to capacity development and institutional set-ups, identifying, developing and influencing financing mechanisms, providing a credible delivery structure, addressing cross-cutting issues; and devoting adequate attention to technology needs, development and transfer.

Just as NAPA, NCCP identifies agriculture, water, energy and transport as the most vulnerable sectors and hence the most affected by the impacts of climate change and recommends the adoption of a legal and regulatory framework on climate change. It recognizes the absence of a comprehensive legal framework as a hindrance towards translating policy priorities into actions. Consequently, it suggests the amending of the 1995 National Environment Act to include climate change and, secondly, enacting an independent climate change law that would promote the prioritization of climate change issues.[340]

3.3.3. National Development Plans

The current national development plan in Uganda is the Third National Development Plan 2020/21-2024/25 (NDP-III) which aims at addressing the challenges noted in the First National Development Plan (2010/11-2014/15) and Second National Development Plan (2015/16-2019/20).

The First National Development Plan (NDP-I)

NDP-I was adopted in 2010 to cover the fiscal period between 2010/11 to 2014/15.[341] The Plan replaced the Poverty Eradication Action Plan (PEAP) and aimed at accelerating socio-

[339] Uganda National Climate Change Policy, 2015, p. 13. Available at: http://www.mwe.go.ug/sites/default/files/library/National%20Climate%20Change%20Policy%20April%202015%20final.pdf > (accessed on 18/10/2018).
[340] Ibid., p. xi.

[341] Republic of Uganda, National Development Plan 2010/11-2014/15, April 2010. Available at: http://www.fao.org/fileadmin/user_upload/drought/docs/Uganda_NDP_April_2010.pdf > (accessed on 23/10/2018).

economic transformation in the hope of changing Uganda from a peasant to a prosperous country within 30 years.[342]

In achieving the theme, NDP-I put forward eight strategic objectives, namely, enhancing the availability and quality of gainful employment, increasing household incomes and promoting equity, improving stock and quality of economic infrastructure, increasing access to quality social services, promoting science, technology and innovation and ICT to enhance competitiveness, strengthening good governance, defense and security, enhancing human capital investment and promoting sustainable population and use of the environment and natural resources. [343]

NDP-I identified various challenges that prevented Uganda from achieving a relatively higher per capita income. These include poverty, poor policy and regulatory framework, weak institutional structures, and inadequate data and information.[344] According to NDP-I, 70% of the government sectors had obsolete, absent or weak policy frameworks,[345] a condition which enabled the effects of climate change and vices, such as corruption, to thrive.

NDP-I was the second most comprehensive plan, after NAPA, to contextualize climate change in detail. NDPI attributed the poor performance of the Uganda Climate Change regime to, inter alia, critical shortage of expertise, poor mainstreaming and coordination mechanisms, and lack of reliable scientific data and funds on climate change. Like NAPA, NDP-I proposed the domestication of UNFCCC and Kyoto Protocol. Further, it advocated for strengthening the mandate and capacity of CCU, development of National Climate Change Policy, awareness, training and education on climate change, implementation of NAPA, participation in climate change fora, and following up on commitments and obligations under the UNFCCC and its protocols.

The Second National Development Plan (NDP-II)

NDP-II covers the fiscal period between 2015/16 – 2019/20 and builds on the progress and achievements of NDP-I.[346] It also endeavors to mitigate the challenges of NDP-I by taking advantage of the regional and global development opportunities in the hope of achieving

[342] Ibid., p. 1.
[343] Ibid., pp. 38-9.
[344] Ibid., p. 27.
[345] Ibid.
[346] Government of Uganda, Second National Development Plan 2015/16 – 2019/20, 3rd March 2015, p. 9. Available at: http://npa.ug/wp-content/uploads/NDPII-Final.pdf > (accessed on 23/10/2018).

Vision 2040. NDP-II highlights thirty-one challenges faced in the implementation of NDP-I. One of the major challenges, closely related to climate change, was the inadequate preparedness to respond to natural disasters such as drought, landslides and floods, all of which are extreme climatic events occasioned by climate change.

NDP-II considers Uganda's climate as the most valuable natural resource because it supports almost all sectors, including agriculture, forestry, and wildlife and tourism. Consequently, climate change poses a great threat to these sectors. In response, NDP-II suggests the mainstreaming of climate change adaptation and mitigation by factoring the cost of mitigating climate change in long term planning, strengthening resilience through increasing food security, poverty reduction, education, enhancing the integrity of ecosystems, integrating climate change measures into national policies, and implementing commitments under the UNFCCC and its protocols.[347]

The Third National Development Plan (NDP-III)

NDP III is premised on the challenges, progress and lessons learnt from NDP-I and NDP II. The plan identifies key outstanding challenges faced over the years, namely, uncoordinated approaches to implementing planning, severe reduction in forest cover, wetland degradation and encroachment, dwindling local revenue to fund local service delivery, income inequality, prevalence of corruptions and low capacity in public service.

The Plan is also cognizant of the effects of climate change and has identified eighteen (18) programs among them the Climate Change, Natural Resource, Environment and Water Management Programme that aim at stopping and reversing the degradation of natural resources, water resources, environment and the impacts of climate change on livelihood security and economy growth.

The Plan, however, notes that poor management of water, environment and natural resources has resulted into low disaster risk planning, rampant degradation of the environment, poor coordination and institutional capacity gaps in planning and implementations. It also notes a significant dwindling in the forest cover from 15% in 2010 to 9.5% in 2017 and a wetland degradation from 11.9% in 2012 to 10.9% in 2017, hence, sets out assorted objectives for the Climate Change and Natural Resource Programme, namely, increasing forest, trees and

[347] Ibid., p. 91.

wetland coverage, reducing climate change vulnerability and carbon footprint, and reducing human and economic loss from natural hazards and disaster.

The Plan envisages achieving these objectives through, among others, promoting continuous integration of climate change in planning, budgeting and reporting, development and implementation of integrated catchment management plans for water resources catchment areas, issuing carbon footprint certificates to support carbon neutrality, demarcation and gazettement of conserved and degraded wetlands, finalizing the development of a national Green House Gas Inventory and its monitoring, Reporting and Verification system, development of a national green growth financing and investment plans and building partnership with relevant stakeholders.

3.3.4. Legal Response

Uganda has made effort in formulating and enacting several laws to implement United Nations Framework Convention on Climate Change (UNFCC) and integrate Uganda's commitment in tackling climate change in national development agenda. Uganda's legal response has ensured sustainable development by addressing environmental issues such as deforestation, pollution and low awareness on climate change.

3.3.4.1. 1995 Uganda Constitution

The 1995 Constitution is the *grundnorm* law in Uganda. It empowers parliament to enact laws necessary for the protection of the environment and imposes a duty on citizens to create and protect a clean and healthy environment.[348]

The duty to protect the environment also extends to the state. Chapter XXVII provides that "the state shall promote sustainable development and public awareness on management of the environment in a sustainable and balanced manner for the present and future generations".[349]

All laws on environment, including the climate change regime in Uganda, are because of the implementation of Article 245, which obligates the legislative arm to "provide, by law,

[348] 1995 Constitution of Uganda, Article 17.
[349] Ibid.

measures intended to protect and preserve the environment from pollution, degradation and abuse".[350]

3.3.4.2. National Environment Act, 2019

The National Environment Act 2019 was assented to on 24th February 2019. It repealed the National Environment Act of 1995 because the former did not conform to the new government's plans and policies on emerging environmental issues, namely, climate change, petroleum activities, and management of plastic products.

3.3.5. Institutional Response

Uganda has established and empowered several institutions for the purposes of implementing its commitments under the UNFCC, namely, National Environment Management Authority (NEMA), National Planning Authority (NPA), Uganda Wildlife Authority (UWA), Ministry of Water and Environment (MWE), and the Climate Change Unit within the Ministry of Water and Environment.

3.3.5.1. National Environment Management Authority (NEMA)

NEMA was established in May 1995 by the National Environment Act of 1995[351] to regulate, coordinate, monitor and supervise environmental management in Uganda.[352] NEMA is the lead institution in coordinating the implementation of government policies, including the recent National Climate Change Policy (NCCP), proposing environmental policies and strategies, promoting awareness through formal, informal and non-formal education on environmental issues, and ensuring observance of proper safeguards on the environment.[353]

The 2019 National Environment Act widens the functions of NEMA by providing for climate change functions, advising the government on international and regional environmental conventions and being the focal point for supporting the implementation of international environmental agreements.

NEMA has put its best foot forward in executing its mandates and functions. it is, however, limited in terms of funding which affect staff development and skills. NEMA is also not adequately empowered to police the implementation of its proposed policies and regulations.

[350] Ibid.
[351] Uganda National Environment Act, 1995 (repealed), section 4.
[352] Uganda National Environment Act, 1995 (repealed), section 5.
[353] Ibid., section 6.

3.3.5.2. National Planning Authority (NPA)

NPA was established by the National Planning Act,[354] pursuant to Article 125 of the Constitution.[355] The role of the Authority is to develop comprehensive and integrated development plans. The Authority is expected to integrate environment, socio-economic and political dimensions of development into the national plans for development. Other functions of this Authority include co-coordinating and harmonizing development plans, reviewing high priority development issues, monitoring and evaluating the effectiveness and impacts of development programmes and supporting local capacity development for national planning.

Under the watch of NPA, most ministries have integrated climate change issues into their annual work plans to ensure implementation of the climate change policy. NPA, on the other hand, has to ensure that the integrated plans and reports, submitted quarterly and semi-annually by the concerned institutions, are reviewed.[356]

The National Climate Change Policy identifies the NPA as a key player in combating climate change. The Policy acknowledges the critical roles to be performed by the National Planning Authority towards the implementation of the Climate Change Policy.[357]

3.3.5.3. Uganda Wildlife Authority (UWA)

UWA was established by the Uganda Wildlife Act[358] to coordinate, monitor and supervise sustainable management of wildlife resources.[359] Section 5 of the Uganda Wildlife Act highlights the functions of the Authority as, among others, developing and recommending policies on wildlife management, ensuring sustainable management of wildlife conservation areas, establishing policies and procedure for sustainable utilization of wildlife resources and promoting scientific research and knowledge on wildlife and conservation areas.

In light of the Uganda Wildlife Policy 2014, UWA has incorporated climate change mitigation and adaptation measures in its management plans. For instance, UWA is soon to declare protected areas certified for carbon. It is also fast-tracking the planting of tress within protected areas to implement forest restoration measures identified under the Policy.

[354] Uganda National Planning Act, No. 15 of 2002.
[355] The Constitution of Uganda, 1995.
[356] Uganda Climate Change Policy, 2015, p. 41.
[357] Ibid., p. 42.
[358] Uganda Wildlife Act, 1996.
[359] Ibid., section 5.

3.3.5.4. Climate Change Unit

The Climate Change Unit, also referred to as Climate Change Department (CCD), was established in 2008 as one of the measures towards addressing climate change.[360] The Unit is located under the Ministry of Water and Environment (MWE) and aims at strengthening the implementation of the UNFCCC and the Kyoto Protocol in Uganda.[361]

The Unit is overseen by the Climate Change Policy Committee, chaired by the Permanent Secretary of Ministry of Water and Environment and has fourteen members of various public and public institutions. The committee provides guidance on matters related to climate change and assisting the Ministry to undertake decisions on carbon finance,[362] and harmonizing institutional mandates and policies related to REDD+ Strategy development.[363] There is also an Inter-Institutional Climate Change Technical Committee (ICCTC) mandated to facilitate the exchange of information between the Unit and the respective institutions.

The CCU plays a significant role in the development of Uganda's climate change regime. Its key achievement was the facilitation of the development of the 2015 National Climate Change Policy (NCCP),[364] necessary for the implementation of Clean Development Mechanisms (CDM), capacity development projects, and public awareness by educating Ugandans on CDM projects.[365]

3.4. Conclusion

Whereas Uganda has endeavored to address and locate issues of climate change in the above discussed laws and institutions, there are several gaps and limitations within the legal and institutional frameworks as are interrogated in the next Chapter.

The absence of a stand-alone Act of Parliament is of particular significance because National Climate Change laws are important, translating national commitments to international obligations into implementable actions at the National level.

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[360] Climate Change Department (2018). < http://ccd.go.ug/about-us/ > (accessed on 22/10/2018).
[361] Ibid.
[362] Ibid.
[363] Ministry of Water and Environment (2015) <https://redd.unfccc.int/files/annex_2_miniutes_of_ntc_meeting_at_entebbe_1-2_december__2015-b_1_.pdf > (accessed on 22/10/2018).
[364] USAID (2015) <http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Uganda_ETOA%202015.pdf > (accessed on 22/10/2018).
[365] Ibid.

CHAPTER FOUR

UGANDA'S LEGAL AND INSTITUTIONAL FRAMEWORKS ON CLIMATE CHANGE

4.1. Introduction

This chapter discusses the effectiveness of the legal and institutional frameworks in Uganda on climate change. It specifically looks at the impact of the legal and institutional frameworks on climate change responses, and the existing gaps.

4.2. Effectiveness of Legal and Institutional Frameworks

Climate change is an environmental threat that raises cross cutting issues. Uganda has grappled with ensuring that its legal regime successfully responds to climate change through several ways.

4.2.1. A duty imposed by the Constitution

The Constitution of Uganda has, indirectly, provided for climate change by imposing an obligation on the state to utilize natural resources in accordance with the principle of intergenerational equity.[366] The state is further obligated to take measures in preventing and minimizing damage to land, air and water.[367]

The Constitution also imposes a duty on every citizen to create and protect a clean and healthy environment.[368] The duty goes hand in hand with the right to a clean and health environment.

In addition, the Uganda Constitution requires Parliament to provide for measures that prevent environmental degradation.[369] These measures are intended to ensure environmental awareness and sustainable development.[370] The constitution imposes an obligation on the

[366] Constitution of Uganda 1995, Objective XXVII(ii).
[367] Ibid.
[368] Ibid., Article 17(1)(j).
[369] Ibid, Article 245.
[370] Ibid.

Government to put in place measures that protect the public from the adverse impact of environmental degradation, including climate change. It also provides an overarching framework for individual citizens to demand action from Government in this respect.

4.2.2. Restoration of the Degraded Environment

Activities, such as deforestation, wetlands destruction and pollution, predominantly catalyze the degradation of environment and exacerbate the impacts of climate change. The legal regime in Uganda has expressly directed specific focus towards the restoration of the degraded environment and prescribes the responsibility for this action. For instance, the National Environment Act decentralizes several aspects of environmental management under the supervision of NEMA and encourages local authorities to mobilize people within their jurisdiction to initiate community actions to restore the degraded environment by planting trees and protecting wetlands,[371] as well as formulating byelaws that ensure the maintenance of environmental integrity.

In 2020, for example, NEMA engaged 1,065 community members (320 in Maziba, 296 in Awoja and 449 in Aswa) in action planning for ecosystem conservation.[372] Further, it grants the National Environment Management Authority the power to issue environmental restoration orders.[373] The orders are effective because they are both reactive and preemptive. They can be issued to require a person to restore the environment to the state it was before the degrading action or to prevent one from undertaking an action that may potentially harm the environment.[374]

Although this provision is noble and has been largely very effective, it is constrained by lack of capacity to monitor the compliance with orders due to inadequate personnel to cover the entire country.

4.2.3. Mainstreaming the Environment and Climate Change in Development Plans

The exploitation of the environment triggers economic development. With increase in the rate of exploitation, so is the pressure on the environment and the threat on ecologically sensitive

[371] Uganda National Environment Act 2019, section 57(2)(repealed).
[372] Ministry of Finance, Planning and Economic Development, 'Stimulating the Economy to Safeguard Livelihoods, Jobs, Business and Industrial Recovery' Background to the Budget, June 2020, p. 159.
[373] Uganda Environment Act 2019, section 129(2)(a) (repealed)
[374] Ibid., Section 130(2)(b).

areas. As a result of the tension between economic growth and the protection of environment, the principle of sustainable development became imperative.

Uganda's policy regime recognizes the relationship between climate change and development. For instance, the National Climate Change Policy acknowledges that addressing climate change is key to enhancing sustainable economic and social growth.[375] The National Development Plans recognize that climate change negatively affects the economy of Uganda through its adverse effects on important sectors supporting the economy. Further, Vision 2040 considers climate change a threat to all the sectors supporting the economy of Uganda and calls for preparedness through mitigation and adaptation measures.

The Government has taken measures to mainstream climate change adaptation in some of the key sectors of the economy like forestry, agriculture, energy and infrastructure. In the forestry sector, Uganda has mainstreamed the REDD+ program which forms a part of the country's National Climate Change Policy that aims for a "harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development". It is an international mechanism for providing result-based payment for reducing emissions from deforestation and forest degradation. It offers an opportunity for the country to undertake conservation of its forests while at the same time providing livelihood opportunities for local communities.

Uganda is one of the few REDD+ participating countries in Africa with a dedicated budget to support REDD+ activities as the program is integrated in the Macro-Economic Investment Plan, Mid Term Investment Plan and the Water and Environment Sector Investment Plan. The focus in the Agriculture sector has been on improving Agro-advisory services that include climate applications, such as climate smart agriculture technology.[376] This is, however, being constrained by the limited farmers' capacity to adopt new technology and the general lack of extension services in the country. There are also efforts to improve the dissemination of climate information by the Meteorology Authority to advise farmers on planting, which has reduced farmers' vulnerability to climate change-induced weather patterns.

[375] Uganda National Climate Change Policy 2015.
[376] Ministry of Agriculture Animal Industry and Fisheries, Ministry of Water and Environment. 2015. Uganda Climate Smart-Agriculture Country Program 2015-2025.

For the energy sector, the Government has prioritized developing Uganda's energy mix to accommodate the increasing and anticipated demand for energy and to promote green growth. Deliberate measures to increase generation have drastically addressed the endemic problem of power shortages and caused a reduction in energy tariffs. Government has also supported and promoted alternative energy sources, such as the adoption of solar energy for lighting, especially in rural areas. Access to clean energy (electricity) has improved from 14% in 2014 to 28% in 2019, and the total installed capacity is currently 1,254 MW compared to 867 MW in 2014. The energy mix is dominated by hydropower at 89%. Uptake of solar power has, however, been increasing steadily, especially in the rural areas. About 20.7% of the rural population have access to solar energy.[377]

For infrastructure, adaptation measures have been identified and the relevant institutions for their implementation. These include integrating climate change into the existing infrastructure risk assessment guidelines and methodology, to be led by the Ministry of Water and Environment; establishing and enforcing climate change– resilient standards for transport and infrastructure planning and development through monitoring and reporting systems led by Ministries of Transport, Public Works and Water and Environment.

4.2.4. Response to Emerging Issues

Uganda has strived to streamline its legal regime with the emerging international best practice and recent discoveries within its territorial jurisdiction. Amongst the recent developments are the discovery of oil in the Albertine Graben, the escalating effects of climate change (especially floods and drought) disaster and risk management, and technological advancements (such as e-waste and smart agriculture)

A number of laws and policies in Uganda have undergone review and amendment to inculcate the new developments in climate change. Parliament has made recommendations to operationalize the Contingency Fund as provided for in Section 26 of the 2015 Public Finance Management (PFM) Act so that government efforts to avert risk and manage disasters are adequately funded. The standing Committee on Climate Change of Parliament

[377] Ministry of Finance, Planning and Economic Development, "Stimulating the Economy to Safeguard Livelihoods, Jobs, Business and Industrial Recovery" Background to the Budget, June 2020, p. 145.

has also made proposals to introduce the Climate Fund as part of the Contingency Fund where a certain potion of environmental levies goes to financing climate related disasters.[378]

The National Environment Act of 1995 has been repealed by the National Environment Act of 2019. The 2019 Act makes provision for climate change management, which was missing in the 1995 Act. The 2019 Act proposes to manage the impacts of climate change on ecosystems through improving their resilience, promoting development of low carbon and conserving forest carbon stock.[379]

With the discovery of petroleum in Albertine Graben, the National Environment Act of 2019 seeks to address environmental concerns arising from petroleum exploration and midstream activities.[380] On the other hand, the National Climate Change Policy recommends that, with the discovery of oil, new technologies be adopted to transit Uganda to a low carbon economy.[381]

4.2.5. Public Participation and Benefits Sharing

The Constitution of Uganda, in illuminating democratic principles necessary for political stability, requires the government to empower and encourage active participation of its citizen.[382] Public participation is the involvement of concerned stakeholders in decision-making, plans and policy formulation, to ensure quality service, accountability and strengthened democracy. As argued by Stela Bastidas, a government that fails to inculcate public participation in its decision-making renders democratic governance meaningless.[383]

Uganda has endeavored to ensure her legal, policy and institutional frameworks are effective by incorporating the concept of public participation in its climate change regime. This has been realized through benefit sharing and public-private participation. The rationale has been that promoting local communities and private sector involvement would boost sustainable management of various ecosystems due to the pressure for accountability, proper decision-making process, and the need for transparency.

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[378] https://parliamentwatch.ug/the-civil-society-organisations-cso-meets-the-parliamentary-standing-committee-on-climate-change/ > (Accessed on 14/4/2021).
[379] National Environment Act, 2019, section 68.
[380] Ibid.,
[381] Uganda National Climate Change Policy 2015, p. 11.
[382] Constitution of Uganda Constitution, 1995, preamble.
[383] Stela Bastidas, "The Role of Public Participation in the Impact Assessment of Trade Process," Canadian Institute for Environmental Law and Policy (2004). < http://www.cielap.org/pdf/publicparticipation.pdf> (accessed on 14/4/2021).

4.2.5.1. Benefit Sharing

Some institutions affiliated to climate change management in Uganda have gone beyond the objective of public participation. In a bid to minimize conflict and ensure strong cooperation between citizens and the organs of government, several institutions have welcomed the idea of common resources utilization and benefits sharing. For instance, the Uganda Wildlife Authority (UWA) shares its gate collection fee with communities neighboring protected areas. Between 2014 and 2016, the Authority disbursed over 7 billion shillings to neighboring communities.[384]

Resource benefit sharing between institutions and neighboring communities has facilitated the sustainable management of some sensitive ecosystems in Uganda, such as the forest in the Mount Elgon region. The co-management of some regions by UWA and the neighboring communities has also prevented the unstainable harvesting of forest products, hence revamping the fight to combat climate change in Uganda.[385]

4.2.6. Public-Private Partnerships

Private stakeholders play a critical role in the development process. To ensure the private sector actively engages in partnership projects with the public, governments usually makes provision for conducive legal and institutional frameworks.

The Uganda Environmental Policy has adopted the concept of public-private partnership in its provisions. The policy commits to restoring the value of various ecosystems through undertaking afforestation and forestation on public and private land. It also seeks to promote private investments by promoting commercial tree planting.[386]

Vision 2040 also acknowledges the private sector as the engine of development in Uganda. Besides the government investments, private sector is one of the quasi-market approaches that Uganda hopes to pursue in fostering socio-economic transformation.[387] Further, the Vision seeks to combat climate change by harnessing and promoting renewable sources of

[384] Julius Muyizzi *et al* 'Restoring the Environment for Livelihood Improvement and Sustainable Economic Development,'National State of the Environment Report 2016/2017, NEMA, Kampala, p.118.
[385]Uganda National Climate Change Policy 2015, p. 21.
[386] Republic of Uganda, National Environmental Management Policy for Uganda, 2014.
[387] Uganda Vision 2040 < Uganda Vision 2040 – National Planning Authority (npa.go.ug) > accessed 14/4/2021.

energy and identifies the private sectors as a source of finance, made possible through public-private partnership.

4.3. Gaps and Shortcomings in the Legal and Institutional Frameworks

No legal regime can be said to have perfectly and completely legislated on climate change. This is because climate change is a dynamic issue, with law on constant revision to catch up with its contemporary issues. A legal regime may also be imperfect, not because of the dynamic nature of climate change, but due to unwillingness to properly legislate on climate change. This part discusses the failures and gaps affecting Uganda's climate change regime.

4.3.1. Scattered Climate Change Regime

Although the Climate Change Policy in Uganda calls for a stand-alone legislation on climate change, Uganda is yet to enact one. Its laws on climate change are scattered through the sectors related and affected by climate change. The laws have not been consolidated into a coordinated legislative framework, which ensures access to information and enforcement mechanisms.

In addition, the absence of specificity makes it difficult for Uganda to track the extent to which the scattered laws have contributed in mitigating climate change. This is partly due to lack of coordination amongst the various institutions governing the various sectors that are susceptible to the effects of climate change. In the absence of a climate change legislation, the various institutions need to cooperate in information sharing and dissemination for the purposes of monitoring progress and compliance.

4.3.2. Dissemination of Climate Change Information

Climate change calls for a collaborative approach that involves various stakeholders, such as the citizens and private sector, whose participation towards fighting climate change is pegged on access to information through awareness. Majority of Ugandans lack knowledge on climate change due to poor dissemination of climate change information. Dissemination of climate change information is spontaneous and not specifically anchored in a government programme, with dedicated funding. Similarly, the private sector has resorted to profit making agenda without regard to climate change during decision making due to scanty information and ways of incorporating climate change in the daily business routine.

Although the legal regime on climate change in Uganda has contemplated public participation in the fight against climate change, access to climate change information is not specifically prescribed. Besides sensitivity and adaptive capacity of people, access to information greatly influences a society's vulnerability to the impacts of climate change.[388]

While the public sector seems to have not prioritized access to climate information through the legislation and institutional mechanisms, intergovernmental organizations including actors such as FAO, UNDP and UNEP, play a pivotal role in assisting Uganda on climate change adaptation and are deliberately addressing the shortcoming in their programs.[389] FAO, is focusing on strengthening the knowledge and capacities of institutions and communities to access and use climate change-related information for food security. Accordingly, it has established an equipped climate change-resource-centre, a one-stop centre, for information and data on climate change in Uganda.[390] There is, however, still more work to do as the rural farmers, who need the climate related information most, may not readily access the center at the moment, let alone the information disseminated to them in the appropriate language.

4.3.3. Climate Change Incentives

International best practice on climate change has seen the development of various economic instruments as means of regulation. Amongst them, focus has been on investment incentives,[391] which aim at intensifying investment in clean technologies.

Although Uganda has identified the use of incentives, such as emissions-trading revenues and tax incentives and schemes, its full potential towards fighting climate change is both limited and has not yet been felt, particularly due to the long-term nature of some of the investments and the inadequate guidelines for monitoring compliance with the conditions agreed upon in the incentive agreements.

For instance, under the National Climate Change Policy, the use of incentives is only limited to three sectors of the economy, namely, forestry, fisheries and energy. Compared with Kenya, in addition to the three sectors, incentives are applicable to the water sector, industrial

[388] V. Kirui Cherotich, "Access to Climate Change Information and Support Services by the Vulnerable Groups in Semi-Arid Kenya for Adaptive Capacity Development," 20 African Crop Science Journal, 2 (2012) p. 169 – 180.
[389] FAO in Uganda < http://www.fao.org/uganda/fao-in-uganda/uganda-at-a-glance/en/ (accessed on 6/20/2019).
[390] Ibid.
[391] Sands, P., Principles of International Environmental Law , 3rd ed. (Cambridge University Press, Cambridge, 2012), p. 130.

process sector, and transport sector.[392] Similarly, the concept of incentives is simply theoretical, that is, existing on paper. Most SMEs are still reluctant to invest because of the absence of the incentives necessary for reducing the high cost of climate change actions.[393]

4.3.4. Poor Coordination and Mainstreaming

The various sectors susceptible to climate change lack coordination in terms of resource sharing and consultation. Due to budgetary constraints the sectoral institutions still focus on their traditional statutory mandates before allocating any unencumbered resources to climate change mitigation activities. This has made the issue of main streaming climate actions in sectoral activities become an afterthought to the institutions. Government has tried to address this weakness in the new National Environment Act of 2019, under section 69 which gives NEMA oversight responsibilities of ensuring coordination. NEMA, however, has to develop the capacity and mobilize resources to undertake this new task.

The decentralized system of government in Uganda also plays a major role in the coordination constraints. Funding opportunities pose a great obstacle at the local government levels. Currently, Uganda is tackling climate change through the decentralized system by delegating the implementation of adaptation actions to the grassroots. Although this method of governance enhances public participation, the local levels of government usually fail to make provisions for climate change because of other competing priorities.

The limited finances leave the local level of governments with no better option than to focus on the centrally designed priorities such as food security and infrastructure. Such an option jeopardizes the implementation of effective adaptation and mitigation plans to address the effects of climate change. Although Uganda has identified climate change as a national priority the commitment has not been matched with increased funding levels to the local authorities.

4.3.5. Funding for Implementation Purposes

Uganda heavily relies foreign donor support to finance climate change action, complimented by some local resources. The local sources are in accordance with the national budget, while the foreign funding is in fulfilment of the undertaking by Annex II countries to provide

[392] National Climate Change Action Plan, 2013-2017. <https://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf.> accessed on 6/20/2019).
[393] Susan Nanduddu, "An outlook of Uganda's Climate Finance Landscape," Actade,(2017) Kampala, Uganda, p. 15.

financial resources to meet costs incurred by developing countries in fulfilling their commitment to communicate implementation information.

The financing is dominated by external inflow from bilateral, multilateral and UNFCCC sources, such as the Green Climate Fund, Least Developed Countries Fund, and Special Climate Change Funds.[394] The Government of Uganda and United Nations Development Programme (UNDP) in 2019 launched a new project on "*building community resilience, wetlands ecosystems and associated catchments in Uganda",* which is Uganda's first Green Climate Fund-financed initiative. Details from it shows "at least 800,000 people in and around the wetlands will directly benefit from the project".

The project is also set to "improve the lives of some of the most vulnerable people in Uganda, dependent on subsistence agriculture and wetlands for their livelihoods". Other areas include "improved sustainable management of the wetlands, increased skills for employability and entrepreneurship capacity to start new businesses, and accurate and reliable climate information will have a transformational impact on people's lives in the targeted areas".[395]

The procedures and conditionalities required to access some of these external financial sources makes them not readily available to respond to immediate needs of communities. The process to access some of this funding can take up to three years. For instance, as far as funding under the Kyoto Protocol is concerned, foreign financial assistance from Annex II countries is conditional upon Uganda periodically developing and updating her national inventory of anthropogenic emissions. The inventories should be made available to the Conference of Parties.

So far, Uganda has made two communications to the Conference of Parties, the first in 2002 and the last in 2014.[396] The difference in years between the two communications is so huge as to defeat the intention of conducting a periodic update. Weak institutional frameworks also affect foreign funding. The preparation of periodic inventories is dependent on availability of quality data as appropriately captured by the relevant institutions related to climate change.

Unfortunately, most responsible institutions lack capacity to collect and manage quality and timely data to underpin a credible inventory. The available personnel are neither experts nor

[394]Ibid.
[395] UNDP Project portal < *https://www.gcfprojects-undp.org/tp/project/5711* > (accessed on 11/ 3/ 2021)
[396] Republic of Uganda, Ministry of Water and Environment, Climate Change Department (CCD), Uganda Second National Communication to the UNFCCC, October, 2014, p ii.

appropriately trained on matter climate change. Despite the inventory preparation constraints, Uganda has received a great deal of foreign financial assistance.

Between 2010 and 2012, Uganda received more than US$ 264 million from developed countries. The amount was to finance, *inter alia*, a number of mitigation projects, such as the NAPA projects in Apac, Bundibugyo, Pallisa and Nakasongola, the Agriculture Adaptation to Climate Change (AACC) project projected at 14 million Euros, and the US$ 1 million Territorial Approach to Climate Change (TACC) project.[397] Unfortunately, due to institutional disorganization, the mitigation finance end up being mismanaged with very little impact on the ground.

On the other hand, public financing is plagued by institutional infancy and weak private sector involvement, the two of which have led to poor budgeting on climate change. Although there is now a policy framework for expenditure on climate change, Climate change expenditure does not feature in Uganda's national budget. Notwithstanding a climate change expenditure of 0.2% of the GDP (which is way below the recommended 1.6%) and a projected National Climate Change Policy implementation cost of US$ 3 billion, Uganda is yet to reflect these expenditures into her national budget. Being that climate change is addressed through the various sectors, there is no specific budgeting for climate change. The grim assumption is that from the amount set aside for the various sectors, there exists some unspecified amount meant for climate change.

This approach makes it difficult to quantify the sum of funds used in combating climate change. It also raises the issues of accountability. While the problem is due to lack of a specific sector and legal regime handling climate change, the Ministry of Finance also plays a significant role in heightening this problem. The ministry does not prioritize climate change in its national budget. No such fund as 'climate change fund' exists during budgeting. As a result, climate change in Uganda solely depends on private funding from non-governmental organisations and UNFCCC finance mechanisms.

The coding of climate change expenditure into the national budget has been delayed because the available budget cannot sustain other priorities, leave alone her commitment to the UNFCCC. Therefore, while policies and laws of various sectors are sensitive to climate

[397] Ibid., p. 11.

change, none of them commits the government to allocate funds for implementation purposes.

Just like in prioritizing agriculture, Uganda should budget for climate change in its national budgets. During the disbursement and allocation of funds to the various sectors, a specific figure should be stipulated for climate change. This will eliminate instances of mismanagement and misapplication of funds. Moreover, the move will assist in data collection and the monitoring of climate finance progress.

4.3.6. Research

Appropriate actions to address the adverse impacts of climate change, are dependent on the technological, social and economic mechanism adopted from research outcome. Unfortunately, research is limited in Uganda due to financial capability, expertise and technological constrains.

Apparently, legal provision for research is not the problem. The National Environment Act mandates NEMA to undertake research and disseminate environmental information.[398] The National Climate Change Policy identify research as a specific strategy.[399] The problem is in the implementation of such provisions. Lack of funds has made the implementation of research strategies an exercise in futility. In addition, many sectoral institutions in Uganda lack the required expertise qualified to undertake research in climate change.

The issue of research is, therefore mainly due to institutional weaknesses occasioned by inadequate financing and the very small number of researchers who can dedicate efforts to research on the subject. This has a negative impact on Uganda's response to climate change effects as some of the interventions are not usually informed by applied science, in some cases leading to failures, for example, crop suitability in the face of climate-induced water stress or extreme weather events.

4.3.7. Public awareness

Although Uganda has enacted sectoral policies and laws directed towards enhancing adaptation to climate change, appropriate packaging of information to galvanize the grassroot stakeholder engagement is still weak. Information dissemination is usually in news media

[398] Uganda National Environment Act, 1995, section 6(1)(j).
[399] Uganda National Climate Change Policy, 2015, p. 25.

like radios and televisions, which are not readily accessible to the rural population, and sometimes in a language not understood by the majority.

The traditional knowledge is also not taken into account when articulating the climate change issues, making them appear totally new. It is, therefore, important to unpack climate science in local context and have targeted communication strategies including politicians and the general public. An informed citizenry facilitates compliance. Knowledgeable politicians oversee the enactment of informed laws, while trained staffing in institutions ensures smooth implementation.

Inadequate information on climate change issues in Uganda has been partly due to limited awareness creation. While the aforementioned stakeholders make decisions on a daily basis that may address or amplify climate change, they lack insights on, among other things, the impacts and appropriate response to climate change.

Despite the many sectoral laws and policies, the concept of public awareness lacks locus in some national plans. However, this oversight has been addressed by the National Climate Change Policy, which prioritizes public awareness as a common policy for adaptation and mitigation[400] and the National Environment Act, which mandates NEMA to promote public awareness through formal and informal education.[401]

4.4. Conclusion

Uganda is among the African countries making concerted efforts to put functional mechanisms in place to deal with climate change challenges, including legal and institutional frameworks. The country, however, still must overcome several major hurdles, including the lack of funding and governance structures to support climate actions that can have a sustainable impact on the affected communities. The situation is exacerbated by the presumption by Government that sectoral institutions will mainstream climate actions in their budgeting processes and program implementation and yet the capacities in these institutions to undertake this exercise are inadequate. Besides, their core sectoral mandates tend to take precedence.

[400] Ibid. vii.
[401] Uganda National Environment Act, 2019, section 147(1)(b).

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The overarching objective of this thesis was to discuss the effectiveness of Uganda's climate change regime in light of its obligation as established under the international climate change law. The progress made, as well as the existing setbacks analysed in Chapter Four, inform the recommendations that Uganda may undertake to ensure implementation and meeting its commitments towards climate change.

This Chapter proposes several recommendations, which address the statement of the problem and the research questions. Some recommendations call for the amendment of various laws and policies and institutional empowerment (for instance, the 1995 Constitution of Uganda and Uganda's National Environment Management Authority (NEMA)) while others propose alternative sources of funding, capacity-building measures and hybrid coordination models to promote synergies and decentralization of functions.

5.2. Conclusion

Uganda is a country with rich biodiversity, natural resources and climate. To this end, Uganda's Parliament and the relevant institutions have expressed the willingness to enact laws that not only ensure the conservation of Uganda's biodiversity and natural resources, but also reflect its commitment to meet its international obligation towards combating climate change. In 2019, the Ugandan Parliament enacted the National Environment Act which, for the first time, provided for the rights of nature. In 2015, Uganda adopted the National Climate Change Policy on Climate which is expected to usher in a climate change statute.

The above notwithstanding, Uganda's response to climate change is still wanting. For instance, Uganda does not have a standalone legislation governing climate. Uganda's response to climate change is majorly sectoral, hence resulting in duplication of functions, poor coordination and monitoring among the various sectors and development of conflict policies.

Whereas Uganda has made a tremendous effort in meeting its international obligations on climate change, to ensure implementation of the measures and programmes developed, Uganda may consider several recommendations, including seeking alternative methods of

funding and institutional restructuring (in order to address the competing priorities for funds among the sectors), decentralization of institutional functions (for instance, relocating the environment police unit from the Ministry of Internal Affairs to Uganda National Environment Management Authority), and application of indigenous knowledge to boost the foreign technology acquired through transfer and information sharing mechanism.

5.3. Recommendations

The recommendations are discussed under short, medium and long-term interventions.

5.3.1. Short term interventions

Enactment of a Climate Change Act

Uganda has made significant development in regulating climate change by relying on sectoral laws. Among the recent administrative action is the development of a climate change policy, which interlinks the various sectors that are susceptible to climate change. The Ugandan Parliament, in pursuit of its obligation under Article 245, should also enact a Climate Change Act that will certainly address the duplication of functions among the sectors by expressly stipulating the duties of relevant stakeholders, promoting access to data and information on climate change, and prompting allocation of climate change funds from the Treasury for training and capacity building. The process of implementation of the Climate Change Act is by the Minister of Water and Environment together with the Parliament.

Also, considering that Uganda's approach to governance is decentralised as depicted by the local government sub-divisions, the suggested Climate Change Act should provide for the mainstreaming of climate change actions and measures into local governments' functions to ensure meaningful public involvement and fast implementation of proposed projects and programmes. Within the Act, the local authorities could enact their own ordinances and laws to deal with climate challenges in their own jurisdictions and local contexts.

Public awareness and participation

Public involvement in the implementation of adaptation and mitigation plans to control the impacts of climate change in Uganda is limited because of, among others exclusion of the vulnerable groups and limited knowledge of climate change, its effects and mitigation measures. The conservation and mitigation culture is hardly manifesting because the citizenry is neither involved in decision making nor informed through the various public awareness

fora. In many cases, research, plans and programme are influenced by the source of funds, leading to poor adoption of research findings or even outright resistance to the proposed plan by the local community due to non-involvement.

The state, through the local government authorities (local leaders, religious leaders, traditional leaders for example kingdoms like Buganda kingdom) should intensify public awareness in order to tap and apply indigenous knowledge in the implementation of adaptation and mitigation measures. Equally NEMA should play its role of sensitizing communities, UN agencies like UNDP and FAO can support the government in the implementation process of adaptation and mitigation plans in the country. This will also stimulate community initiatives and enhance compliance with the proposed climate change laws among the local people. Messages to promote climate action at community level should be in an appropriate local language, simplified and visualized as much as possible to make it easy for the communities to relate them to their local contexts and catalyze action without necessarily thinking of external resources, for example, water harvesting to mitigate climate change induced water stress or terracing to control local flooding, among others.

Capacity building

Over 83% of the relevant institutions in Uganda require capacity development to equip them with the necessary skills and knowledge to address the challenges of climate change. From the onset, Uganda should develop capacity building programs, taking into consideration the needs of the relevant institutions. Experienced personnel from sectoral ministries should be identified to facilitate periodic training in other institutions. Institutions like the Ministry of Water and Environment, Ministry of Agriculture should have core competent personnel who have technical skills and knowledge for example in the field of agroforestry. With support from sectoral ministries, necessary knowledge can be impacted in women and youth groups tackle the challenges of climate change. Institutions which are key custodians of key elements of climate change adaptation action should be able to support such groups.

5.3.2. Medium term interventions

Proper coordination among stakeholders

Uganda has created a Climate Change Unit within the Ministry of Water and Environment, which coordinates the national climate change responses. However, its establishment as a department makes it difficult for it to have any oversight authority over other institutions to

ensure mainstreaming of climate actions in sectoral plans and budgets. This institutional arrangement needs to be revisited, together with putting in place a long term and sustainable climate financing mechanism, like a dedicated climate fund, established by an Act of Parliament or expressly articulated in the law which established the Environment Fund.

There is also need for the relevant stakeholders to work together through resource sharing, research, consultation, collection of climate change data, policy making, and implementation of the measures proposed. Effective implementation of the several plans and programmes calls for the development of a holistic approach to implementation, such as, developing a hybrid working group and inter-institutional coordination models that benefits from the synergies and complementarities of the relevant stakeholders. This will help address the sectoral approach to implementation, whose effect is confined and limited to the sector in issue, hence duplication of functions and wastage of scarce resources.

Community projects

Current funding challenges require that the Government adopts nature-based solutions which emphasize "locally appropriate actions that address societal challenges, such as climate change, and provide human well-being and biodiversity benefits by protecting, sustainably managing and restoring natural or modified ecosystems". Nature-based climate adaptation seeks to preserve ecosystem services that are necessary for human life in the face of climate change and to reduce the impact of anticipated negative effects of climate change for example, more intense rainfall, more frequent floods as well as heat waves and droughts.[402] Involvement of impacted communities enshrines community stake in the activities, thus assuring successful implementation and long-term benefits.

Uganda witnessed serious deforestation in the 1990s at an estimated rate of 90,000 hectares per year.[403] Despite the proposed plans, such as NDP I and NDP II, there is still a severe reduction of forest cover, degradation and encroachment of wetlands, thus increasing vulnerability to climate change.[404] Uganda should intensify its community-based afforestation and re-afforestation programmes and this can be enforced by participation of local authorities

[402] Naumann Sandra *et al,* 'Nature-based approaches for climate change mitigation and adaptation. The challenges of climate change - partnering with nature.' German Federal Agency for Nature Conservation (BfN), Ecologic Institute, Bonn, 2014.
[403] NEMA (2017), Julius Muyizzi *et al* 'Restoring the Environment for Livelihood Improvement and Sustainable Economic Development,' National State of the Environment Report 2016/2017, NEMA, Kampala, p. 164.
[404] Ibid., 165.

through environment committees and community development offices. The use of charcoal as a source of energy should be discouraged and, if unavoidable, communities should adopt improved charcoal production technologies that ensure efficiency and promote sustainable production.

Seeking Additional Sources of Climate Funding

The primary reason for the poor implementation of Uganda's plans and programmes has been the lack of sufficient funds. Research agenda and the available climate change funds are predominantly influenced and sourced from foreign donors and institutions, since the national budget is dedicated to the traditional statutory mandates. [405]

To address the overreliance on external inflows, Uganda should promote additional sources of climate funding from stakeholders such as, the diaspora community, non-governmental organizations, the private sector and the citizens. At the very least, the Ugandan National Treasury should make earmarked allocation of funds for climate change in the annual budget to compliment foreign aid, enhance accountability and promote monitoring of climate finance progress. The Ministry of Finance supported by UN agencies and country missions/ embassies can support the government to raise additional funds. The responsible institutions should also mobilise their own resources to supplement any budget allocation and implement the proposed plans on schedule. This will, however, necessitate training on skills in fundraising and resource mobilization and reconfiguration of some of these institutions to make them responsive to this new challenge.

Promotion of Innovative Financing

Private sector participation should be strengthened to bridge the funding gap for adaptation and mitigation actions. This could include agreements with financial institutions like banks to apply incentives and disincentives for investments that are adverse to climate change or promote green development, for example, denying loan facilities for developments in wetlands or extending commercial loans for tree planting. Innovative financing can been enhanced through community based organization for example using youth and women groups, both local and international NGOs.

[405] See subsection 4.3.4 of Chapter Four.

5.3.3. Long term interventions

Amendment of the 1995 Constitution of Uganda

The Constitution of Uganda imposes a duty on citizens to create and protect a clean and healthy environment.[406] If strictly interpreted, no such duty exists for foreigners. In Kenya, the Constitution imposes the duty on all persons, irrespective of citizenship, to cooperate with the state in the protection and conservation of the environment and ensuring sustainable development and use of natural resources.[407] Thus Uganda needs to amend its Constitution through its Parliament, to widen the scope of applicability of Article 17 to broaden the obligation towards environment, capturing the participation of everyone to ensure clean and healthy environment.

Periodic tracking and updating of climate data

The UNFCCC and the Kyoto Protocol require Uganda to periodically develop and update its national inventory of anthropogenic emissions. The Paris Agreement, on the other hand, requires Uganda to prepare, communicate and maintain successive determined national contributions. These obligations require robust data tracking and updating systems that ensure accuracy in collection, research and recording.

The Climate Change Unit, among others, is expected to "create an updated inventory of greenhouse gas emissions by sector; prepare various Nationally Appropriate Mitigation Actions (NAMAs); address the fiduciary requirements to make Uganda qualify for climate finance from the various climate finance windows; and undertake studies that quantify the economic cost of the climate change response compared with the cost of inaction".[408]

These are huge responsibilities for young institutions with a weak capacity. Such a task would require establishing a National Climate Information System supported by a dynamic platform where capture and updating of information are continuous and near real-time. The network could have the Climate Change Unit as a hub with horizontal linkages with sectoral institutions and vertical linkages with the district focal points.

[406]Constitution of Uganda 1995, article 17(1)(j).
[407] The Constitution of Kenya 2010, Article 69.
[408] The Uganda Green Growth Development Strategy 2017/18- 2030/31 <https://www.undp.org/content/dam/LECB/docs/pubs-reports/undp-ndc-sp-uganda-ggds-green-growth-dev-strategy-20171204.pdf > (accessed on 15/4/2021)

Uganda lacks proper data tracking and updating system because of poor funding and technical expertise. The responsible personnel lack proper training and expertise on data collection, tracking and updating. These setbacks hinder Uganda from meeting her obligations. In light of this, Uganda should periodically track and update its climate data as mandated under the international regime, and the Climate Change Unit has to establish a climate change information system which is federated to the relevant institutions as a network.

Institutional reforms

Coordination of climate actions needs to be elevated to a level above sectoral ministries or departments, either in the Office of the Prime Minister or an institution with oversight mandates like NEMA.

To enhance collection and dissemination of climate information, Uganda may consider decentralizing the functions of the Uganda National Meteorological Authority by establishing district focal points which shall be responsible for the dissemination of meteorological information to the local authority and communities and also act as the vertical linkages in the national climate information network.

Uganda may also consider establishing environment courts to increase litigation of cases that accelerate climate change such as wetlands deterioration and industrial emissions.

Further, Uganda may consider relocating the Environment Police Force from the Ministry of Internal Affairs to Uganda National Environment Management Authority in order to empower NEMA to enforce the applicable environmental laws which have implication on climate change, such as, wetlands degradation, deforestation and factory emissions.

5.4. Summary of Research Findings

The research questions were broken down into three sections as discussed in chapters 2 to 4 of the thesis respectively. Research question one has been discussed as Chapter Two, which analyzed the various international instruments on climate change, namely, the UNFCCC, Kyoto Protocol and Paris Agreement, and identifies Uganda's obligations under the said instruments. The findings are that Uganda has made progress by domesticating and ratifying the UNFCCC framework requirements. Uganda has also prepared and communicated its periodical reports such as, the National Determined Contributions, its Biennial Report and the

National Adaptation Programme of Action among others. Uganda is also making effort to have a legislative framework for implementation of the UNFCCC.

Research question two has been discussed under Chapter Three, which brought out the national circumstances of Uganda and the various sectors that are vulnerable to climate change, namely, agriculture, fisheries, wetlands and forestry. The Chapter also identifies the existing policy, legal and institutional framework applicable to combating climate change. The findings are that Uganda has policies and institutions in place to address the climate change, however the lack of a stand-alone legal framework, the segmented sectoral approach and the lack of intuitional capacity has hampered the country's opportunity to fully benefit from the legal regimes.

Finally, research question three, discussed under Chapter Four, analyzes the effectiveness of the legal and institutional framework addressing climate change in Uganda. It also identifies the gaps arising from the legal and institutional responses, which include: the scattered climate change regime, poor dissemination of climate change information, lack of coordination, public awareness, and overreliance on external funding among others. The findings are that, the lack of a specific law is undermining government's efforts to address climate change challenges. The lack of a framework law also undermines the implementation of a legal budgetary framework and governance to deal with emerging challenges that are occasioned by climate change, such as, community vulnerability to the extreme weather events like, floods, landslides, droughts, loss and damage.

In conclusion of this thesis, the hypothesis, as stated in Chapter One, has been proved.

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