JOURNAL OF ENVIRONMENTAL LAW & POLICY | 03(01) APRIL 2023
Published by The Grassroots Institute, in partnership with Yaroslav Mudriy National Law University of Ukraine, and in collaboration with Northern Institute of Minority & Environmental Law, University of Lapland. Website: https://grassrootsjournals.org/jelp

ISSN 2564-016X | April 2023

M – 00340 | Analytical Article | Open Access

CLIMATE CHANGE REGULATIONS OF CORPORATIONS IN TANZANIA: A CASE FOR *DILUTE INTERVENTIONISM* AND *VETO FIREWALL* PARADIGM

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Received: 13 February 2023 | **Accepted:** 23 March 2023 | **Published:** 28 April 2023

ABSTRACT

Corporations operating in developing countries generally adopt an obstructionist approach to climate change and environmental regulation, particularly in states with weaker economic bargaining strength. Tanzania is one of the African states suffering the disproportionate impacts of climate change but with a weak regulatory capacity to restrain adverse corporate climate change impacting activities. This article critically analyses the climate change regulatory framework of corporations in Tanzania and proposes the implementation of the *Dilute Interventionism* Model as an innovative solution for regulating corporate activities in climate change mitigation in the country. The model combines prescriptive and facilitative measures in regulating corporations to mitigate the effects of climate change. The article also identifies the need for *Veto Firewall* protection to safeguard the independence of the sole independent regulator established to regulate the climate change activities of corporations in Tanzania. This article adopts the *Dilute Interventionism* Pyramid which depicts the steps required to implement the *Dilute Interventionism* Model in Tanzania. The challenges to the implementation of the *Dilute Interventionism* and *Veto Firewall* Paradigm in Tanzania are also discussed, including resistance from corporations, inadequate funding, and lack of technical capacity and the potential solutions to these challenges are briefly highlighted.

Keywords: Tanzania; Climate change; Corporations; Dilute Interventionism; Regulatory framework; Veto Firewall protection

Editor-in-Chief: Prof. Dr. Kamrul Hossain | *Deputy Editors-in-Chief:* Dr. Evgeniya Kopitsa, Prof. Dr. Ngozi Finette Unuigbe | *Executive Editor:* Dr. Hasrat Arjjumend

How to cite this paper: Kikelomo O. Kila, 'Climate Change Regulations of Corporations in Tanzania: A Case for *Dilute Interventionism* and *Veto Firewall* Paradigm' (2023) 03 (01) Journal of Environmental Law & Policy 80-107 <https://doi.org/10.33002/jelp03.01.02>

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Climate Change Regulations of Corporations in Tanzania: A Case for *Dilute Interventionism* and *Veto Firewall* Paradigm

1. INTRODUCTION

Tanzania's economy is mostly dependent on tourism, manufacturing, and rain-fed agriculture. These sectors are the most susceptible to the impacts of climate change. The agricultural sector contributes one-quarter of the GDP and employs approximately three-quarter of Tanzania's workers.[1] The significant contributors to the agricultural sector are the sub-sectors of crops, livestock subsectors and fishery subsector amounting to 18.93%, 4.70% and 2.25%, respectively.[2] A recent report shows that the agricultural sector constituted approximately 26% of the GDP in Tanzania, the industry stood at 29.28% and the service sector contributed approximately 30%.[3] Although tourism contributed to approximately 11 % of the GDP of Tanzania in 2020, the tourism sector is second only to the manufacturing sector in contributing to the national income of Tanzania.[4] Tanzania also experiences water scarcity, which is largely exacerbated by climate change's impact on Tanzania's 9 major river basins.[5]

Drought and flooding are the main climate-related hazards in Tanzania.[6] According to a 2018 report, Tanzania suffered from severe flooding in 2018 displacing approximately 2,000 households in the country's capital of Dar es Salaam. The reports put the normal of persons affected by the flooding to be approximately 1.7 million people. Contributing to an economic loss of 4% in its commercial capital, the affected households lost about 23% of their annual income, without taking into consideration the impact of flooding on their health and also on education.[7] Tanzania also witnessed severe flooding in 2020. With approximately nine of its regions affected by flooding, the impact of this flooding led to the displacement of families, destruction of properties, loss of livelihoods and lives, houses and serious infrastructure damage like the destruction of roads and bridges.[8] The Tanzania Red Cross reported that, in April 2022, flooding caused serious damage in several regions in

1 Joel Chongela, 'Contribution of Agriculture Sector to the Tanzanian Economy' (2015) 3(7) American Journal of Research Communication 12.

2 Ibid.

3 Statista, 'Tanzania - Share of Economic Sectors in The Gross Domestic Product 2017' (Statista2023) <https://www.Statista.Com/Statistics/447719/Share-Of-Economic-Sectors-In-The-Gdp-In-Tanzania/> accessed 25 February 2023.

4 Valensi Corbinian Kyara, Mohammad Mafizur Rahman and Rasheda Khanam, 'Tourism Expansion and Economic Growth in Tanzania: A Causality Analysis' (2021) 7 Heliyon.

5 Climate Risks, 'Tanzania' (Climatelinks2018) <https://www.Climatelinks.Org/Countries/Tanzania> accessed 25 February 2023.

6 Shardul Agrawala and Others, 'Environment Directorate Development Co-Operation Directorate Working Party on Global and Structural Policies Working Party on Development Co-Operation and Environment Development and Climate Change in Tanzania: Focus On Mount Kilimanjaro' <https://www.oecd.org/env/cc/21058838.pdf> accessed 25 February 2023.

7 Jun Rentschler, Ella Kim and Alvina Rman, 'Staying Afloat: New Evidence On How Firms in Tanzania Cope with Flooding' (www.preventionweb.net2021) <https://www.preventionweb.net/news/staying-afloat-new-evidence-how-firms-tanzania-cope-flooding> accessed 25 February 2023.

8 Relief Web, 'Tanzania: Floods - Final Report (Operation N° MDRTZ02) - United Republic of Tanzania | Reliefweb' (Reliefweb.Int2021) <https://reliefweb.int/report/united-republic-tanzania/tanzania-floods-final-report-operation-n-mdrtz02> accessed 25 February 2023.

Tanzania. The most affected by climate change-related flooding were the zones of Runge (Mbeya Region) and Ilija (Songwe Region).[9] The intended flooding in this region leads to the destruction of approximately 10,000 hectares of crops, and infrastructures such as drinking water wells, roads, and bridges. Over 400 homes were also damaged in these regions, and, of these 400 homes, 318 were destroyed. Schools and religious buildings were also affected in these regions. In the Kyela district, approximately 630 households constituting about 3,150 people were displaced because of climate change-induced flooding.[10] Climate change-induced flooding also has a significant impact on Tanzania's economy. A report by Nature Climate Change shows that Tanzania loses an average of US$ 2 billion due to climate-induced floods every year.[11]

Drought also affects Tanzania drastically. A 2012 Comprehensive Food Security and Vulnerability Analysis (CESVA) shows that rural households, which majorly depend on rain-fed agriculture, are the most hit by the impact of drought. The report shows that food insecurity is peculiar to rural households situated in rainfall zone (north and west) that are heavily dependent on Agriculture.[12] A recent report shows that northern Tanzania during the first quarter of 2022 received less than 35% of normal rainfall, which amounted to the worst rainy season in the 21st century. This drought led to the death of approximately 62,000 livestock in Tanzania during this quarter, with drought forcing herders to sneak into protected wildlife in a desperate search for water and pastures for their cattle.[13] The drought experienced during this period also affected the electricity sector, causing a huge drop in hydropower generation. The Tanzanian authorities had to resort to rationing electricity among its citizens.[14] A 2022 report narrows down the Northern region affected to Manyata, Arusha, Kilimanjaro, and Tanga, which puts the total number of persons affected by the drought at approximately 2.2 million.[15]

Though Tanzania is not a major contributor to global greenhouse emissions, the activities of corporations over the years particularly in the industrial sector has resulted in an increase in greenhouse gas emissions

[9] Francis Kajubi, 'Drought Forces People and Wildlife to Compete for Water in Tanzania' (Earth Journalism Network21 March 2022) <https://earthjournalism.net/stories/drought-forces-people-and-wildlife-to-compete-for-water-in-tanzania> accessed 25 February 2023.

[10] Ibid.

[11] Sylivester Domasa, 'Tanzania: Floods Cost Tanzania U.S.$2billion Annually', <https://allafrica.com/stories/201802280677.html> accessed 25 February 2023.

[12] Kahimba, F., Sife, A., & Maliondo, 'Climate Change and Food Security in Tanzania: Analysis of Current Knowledge and Research Gaps' (2015) 14 Tanzania Journal of Agricultural Sciences 21-33.

[13] Kizito Makoye, 'Fighting Drought, Tanzania Faces Loss of 62,000 Livestock' (www.aa.com.tr2022) <https://www.aa.com.tr/en/africa/fighting-drought-tanzania-faces-loss-of-62-000-livestock/2482330> accessed 25 February 2023.

[14] VOA, 'Tanzania Starts Rationing Power Because of Drought' (VOA2022) <https://www.voanews.com/a/tanzania-rations-electricity-because-of-drought-/6849172.html> accessed 25 February 2023.

[15] Relief Web, 'A Situation Analysis' (2022).

and increasing greenhouse gas emissions is one of the key drivers of climate change impacts such as floods, heat and droughts.[16]

Tanzania remains one of the African countries with a weak regulatory capacity to curtail the activities of corporations and currently, Tanzania does not have a Climate Change Act, or an independent climate change regulatory body. Climate change-related issues are, therefore, addressed within the confines of the provision of the Environment Management Act 2004, which fails to make any specific meaningful provision on climate change. There is, therefore, a need for Tanzania to enact a National Climate Change Act and includes provisions implementing the *Dilute Interventionism* Model to better curb corporate excesses. There is also a need for the Climate Change Act to make provisions for *Veto Firewall* protection, which will safeguard the independence of the sole regulatory body to be established by the Act.

This article will, firstly, succinctly examine the two innovative legal and regulatory models (*Dilute Interventionism* and the *Veto Firewall* paradigms) proposed in this article; secondly, it will examine Tanzania's carbon emission profile with emphasis on the corporate carbon emission contributions; thirdly, it will explore the country's climate change/environmental regulation, the climate change regulation of corporations and critically examine Tanzania's environmental regulation through the Environmental Management Act, highlighting its ineffectiveness in adequately regulating climate change activities of corporations in the country; fourthly, the article will critically examine the implementation of the two innovative paradigms proposed in this article and present its conclusion/recommendation.

2. THE *DILUTE INTERVENTIONISM* AND *VETO FIREWALL* PARADIGMS

Dilute Interventionism is a regulatory approach that combines punishment and persuasion to promote compliance with regulations.[17] This approach recognizes that punishment alone may not be enough to change behaviour, and instead emphasizes a balance between punishment and persuasion. By using both approaches, regulators can create a more effective regulatory environment.[18] Unlike other regulatory theories that prioritize facilitative measures, *Dilute Interventionism* starts with the most prescriptive measures first, rewarding compliance rather than punishing non-compliance.[19] This model uses a pyramid enforcement structure that outlines the progression of interventionist measures.[20] However, unlike

[16] Raúl Cassia and others, 'Climate Change and the Impact of Greenhouse Gasses: CO_2 and NO, Friends and Foes of Plant Oxidative Stress' (2018) 9 Frontiers in Plant Science <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5837998/> accessed 17 April 2023.

[17] Kikelomo Kila, 'Corporate Regulation for Climate Change Mitigation in Africa: A Case for Dilute Interventionism (1st Edition, Routledge, 2022).

[18] Ibid.

[19] Ibid.

[20] Ibid.

other regulatory theories that have a broad base and increasingly narrower structures, *Dilute Interventionism* has an inverse pyramid structure.[21] This means that the interventionist measures become broader and less prescriptive as one moves up the pyramid, reflecting the practical structuring required preventing corporate excesses while incentivizing corporate participation in the regulatory framework.[22]

The *Dilute Interventionism* model provides corporations with a range of increasingly less severe prescriptive sanctions, such as criminal sanctions, civil liability sanctions, administrative sanctions, and penalties.[23] As corporations progress higher up the pyramid, the options become wider and less prescriptive until they reach the top, where they find the widest variety of facilitative and self-regulatory instruments available.[24]

Veto Firewall, on the other hand, relates to the mode of securing the independence of a regulator by instituting safeguard steps to shield it from executive and political interference either in a single or double-tier veto process. The term 'firewall' is derived from the context of computer network security where it refers to a piece of technology that protects against unauthorized access to a network by analysing incoming and outgoing data against specific criteria.[25] The term 'veto' refers to the power of a person or body to reject a decision or proposal. Combined, these terms refer to the use of veto powers by specified persons to create a shield/protection for a regulator in order to secure its independence and insulate it from external executive or political intrusion.

Similarly, with respect to the proposed sole independent climate change regulator in Tanzania's regulatory framework (discussed later in this article), a similar concept applies. In this instance, the term 'Veto Firewall protection' refers to a protective wall constructed around the climate change regulator using the veto power of the legislature to prevent undue influence or pressure from members of the executive for its regulatory decisions. In this context, the legislature exercises its veto power by approving or disproving the appointment or removal of the head and senior officials of the regulator. Where the legislature is the sole veto institution for the appointment and removal of officials of the regulator, it constitutes a single-tier veto firewall system. Conversely, there could be an independent appointment body which also exercises veto powers in relation to the appointment and removal of the regulator's officials and this would constitute a double-tier veto firewall system.[26]

Therefore, to provide additional protection for the prospective climate change regulator in Tanzania, this article argues the need for a veto-firewall system, which can be a single or dual-tier structure, as an

[21] Ibid.
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] Ben Lutkevich, 'What is a Firewall and Why Do I Need One?' (Search Security May 2021) <https://www.techtarget.com/searchsecurity/definition/firewall> accessed 25 February 2023.
[26] See Kikelomo Kila, Corporate Regulation for Climate Change Mitigation in Africa (n 17), chapter 6.

essential ingredient to safeguarding the regulator from any undue influence.[27]

3. TANZANIA'S CARBON EMISSION PROFILE

Tanzania's greenhouse gas emission (GHG) has seen a rapid increase over the years. A report shows that greenhouse gas emissions in Tanzania increased by approximately 3% between 1990 and2014.[28] The bulk of GHG emissions from Tanzania came from the land use change and forestry sector.[29] Agriculture within the period of 1990-2014 contributed approximately 17.3% of the total gas emissions whilst the energy waste and industrial processes also contributed to 7.8%, 1.6% and 0.5%, respectively.[30] A report in 2014 shows that from 1990 through 2014, the energy sector emissions grew by 171%. This was a result of fuel combustion and transportation activities. While the Energy sector saw an exponential increase within this period, the agricultural sector increased by 65% within the same period.[31]

As it relates to carbon dioxide, CO_2 emissions were approximately 9,732,560 million tons in 2016 increasing by 2.5% from the figures recorded in 2015. The figures for 2015 stood at 9,494,242 million tons. Tanzania saw a steady increase from the 1971 to 2016. In 1971, Tanzania emitted a total of 1,542,209 million tons and saw its highest increase in the 1990s, increasing by 38.5%.[32] These increases were mostly attributed to the increase in industrial activities over the years.[33] The largest source of CO_2 emissions in the country is transportation, electricity, and industry, respectively.[34] Transportation contributes a staggering 51% of Tanzania's emissions whilst the electricity and the industrial sector accounted for nearly 25% of the country's total gas emissions.[35] There has, thus, been a steady increase in CO_2 in the country in the past decade.

Corporate activities have immensely contributed to the environmental challenges in Tanzania with many of the country's largest businesses mostly reliant on fossil fuels.[36] Majority of industries CO_2

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27 Ibid, 124.

28 Climate Links, 'Greenhouse Gas Emissions Factsheet: Tanzania' (www.Climatelinks.Org2018) <https://www.climatelinks.org/resources/greenhouse-gas-emissions-factsheet-tanzania> accessed 23 April 2023.

29 Ibid.

30 Ibid.

31 Ibid.

32 Worldometers, 'Tanzania CO_2 Emissions - Worldometer' (www.worldometers.info) <https://www.worldometers.info/co2-emissions/tanzania-co2-emissions/> accessed 17 April 2023.

33 Ceven Shemsanga, Anne Omambia and Yansheng Gu, 'The Cost of Climate Change in Tanzania: Impacts and Adaptations' (2010) 6 Journal of American Science 1545

34 Yida Sun and Others, 'Emission Accounting and Drivers in East African Countries' (2022) 312 Applied Energy 118805.

35 Ibid.

36 Kamukala, G.L. and Crafter, S.A., 'Wetlands of Tanzania', Proceedings of a Seminar on the Wetlands of Tanzania, Morogoro, Tanzania, 27-29 November 1991 (IUCN 1993).<https://books.google.com/books/about/Wetlands_of_Tanzania.html?id=kbLsJa81gpgC> accessed 17 April 2023.

emissions, for example, are mainly from corporations with the industrial sector comprising of construction (50%), manufacturing (31%), mining (15%) sectors, etc.[37] Regulating the climate change activities of corporations in Tanzania is, thus, vital towards achieving a lower carbon emission within the country and a globally sustainable climate.

4. TANZANIA'S INTERNATIONAL CLIMATE CHANGE PROFILE

Although Tanzania is a minor contributor to the global greenhouse gases (GHGs), it experiences drastic effects of climate change, which has threatened the life of humans, their health, safety, and food security.[38] The Tanzania Government recognized the problems linked with climate change, and in order to curb these issues, it ratified several international conventions. Key amongst them is the United Nation Framework Convention on Climate Change (UNFCCC), which was signed on June 12, 1992, and ratified on the 17th of April 1996. Tanzania signed the Paris Agreement on 22nd of April 2015 and ratified the same on 18th May 2018.[39] Tanzania also ratified the Kyoto Protocol on the 26th of August 2002.[40] The UNFCCC, for instance, spells out its key principles including: the requirement for State parties to take precautionary measures to anticipate prevent and minimize the effect of climate change and mitigate its advert effects, and the right of State parties to promote sustainable development.[41] Tanzania has ever since attempted to meet some of the objectives of the Convention. Tanzania, in compliance with Articles 4.1 and 12.1 of the Convention, which require a member State to periodically report to the Convention regarding its national circumstance and subsequent response to Climate change, through a National Communication prepared its first and subsequent report in 2014.[42] Tanzania in compliance with UNFFCC also developed a National Adaptation Programme of Action (NAPA) in 2007.[43] The NAPA seeks to promote the utilization of food crops, which are drought-tolerant in places susceptible to drought.[44] Tanzania in compliance with UNFCC again developed key strategies, which include the Zanzibar Climate Change Strategy (2014) and the National Climate

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37 Ibid.

38 Afrobarometer, 'News Release' (2021) <https://www.afrobarometer.org/wp-content/uploads/migrated/files/press-release/tanzania/news_release_in_tanzania_farmers_lead_concerns_about_climate-20oct21_final.pdf> accessed 25 February 2023.

39 UNFCC, 'United Republic of Tanzania' (Unfccc.Int2023) <https://unfccc.int/node/61230> accessed 25 February 2023.

40 Ibid.

41 UNFCCC, 'United Nations Framework Convention on Climate Change' (1992) <https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf> accessed 25 February 2023.

42 United Republic of Tanzania, 'Second National Communication to the United Nations Framework Convention on Climate Change' 2014 <https://unfccc.int/sites/default/files/resource/tzanc2.pdf> accessed 23rd February 2023.

43 Global Support Programme, 'Tanzania | National Adaptation Global Support Programme' <https://www.globalsupportprogramme.org/explore/eastern-africa/united-republic-tanzania> accessed 25 February 2023.

44 *Ibid.*

Change Response Strategy developed in 2021.[45] Tanzania has made persistent efforts to comply with other agreements.[46] For instance, Tanzania, in compliance with Article 4.2 of the Paris Convention, which specifically requires States to prepare and communicate Nationally Determined Contributions, drafted a Nationally Determined Contribution in 2021, which provides for key interventions on adapting and mitigating the impacts of climate change.[47] Tanzania has ratified some other conventions including the 1992 Convention of Biological Diversity (CBD) ratified in 1997, The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, which was ratified within 1993, the Vienna Convention for the Protection of Ozone Layer 1985, which was ratified in 1993, and, lastly, the Stockholm Convention on Persistent Organic Pollutants 2001, which was ratified in 2003.[48]

5. TANZANIA'S CLIMATE CHANGE REGULATORY FRAMEWORK

Tanzania is yet to enact a Climate Change Act. However, it has several legislative enactments[49] and regulations revolving remotely around Climate Change. The Disaster Management Act[50] provides guidelines for preventing disasters, preparedness, mitigation, and response measures. The Act establishes a Disaster Management Agency and the Disaster Management Fund. Some of the core functions of the Agency include formulating policies and plans on all activities relating to disaster management in Tanzania, Mainland (which could also include Climate Change Disasters), establishing an Emergency Operation and Communication Centre to act as the central planning, coordinating, and monitoring institution for the prevention, mitigation and response to post-disaster recovery having regards to potential risks on natural disasters.[51] Whilst the Disaster Management Fund is to be used to provide essential commodities and other relief to persons who are victims of any disaster, hazard, or emergency, these funds will also be utilized for preventing, mitigating, responding, and ensuring recovery from a disaster or other activities related to disaster management.[52]

The Public Health Act of 2010 also contains a few provisions relating to Climate Change. The Act provides the means to ensure the control of communicable diseases, pollution of water in ports, control of mosquitoes,

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45 United Republic of Tanzania, 'Nationally Determined Contributors', <https://unfccc.int/sites/default/files/ndc/2022-06/tanzania_ndc_submission_30%20july%202021.pdf> accessed 23 February 2023.

46 *Ibid.*

47 Ibid.

48 Olof Drakensberg, Goran E.K. and Karolina Fernqvist, 'Environment and Climate Change Policy Brief', <https://www.researchgate.net/publication/311935998_environment_and_climate_change_policy_brief_-_tanzania> accessed 23rd February 2023.

49 Tanzania Agricultural Research Institute Act 2016, Disaster Management Act 2015, Public Health Act 2010, and Environmental Management Act (EMA) 2004.

50 The Disaster Management Act 2015.

51 Section 5 (1) of the Act.

52 Section 29 of the Act.

solid, liquid, and hazardous waste management. Furthermore, the Act empowers the Minister to make regulations for carrying out the purpose of the Act and spells out a list on which the Minister can make regulations on. One of these includes regulations prescribing programmes and facilities to ensure that the issues of climate change are well addressed and curbed.[53]

The Environmental Management Act (EMA) though does not provide extensively for climate change, it makes minor provisions on climate change. For instance, the Act instructs the Minister for Environment and other relevant ministries to take adequate measures to address climate change, with particular emphasis on the impact of climate change and adaptation measures[54]. Additionally, it provides the right of every person living in Tanzania to a clean, safe and healthy environment.[55] It also provides citizens with the ability to commence environmental proceedings against persons whose act or omission is likely to occasionally harm either to human health or to the environment.[56] The Act creates the National Environment Trust Fund[57], which (amongst other things) is to be utilized to enhance research intended to further the requirement of environmental management. Additionally, the Act establishes a national Environmental Regulatory Body (ERB), which is charged with the function of supervising Environmental Units at both the district and sectorial levels.

With respect to regulations, on the 28th of October 2022, the Tanzania Minister for Environment (pursuant to sections 75 and 230 of the Environmental Management Act 2004) passed the Environment Management (Control and Management of Carbon Trading) Regulations of 2022. The Regulations provide regulatory control and management of carbon trading projects in Tanzania. The Regulation appoints the Minister of the Environment as the designated national authority or the national focal point and sets out some of its functions. This includes the responsibility of linking the country with international processes for climate change; coordinating all matters relating to justice; registering carbon trading projects under compliance and voluntary mechanisms.[58] This regulation was enacted pursuant to sections 75 and 202 of the Environmental Management Act and it provides the enabling power for the Minister to promulgate similar regulations for implementing the key features for *Dilute Interventionism* in Tanzania. The enactment of a similar, but more comprehensive and bespoke, framework legislation tailored specially to address climate change issues is required in Tanzania.

Whilst the above-discussed legislative enactments are utilised for regulating climate activities in Tanzania, these enactments are insufficient in providing a comprehensive legal framework for regulating corporate

53 Section 171 (2) (M) of the Act.
54 Section 25 of the Act.
54 *Ibid*.
55 EMA *supra 49*, Section 4.
56 Section 5 of the Act.
57 Section 213 of the Act.
58 United Republic of Tanzania, 'The Environmental Management Act-Subsidiary Legislation to the Gazette of the United Republic of Tanzania' (2022) 103.

participation in climate change mitigation in the country. There is, thus, a need for the incorporation of the key features (discussed below) of the *Dilute Interventionism* or *Veto Firewall* paradigms to provide a comprehensive legal/regulatory framework to effectively regulate climate change activities of the corporation in the country.

6. TANZANIA CLIMATE CHANGE REGULATION OF CORPORATION

Some of the laws already discussed above contain several provisions regulating corporate contribution to climate change in Tanzania. Additionally, the Mining Act of 2010 requires companies who own mining licenses to take effective measures for protecting the environment per the Environmental Management Act (EMA).[59] The EMA requires that an environmental impact assessment in mining projects or mining activities be conducted. This is very crucial because most of the sources of energy for undertaking mining activities have direct implications on greenhouse gas emissions.[60] It is, therefore, imperative to limit their impacts on climate change by setting up measures to limit the same. The Urban and Planning Act 2007, for instance, restricts any development activity, which will pose a serious impact on the environment. The Petroleum Act 2015 requires that a strategic assessment of the social and environmental impact of petroleum activities must be properly evaluated before using an area for petroleum activities.[61] Lastly, to ensure transparency and accountability in extractive industries, the Extractive Industries Transparency and Accountability Act requires the disclosure to the public of the environmental management plan by any extractive industry.[62] These laws help to regulate corporate activities to limit harms to the environment.

7. STRONGPOINTS OF TANZANIA LEGAL FRAMEWORK ON CLIMATE CHANGE

Although, several pieces of legislation remotely provide for Climate Change in Tanzania, this section shall focus solely on the Environmental Management Act because it provides a comprehensive framework for the sustainable management of the environment and natural resources in Tanzania.[63] The EMA provides a legal and institutional framework for sustainable management of the environment. It also outlines principles for management,[64] impact and risk assessments,[65] prevention and control of

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59 Vizzuality, 'National Climate Change Strategy 2021-2026 - Tanzania - Climate Change Laws of The World' <https://www.climate-laws.org/geographies/tanzania/policies/national-climate-change-strategy-2021-2026#:~:text=the%20national%20climate%20change%20strategy> accessed 25 February 2023.

60 *Ibid.*

61 The Petroleum Act, 2015.

62 The Tanzania Extractive Industries (Transparency and Accountability) Act, 2015, section 16

63 EMA, *supra 49.*

64 Section 81 of the Act and the Environmental Impact Assessment and Audit Regulations 2005, Section 47.

65 Section 14 of the Act and Section 12 of the Regulations.

pollution,[66] waste management,[67] environmental quality standards,[68] public participation,[69] compliance and enforcement.[70] It establishes the National Environmental Management Council (NEMC) as the main regulatory body responsible for environmental management in the country.[71] The Act also requires Environmental Impact Assessment (EIA) to be carried out for all projects that may have a significant impact on the environment, ensuring that potential environmental impacts are considered before a project is approved.[72] Additionally, the Act includes provisions for the conservation and sustainable use of biodiversity[73] and natural resources,[74] as well as measures for environmental monitoring, compliance, and enforcement.[75] Overall, the EMA provides a strong legal foundation for environmental protection and management in the country but a weak regulatory framework for climate change.[76]

8. SHORTCOMINGS OF THE TANZANIA CLIMATE CHANGE REGULATORY FRAMEWORK

While Tanzania has developed several regulations and policies related to climate change, the existing frameworks do not provide a robust and comprehensive approach to addressing climate change. The National Environmental Act for example which provides fragmented provisions relating to climate change has several shortcomings including:

8.1 Limited Focus on Climate Change

The Act does not provide a comprehensive framework for addressing climate change, and its provisions on climate change are limited to a few sections.[77] While it is true that the Act (EMA) includes provisions related to environmental issues such as pollution prevention and control,[78] these provisions may not be sufficient to address the complexity of climate change and its impacts. This is because the prevention and control of pollution is only one aspect of environmental management. Climate change, on the other hand, requires a more holistic approach as it takes into account the unique complexities of the issue and its impact. This includes strategies to mitigate greenhouse gas emissions, adaptation measures to reduce vulnerability to climate impacts, and approaches to build resilience to climate change. This limits its

66 Section 187 of the Act and Section 51 of the Regulations.
67 Section 114 of the Act and Section 44 of the Regulations.
68 Section 140 of the Act and Section 140 of the Regulations.
69 Section 178 of the Act and Section 17 of the Regulations.
70 Section 184-192 of the Act and Section 57 of the Regulations.
71 Section 16 of the Act and Section 16 of the Regulations.
72 Section 14 of the Act.
73 Section 230 of the Act.
74 Section 7 of the Act and Section 46 of the Regulations.
75 EMA *supra-49*.
76 Section 75 of the Act.
77 Ibid and the Second Schedule of the Regulations.
78 Section 106-113 of the Environmental Management Act.

effectiveness in addressing the complex and urgent issues associated with climate change.

8.2 Lack of Clear Enforcement Mechanisms

While the Act establishes legal obligations for various stakeholders, it does not provide clear enforcement mechanisms to ensure compliance with climate change provisions.[79] This limits the effectiveness of the Act in addressing climate change.

8.3 Insufficient Allocation of Resources

The Act requires significant resources to implement, including funding, technical expertise, and institutional capacity. Although the Act establishes the National Environmental Trust Fund,[80] the Act does not provide explicit funding for climate change mitigation and adaptation, technical expertise, and institutional capacity.

8.4 Limited Public Participation

The Act does not provide for meaningful public participation in environmental decision-making, including climate change-related decisions.[81] While the Tanzania Environmental Management Act (EMA) does include provisions related to public participation[82] in environmental decision-making, these provisions are not sufficient to ensure meaningful and effective public participation in climate change-related decisions. Section 178 of the EMA outlines the requirements for public participation in environmental decision-making processes. It requires public notice of proposed activities that may have significant environmental impacts, public access to relevant information, and an opportunity for interested parties to submit comments and participate in public hearings. While these provisions are a step in the right direction, effective public participation in climate change-related decisions requires more than just providing information and an opportunity to comment. It requires a meaningful and inclusive process that actively engages all stakeholders in the decision-making process, including marginalized and vulnerable communities that are often most affected by climate change. Failure to incorporate the participation of vulnerable communities and groups limits the effectiveness of the Act and the public buy-in needed for effective implementation.

8.5 Limited Integration with Other Policies

The Act does not appear to be fully integrated with other policies and strategies in Tanzania, which limits its impact and effectiveness. One example of the lack of alignment between the Tanzania Environmental Management Act (EMA) and the Tanzania Climate Change Strategy is in relation to the issue of greenhouse gas emissions. The Tanzania

[79] Section 142 of the Act.
[80] Section 213 of the Act.
[81] Section 46 of the Act.
[82] EMA, supra 49

Environmental Management Act (EMA) does not have a specific target for reducing greenhouse gas emissions. Rather, the EMA requires industries and other polluting activities to adhere to certain emissions standards and limits.[83] For example, the EMA sets emissions limits for pollutants such as carbon monoxide, hydrocarbons, other noxious emissions, and standards for exhaust emissions.[84]

The Tanzania Climate Change Strategy, on the other hand, sets a specific national target for reducing greenhouse gas emissions by 10% by 2030, relative to business-as-usual levels.[85] This target is intended to mitigate the impacts of climate change by reducing the amount of heat-trapping gases that are released into the atmosphere. So, while the EMA and the Tanzania Climate Change Strategy both aim to address environmental and climate-related issues, they approach the issue of emissions reduction in different ways. The EMA primarily focuses on regulating emissions from industries and other polluting activities, while the Tanzania Climate Change Strategy takes a broader approach that includes emissions reductions from all sectors of the economy and sets a specific target for emissions reductions. The author contends that the Tanzania Climate Change Strategy should be given a statutory footing to improve its effectiveness as it adopts the right approach to tackling climate change mitigation.

8.6 Limited Focus on Mitigation and Adaptation

The Act provides very limited provisions on mitigation and adaptation,[86] which is critical given Tanzania's vulnerability to climate change impacts. A vivid example is the lack of clear targets and timelines. The Act does not specify clear targets and timelines for reducing greenhouse gas emissions, which are essential for achieving the long-term goal of limiting global warming to well below 2°C.[87] Similarly, there are no clear targets or timelines for adapting to the impacts of climate change, which makes it difficult to measure progress and hold the government accountable for its actions. Also, the Act does not provide for adequate resources to implement mitigation and adaptation measures. This includes funding for research, development, and deployment of climate-friendly technologies, as well as capacity-building and awareness-raising activities to support adaptation efforts.

8.7 Lack of Regulatory Independence

By far the biggest shortcoming of the EMA is the absence of an independent regulator to implement the regulatory objectives, powers and functions vested in the Act. The independence of a regulator is vital for its effectiveness as it ensures that the regulatory policies and objectives are

83 Section 131 of the Act.
84 Section 132 of the Act.
85 United Republic of Tanzania, supra-45.
86 EMA, *supra 49*.
87 UNFCCC, 'The Paris Agreement' (UNFCCC2022) <https://unfccc.int/process-and-meetings/the-paris-agreement> accessed 15 April 2023.

not influenced by political and other executive decisions. The main test of independence of the regulator can be gleaned from the process of appointment and removal of its senior officials. Where the executive maintains a dominant control of this process, then the regulator lacks independence. Tanzania lacks a clear climate change regulator and relies on the environmental regulator established in the EMA to regulate environmental activities including climate change matters. Apart from this absence of a specific regulator being a major concern, the environmental regulator under the EMA is also not independent as the appointment and removal of its senor officials are solely carried out by the President and the executive officers. This severely weakens the regulatory process for climate change framework in Tanzania.

8.8 Mixture of Facilitative and Prescriptive Measures

To ensure the effectiveness of the climate change regulatory process, there must be a useful blend of prescriptive and facilitative measures in the relevant statutory instrument to ensure a delicate balance between punishment and persuasion when seeking to incentivise corporations to participate in climate change mitigation projects in Tanzania. To unduly rely on prescriptive measures will be counter-productive and futile and fail to achieve the desired objectives; relying mostly on facilitative measures also runs the risk of being too weak and ineffective. Thus, the statute should incorporate a blend of both measures to ensure optimal effectiveness. Unfortunately, the EMA has not adopted this approach and missed the opportunity to punish and persuade corporations in equal measure.

9. IMPLEMENTING THE *DILUTE INTERVENTIONISM* MODEL IN TANZANIA

The model has been discussed in section 2 above. To effectively implement the *Dilute Interventionism* model, a regulatory framework that covers all aspects of climate change, including mitigation and adaptation, is crucial.[88] An autonomous regulator must be empowered to enforce obligations and responsibilities on corporations, government bodies, and individuals concerning climate change mitigation and adaptation.[89] The regulator must have sufficient powers to monitor and enforce compliance with the regulations, including the ability to issue licenses and permits, establish appropriate standards, and impose sanctions where necessary.[90] Tanzania's emissions reduction target, as outlined in its Nationally Determined Contribution (NDC), is to reduce its greenhouse gas emissions by 10% by 2030 compared to business as usual (BAU) levels.[91] The country

[88] Ibid.
[89] Ibid.
[90] Ibid.
[91] United Republic of Tanzania, *supra*-45.

also set a conditional target of reducing emissions by up to 20% by 2030, depending on the availability of international support.[92]

The *Dilute Interventionism* model can be used in Tanzania's climate change regulatory framework to motivate corporations to participate in climate change mitigation while exerting less interventionist burden on them.[93] This will involve restructuring some of the sanction mechanisms at the various stages of the enforcement pyramid in terms of their severity, targets, and impacts on regulatees, but still maintaining the general tenor of the pyramid flow from the most severe measures at the bottom de-escalating upwards based on compliance by corporations.[94] It should also be designed to incentivize corporations to reduce their carbon emissions by providing them with tax credits or other financial incentives.[95] The regulatory framework can also set emissions reduction targets for corporations in line with Tanzania's NDC, and these targets can be gradually increased over time. The regulatory framework can also require corporations to disclose their emissions data and adopt best practices for reducing carbon emissions.

However, it is important to note that while Tanzania's carbon emissions may be relatively low compared to developed countries, the impact of climate change on the country is still severe[96] as Tanzania is vulnerable to the impacts of climate change, including droughts, floods, and other extreme weather events.[97] It is important for the regulatory framework to strike a balance between incentivizing corporations to reduce their carbon emissions and protecting vulnerable communities from the impacts of climate change. This is pivotal because if the regulatory framework focuses too much on incentivizing corporations to reduce their carbon emissions without considering the impacts on vulnerable communities, it could lead to unintended consequences. For instance, it could lead to the displacement of people from their homes, loss of livelihoods, and exacerbate poverty, especially for those who rely on sectors that produce high carbon emissions. On the other hand, if the regulatory framework prioritizes protecting vulnerable communities without considering the need to reduce carbon emissions, it could result in a missed opportunity to mitigate climate change. Therefore, a balance must be struck to ensure that both goals are achieved effectively.

Implementing *Dilute Interventionism* model in Tanzania requires three key features - Framework legislation; statutorily protected independent regulator; and technical competence of the regulator.

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92 *Ibid.*
93 Kikelomo Kila, *supra-17.*
94 *Ibid.*
95 *Ibid.*
96 United Republic of Tanzania, *supra*-45.
97 Romy Chevallier, 'Tanzania's Vulnerability to Climate Change Impacts' (JSTOR2019) 8 <http://www.jstor.org/stable/resrep29563.6> accessed 4 March 2023.

9.1 Framework Legislation

Currently, Tanzania does not have comprehensive framework legislation that focuses only on climate change. To ensure compliance with climate change regulations, this comprehensive framework legislation must be drafted based on the principle of dilute interventionism.[98] The principle of *Dilute Interventionism* emphasizes the use of a combination of punishments and persuasion to encourage compliance with regulations.[99] It is important to use both approaches to create a balanced and effective regulatory environment that can incentivize corporations to reduce their carbon emissions while also protecting vulnerable communities from the impacts of climate change. In the case of Tanzania, a comprehensive framework legislation that focuses solely on climate change can help ensure compliance with regulations related to mitigating and adapting to climate change. Such legislation can establish appropriate standards and procedures for monitoring and enforcing compliance with regulations, as well as provide a range of sanctions and incentives for corporations and individuals to encourage them to take action to reduce their carbon emissions and adapt to the impacts of climate change.

By using the principle of *Dilute Interventionism* as a basis for developing this legislation, Tanzania can strike a balance between regulating carbon emissions and protecting vulnerable communities. Punishments such as fines, sanctions, and penalties can deter non-compliance, while incentives such as tax breaks, grants, and subsidies can encourage voluntary compliance. By using both approaches, the comprehensive framework legislation can create a regulatory environment that is effective, efficient, and fair, while also achieving the goals of mitigating and adapting to the impacts of climate change. As corporations comply with these measures, regulatory interventions can be de-escalated, and a co-regulatory approach introduced. This involves collaboration between regulatory bodies, the state, and corporations to achieve greater compliance. Once regulatory standards have been met, corporations can be entrusted to regulate themselves in certain areas of the regulatory framework.[100]

The Climate Change framework legislation for instance can begin with prescriptive measures, such as the closure of operating facilities, followed by criminal or civil sanctions, like imprisonment or fines against both corporations and their senior officers upon violation to a largely self-regulatory framework with incentives and assistance provided to corporations to encourage compliance with prescribed regulatory standards.[101] If a corporation takes action to address its lack of compliance with climate change regulations before being convicted, the penalty of losing its operating license may be reduced to just the closure of the facility. The overall goal is to encourage corporations to comply with the

[98] Kikelomo Kila, *supra-17*.
[99] Ibid.
[100] *Ibid.*
[101] *Ibid.*

Climate Change regulatory framework and for the enforcement structure to be designed in a way that allows corporations to participate in the regulatory framework and eventually self-regulate.[102] This means that as corporations comply with the regulations, they are given information on co-regulatory interventions they can use to address any gaps in compliance. If they can satisfactorily comply with the prescribed intervention measures up to a certain level, they may eventually become self-regulating entities.[103]

9.2 Statutorily Protected Regulator

The successful implementation of the *Dilute Interventionism* Model requires the appointment of an independent regulator with full authority to license corporations, monitor their activities, and enforce compliance with the relevant regulations.[104] This regulatory body will play a critical role in ensuring that corporations obtain the necessary licenses before undertaking any activities that may pose a risk to human health and the environment.[105] The Environmental Management Act (EMA) does provide for the establishment of the National Environment Management Council (NEMC),[106] which is responsible for regulating and supervising environmental activities in Tanzania. However, the EMA is a general environmental law that covers a wide range of environmental issues and does not specifically focus on climate change. A comprehensive climate change framework legislation based on the *Dilute Interventionism* Model would address this gap by empowering an independent regulator to license corporations for their carbon emissions and enforce compliance with relevant regulations. Therefore, the appointment of an independent regulator with full authority to license corporations for their carbon emissions, monitor their activities, and enforce compliance with relevant regulations is a critical component of the *Dilute Interventionism* Model and would be a significant improvement to the current regulatory framework.

The licensing process is vital, as it serves as an important tool for the regulator to assess the potential environmental impact of the corporation's activities and to implement appropriate control measures to mitigate any potential harm. By issuing licenses, the regulatory body can ensure that corporations operate within the bounds of the law and that they remain accountable for any negative environmental impact that may result from their actions.[107] It is pertinent to state that the issuance of a license by the independent regulator serves as the cornerstone for the continuous operation of corporations engaged in carbon emission activities. The license provides the necessary legal authority for such corporations to

[102] *Ibid.*
[103] *Ibid.*
[104] *Ibid.*
[105] *Ibid.*
[106] Section 16 of the EMA 2004.
[107] *Ibid.*

carry out their activities while ensuring compliance with the regulations outlined in the climate change regulatory framework.[108]

Given the importance of funding, licensing fees can be incorporated to cover the regulatory costs and other expenses incurred in implementing the Act. This not only ensures that the costs are borne by the corporations responsible for carbon emissions but also provides a means to support the continued operation of the independent regulator. By doing so, the regulatory framework can be sustained, ensuring that corporations comply with the regulations and that the environment is protected from harmful carbon emissions.[109] Thus, in developing a legislative framework for Tanzania, the appointment of an independent sole regulator to guarantee that corporations operate responsibly and within the confines of the law must be embedded in the provisions of the framework.

9.3 Technical Competence

For the regulator to effectively implement the *Dilute Interventionism* Model, they must possess the appropriate technical acumen to grasp the complexities of corporate operations.[110] This can be attained through the recruitment of external consultants who possess the requisite technical expertise or through the formation of strategic partnerships with technical institutions that can furnish the necessary proficiency and breadth of knowledge on mitigation issues. In this way, the regulator can ensure that it has the expertise required to evaluate the intricacies of corporate activities and make informed decisions in the implementation of the framework legislation.

10. *DILUTE INTERVENTIONISM* AND SUBSIDIARY LEGISLATION BY THE REGULATOR

The successful implementation of *Dilute Interventionism* hinges upon a robust and comprehensive regulatory framework that encompasses various aspects of climate change, such as mitigation and adaptation.[111] A comprehensive regulatory framework is necessary to address the complex and interconnected challenges posed by climate change. Climate change is not just an environmental issue, but also a social, economic, and political issue that requires a multi-faceted approach. Thus, a comprehensive regulatory framework that covers all aspects of climate change, such as mitigation and adaptation, can ensure that all relevant stakeholders are engaged and that all potential impacts of climate change are addressed.

Mitigation measures focus on reducing greenhouse gas emissions, which is crucial to limiting the extent of climate change. On the other hand, adaptation measures aim to help communities and ecosystems adapt to the impacts of climate change that are already occurring or are likely to occur in the future. Both mitigation and adaptation measures require regulatory

[108] *Ibid.*
[109] *Ibid.*
[110] *Ibid.*
[111] *Ibid.*

intervention to ensure that corporations and individuals are incentivized and held accountable for taking action.

This framework must be crafted in a manner that provides significant power to an autonomous climate change regulator to execute the *Dilute Interventionism* model by enforcing obligations and responsibilities on corporations, governmental bodies, and individuals concerning climate change mitigation and adaptation. Additionally, this regulatory framework should be resilient enough to withstand opposition from corporations that may not be receptive to regulatory oversight.[112]

The development of a Climate Change Act is imperative for Tanzania to institutionalize regulatory controls over corporations in the climate change sector. While the Environmental Management Act (EMA) provides a framework for the management of the environment in Tanzania, it does not specifically focus on climate change as a standalone issue. The EMA only briefly mentions climate change[113] and its impact on the environment.

A Climate Change Act would be specific legislation that deals solely with the challenges posed by climate change. It would outline the regulatory measures required to mitigate and adapt to the impacts of climate change. This would provide greater clarity on the specific actions required to be taken by corporations to address climate change issues, and it would help to ensure that these actions are effectively enforced. To effectively address resistance from corporations opposed to regulation, the regulatory framework must be drafted to empower the sole regulator to impose strict controls on corporations and enforce compliance using a combination of stringent punishments such as license revocation, facility closure, and criminal/civil penalties while providing government incentives to reward compliance and incentivize further compliance.[114] Although the regulators under the EMA have the power to enforce compliance with environmental impact assessment and certification regulations through penalties and punishments for offences related to non-compliance,[115] the EMA does not explicitly empower regulators to take strict actions against non-compliant corporations in the climate change sector or to incentivize compliance using government rewards. Thus, the regulatory framework must also be drafted to allow the regulator to make subsidiary legislation to give effect to the general provisions in the framework legislation.

By consolidating multiple sectors responsible for carbon emissions into a single comprehensive framework, corporations will know what is expected of them, from whom these expectations emanate, and when. Other sectoral regulators should be divested of their powers over carbon emissions and atmospheric pollution regulations, including regulators for the oil and gas, manufacturing, and electricity and power sectors, amongst

[112] *Ibid.*
[113] Section 75 of the Environmental Management Act.
[114] *Ibid.*
[115] Section 60 of the Environmental Management Act.

several others. Vested in the sole independent regulator, this approach will enable it to concentrate its efforts on achieving climate change mitigation and adaptation while preventing the duplication of regulatory functions between different entities carrying out the same or similar functions.[116]

11. IMPLEMENTING VETO FIREWALL PROTECTION FOR THE CLIMATE CHANGE REGULATOR IN TANZANIA

The *Veto Firewall* concept has been discussed in section 2 above. To ensure the independence of the proposed sole climate change regulator in Tanzania's regulatory framework, and to avoid undue pressure or influence of the executive on the regulator, there is need to provide additional protection for the appointment and removal of the senior officials of the regulator to be appointed by the President. In this context, a *veto firewall* system, which can be a single or dual-tier structure, is essential to safeguarding the sole regulator from any undue influence.[117] The single-tier system is already used in the appointment of the regulator in other sectors of the Tanzanian economy, e.g. the appointment of the Governor of the Central Bank of Tanzania. Article 8(1) of the Bank of Tanzania Act[118] provides that the Governor shall be appointed by the President who shall, unless he dies or resigns or vacates or is removed from his office for good cause or is disqualified, hold office for 5 years and shall be eligible for a re-appointment. Just like the appointment of the Governor of the Central Bank of Tanzania, the appointment of Chief Justice is appointed by the President, from amongst those who possess the qualifications.[119] However, unlike the appointment of the Governor of the Central Bank of Tanzania and the appointment of the Chief Justice, the most senior officials/officers of the climate change regulator should be appointed by the President as per the recommendation of an "independent body", subject to the approval of the National Assembly.

By having an independent body recommend candidates for these positions and subjecting the recommendations to the approval of the National Assembly, it reduces the likelihood of political interference in the selection process. This helps to ensure that the most qualified and capable individuals are appointed to these important positions based on their expertise and experience, rather than political affiliations or loyalties. This process can be referred to as "dual-tier veto firewall protection". This way, the sole regulator can carry out its duties without fear of retaliation from the executive.

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116 *Ibid.*
117 Kikelomo Kila, *supra-17*
118 The Bank of Tanzania Act, 2006.
119 The Constitution of The United Republic of Tanzania, Section 118.

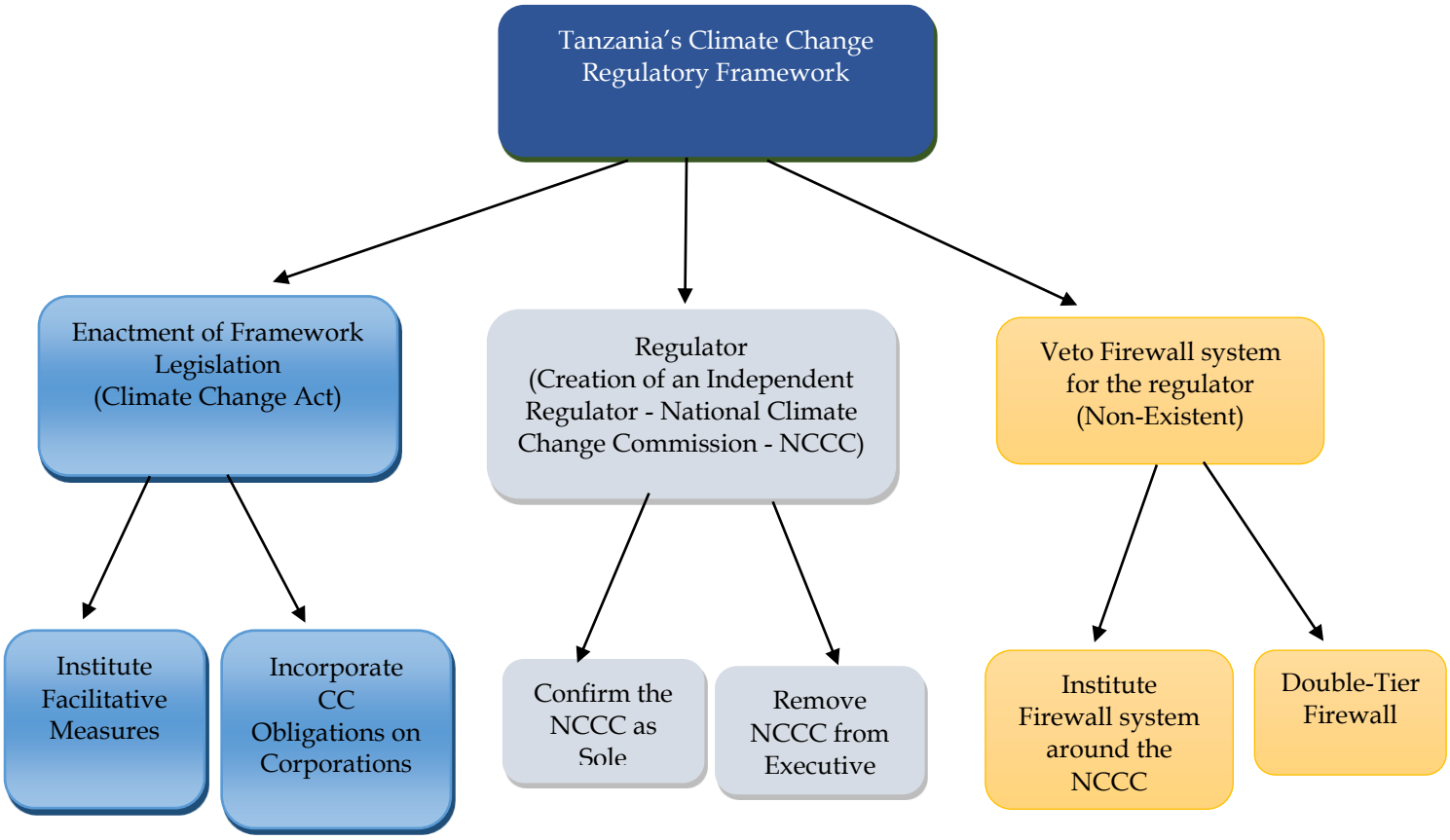

Figure 1: Strategy Map for Reforming the Climate Change Regulatory Framework in Tanzania.

12. DESIGNING A *DILUTE INTERVENTIONISM* PYRAMID IN TANZANIA

The idea of designing a *Dilute Interventionism* pyramid in Tanzania as a framework for climate change mitigation and adaptation in Tanzania is a promising approach. The use of a relatively mild prescription as the first step in the enforcement pyramid, such as the closure of operating facilities responsible for violating recommended carbon emissions, can serve as a deterrent for noncompliance without imposing criminal sanctions that may discourage participation in climate change mitigation and adaptation efforts.

As corporate compliance increases, the next recommended step of civil and administrative sanctions against the most senior officials of the corporation can be an effective tool for ensuring accountability and encouraging corporations to comply with climate change regulations. This can include fines or penalties, as well as administrative measures such as suspension or revocation of permits or licenses.[120]

The use of self-regulatory and voluntary guidelines for achieving climate change regulatory goals can also be an effective approach,

[120] Kikelomo Kila, *Supra 124.*

particularly when combined with a comprehensive legislative framework enacted by the Tanzania State Government. This approach allows corporations to take responsibility for their compliance and can lead to more sustainable long-term solutions for climate change mitigation and adaptation.[121] Finally, the use of economic and fiscal incentives can provide a powerful tool for encouraging corporations to fully implement climate change mitigation and adaptation projects. This can include tax incentives or rebates, as well as government grants or subsidies for sustainable initiatives.

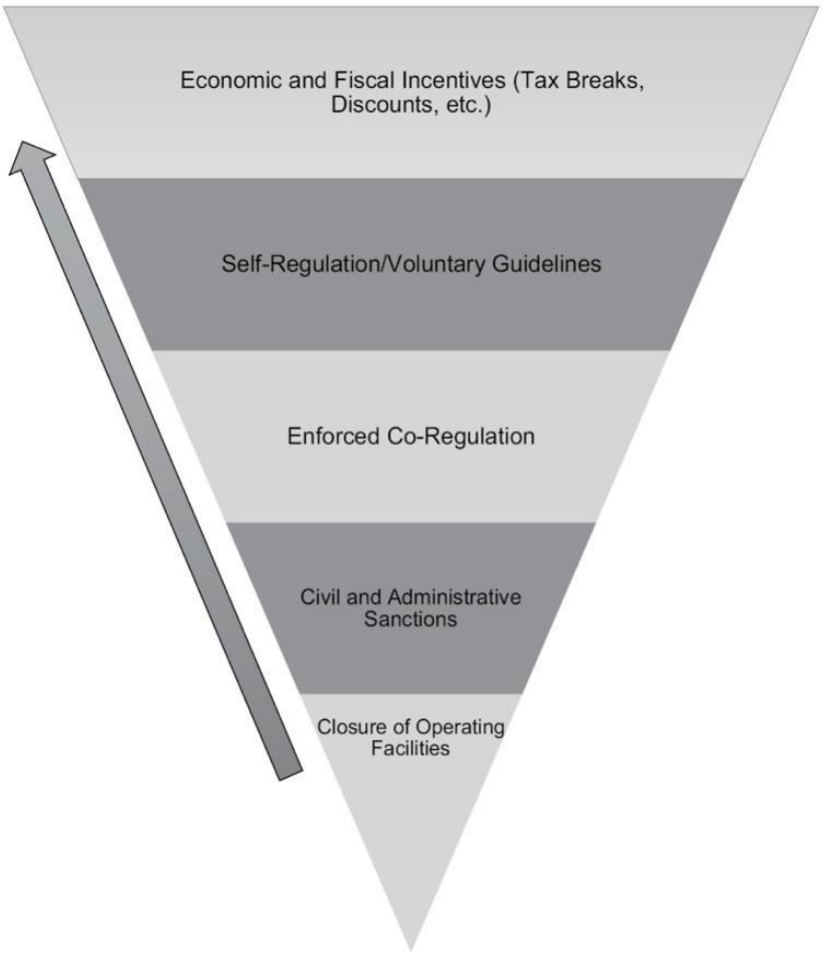

Figure 2: Corporate Regulation for Climate Change Mitigation in Africa (Source: Kikelomo Kila[122])

13. CHALLENGES TO IMPLEMENTING *DILUTE INTERVENTIONISM* AND VETO FIREWALL PARADIGM IN TANZANIA

The implementation of *Dilute Interventionism* and veto firewall paradigm in Tanzania faces some challenges and they are:

[121] *Ibid.*
[122] *Ibid.*

1. *Limited Capacity:* The successful implementation of *Dilute Interventionism* requires a team of qualified and well-trained regulators, lawyers, and policymakers. However, Tanzania faces capacity challenges, including limited resources and expertise, to implement the framework effectively.
2. *Resistance from Corporations:* Corporations may resist the implementation of dilute interventionism, as it may increase their compliance costs and reduce their profits. Corporations may also challenge civil and administrative sanctions and self-regulatory guidelines, leading to legal disputes.
3. *Weak Legal Framework:* The effectiveness of the *Dilute Interventionism* and veto firewall paradigm depends on the strength of the legal framework in place. In Tanzania, there is no legal framework solely for climate change, making it difficult to enforce the regulations effectively.
4. *Political Interference:* Political interference and corruption may pose a significant challenge to the implementation of *Dilute Interventionism* and *veto firewall* paradigms in Tanzania. Because the appointment of senior officials like the governor of the central bank of Tanzania and the chief justice is done without the recommendation of an independent body, introducing an independent body as a "dual-tier protection" may lead to political resistance and interference in the decision-making process of the sole regulator.
5. *Lack of Public Awareness:* The success of *Dilute Interventionism* and veto firewall paradigms depends on the active participation and cooperation of the public. However, limited public awareness of a new regulatory framework may hinder its implementation.

14. CONCLUSION AND RECOMMENDATION

In conclusion, the *Dilute Interventionism* Model and *Veto Firewall* Paradigm offer promising solutions for regulating corporations involved in climate change activities in Tanzania. However, successful implementation will require overcoming various challenges, including limited capacity, resistance from corporations, weak legal framework, political interference, and lack of public awareness. To achieve sustainability, Tanzania must prioritize climate change mitigation and adaptation and adopt a proactive and comprehensive approach to regulating climate change. This can be achieved by enacting a comprehensive regulatory framework for climate change mitigation and adaptation, which takes into account the unique circumstances of the country.

In light of the above, it is recommended that the Tanzanian government collaborates with stakeholders, including corporations, civil society, and international organizations, to develop a comprehensive framework legislation that incorporates the *Dilute Interventionism* Model and *Veto Firewall* Paradigm which ensures compliance with climate change regulations while supporting economic growth. To ensure the success of

these recommendations, the government must demonstrate a strong commitment to drafting and implementing this regulatory framework. This commitment can first be shown by collaborating with all stakeholders in Tanzania to develop and implement a comprehensive regulatory framework for climate change mitigation and adaptation. Furthermore, the government should prioritize public education and awareness campaigns to increase understanding and support for the regulatory framework. The *Dilute Interventionism* Model and *Veto Firewall* Paradigm can serve as effective tools to achieve this goal, but their success will depend on a strong commitment from the government and all stakeholders involved.

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AUTHOR'S DECLARATION AND ESSENTIAL ETHICAL COMPLIANCES

Authors' Contributions (in accordance with ICMJE criteria for authorship)
This article is 100% contributed by the sole author. S/he conceived and designed the research or analysis, collected the data, contributed to data analysis & interpretation, wrote the article, performed critical revision of the article/paper, edited the article, and supervised and administered the field work.

Funding
No funding was available for the research conducted for and writing of this paper. Therefore, acknowledging any support agency is not applicable in case of this research or the written work. However, informal support of institutional supervisors, colleagues and respondents is duly acknowledged.

Research involving human bodies or organs or tissues (Helsinki Declaration)
The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

Research involving animals (ARRIVE Checklist)
The author(s) solemnly declare(s) that this research has not involved any animal subject (body or organs) for experimentation. The research was not based on laboratory experiment involving any kind animal. The contexts of animals not even indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of ARRIVE does not apply in cases of this study or written work.

Research on Indigenous Peoples and/or Traditional Knowledge
The author(s) solemnly declare(s) that this research has not involved any Indigenous Peoples as participants or respondents. The contexts of Indigenous Peoples or Indigenous Knowledge, if any, are only indirectly covered, if any, through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or prior informed consent (PIC) of the respondents or Self-Declaration in this regard does not apply in cases of this study or written work.

Research involving Plants
The author(s) solemnly declare(s) that this research has not involved the plants for experiment or field studies. The contexts of plants are only indirectly covered through literature review. Yet, during this research the author(s) obeyed the principles of the Convention on Biological Diversity and the Convention on the Trade in Endangered Species of Wild Fauna and Flora.

(Optional) Research Involving Local Community Participants (Non-Indigenous)
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