STRATHMORE LAW JOURNAL

STRATHMORE LAW JOURNAL

Beyond Formal Law: The Role of Ethics, Beliefs, and Values in Amplifying Action against Plastic Pollution in Africa

VOLUME 8, NUMBER 1

NOVEMBER 2024

Strathmore University Press

Strathmore Law School
Madaraka Estate, Ole Sangale
Road P.O. Box 59857 00200
Nairobi - KENYA
Tel. +254-703-034601
editor.sup@strathmore.edu
www.press.strathmore.edu
www.law.strathmore.edu
Twitter: @strathmorelaw

Editorial Team

Typesetting and artwork by John Agutu,
Email: agutujo@gmail.com

For more information, visit:
https://journal.strathmore.edu/index.php/law/

Printed in Nairobi

Contents

Editorial

The Editorial Board of the Strathmore Law Journal is pleased to publish a special issue on environmental law, under the theme "*Beyond Formal Law: The Role of Ethics, Beliefs, and Values in Amplifying Action against Plastic Pollution in Africa."* This publication is timely in light of the ongoing negotiations under United Nations Environmental Assembly (UNEA) aimed at developing a legally binding treaty on plastic pollution, including in the marine environment.

The central theme in the issue is that while formal laws play a critical role in tackling environmental challenges, they do not have absolute control over human behavior. Beyond these formal laws, an often-overlooked body of informal laws—such as ethics, culture, beliefs, and religion—also shapes individual and collective actions. In pluralistic societies, these informal laws coexist with formal regulations, sometimes conflicting and sometimes reinforcing each other. This issue, the first of its kind, explores how these informal regulatory frameworks can be harnessed to strengthen and complement formal legal mechanisms in addressing plastic pollution.

The issue kicks off with an article titled "*Role of Informal Laws in Tackling the Plastic Crisis"*. It propounds that considering the ubiquitousness of plastic pollution in our lives, informal norms and practices like customs, ethics, and beliefs will play a significant role in shaping societal responses and enhancing the effectiveness of plastic-related laws.

The second article, *"Informal Institutions, Informal Mechanisms, and their Utility in the Promotion of Environmental Protection in Africa",* explores the contributions of informal institutions and informal mechanisms such as self-coordination, collective action, collective identity, graduated sanctions, and the role of religion in environmental preservation in the protection of the environment. It further analyses the negotiations of a plastic treaty, highlighting that integrating religious and customary norms can lead to better outcomes in the governance of plastic waste.

In search of moral environmental stewardship, the third article, "*Plastic Pollution and our Moral Responsibility: Lessons from the African Eco-Communitarian Responsibility Approach*", argues for adoption of the Eco-Communitarian Responsibility approach to redefine moral responsibilities towards plastic pollution

in Africa, emphasizing the interconnectedness and collective responsibility, and proposes integrating these principles into global sustainable environmental practices. Taking a similar approach, the fourth article "*Social Norms and Pro-Environmental Behaviour in a Sub-Saharan African Sample*", examines the influence of injunctive norms (what people should do) and descriptive norms (what people do) on pro-environmental behaviour in sub-Saharan Africa, specifically among 581 Nigerian university students. The study suggests that recognizing the mutual suppression effect of these norms can inform social policies to better promote environmentally friendly behaviour.

In appreciating the role of indigenous and traditional knowledge in combatting environmental challenges, the authors in the fifth article, *"The Role of Indigenous and Traditional Knowledge in Combatting Plastic Pollution"* explores how plastic pollution impacts social, economic, cultural, and environmental aspects of life. It documents the recent developments in recognition of indigenous and traditional knowledge in combatting environmental challenges and argues that incorporating indigenous and traditional knowledge in the mainstream scientific solutions can offer valuable solutions for achieving a plastic-free planet.

Children and young people have become an important constituency in environmental governance including in climate litigation. Amelia in "*Spinning the Yarn: Exploring the Potential of Narratives Framed by Children and the Youth in Shaping Ethics, Beliefs and Value Systems for Plastics Governance in Africa"* investigates the role of children and youth in shaping informal norms for plastics governance in Africa. The article argues that children can frame persuasive narratives to influence ethics, beliefs, and customs positively using the Narrative Policy Framework.

Finally, Khomba in *"Towards Environmental Restoration and Sustainability: Embracing the African Ubuntu Philosophy"* explores the importance of cultural beliefs, particularly the African Ubuntu philosophy, in shaping society and the natural environment relationship. It argues that integrating cultural norms and beliefs with legal frameworks, such as a plastics treaty, can enhance environmental restoration efforts and inspire a global dialogue on addressing plastic pollution.

I would like to thank and appreciate the contributors of this issue. Being the first issue dedicated to exploring role of informal laws in plastic pollution, the authors have contributed to this breakthrough and I trust the issue provides a platform for exploring the ideas further, beyond plastic pollution to environmental pollution and eventually to other fields of law.

I am also grateful to Konrad Adenaeur Stiftung for their generosity. In addition to providing financial assistance at the conference where these papers were presented, KAS generously funded the publication of this issue.

Macharia Kaguru
Editor-in-Chief
Strathmore Law Journal

Foreword

I am honored to introduce this special edition of the *Strathmore Law Journal*, featuring a compilation of insightful papers derived from the conference *"Beyond Formal Law: The Role of Ethics, Beliefs, and Values in Amplifying Action against Plastic Pollution in Africa."* This conference, which was held on 3rd November 2023, was jointly organized by Strathmore University, the United Nations Environment Programme (UNEP), and the Konrad Adenauer Stiftung Rule of Law Program for Sub-Saharan Africa.

Notably, the concept of *"Beyond Formal Law"* was envisioned much earlier, during the 4th International Parliamentarians Conference on the Freedom of Religion or Belief (FoRB), which we co-hosted in Nairobi in May 2023. The conference focused on the interlinkages between FoRB and the Sustainable Development Goals (SDGs). In this context, it also emphasised the integration of diverse perspectives on climate justice and environmental governance, engaging parliamentarians, academics, NGOs, religious leaders, and environmental law experts. Particularly, discussions on FoRB and Environment and Climate Justice inspired the idea of a multidisciplinary approach to addressing environmental justice challenges. These deliberations highlighted the need to implement environmental protection laws and policies through informal religious and cultural channels, offering an effective pathway to streamline the shared goals of legislators, policymakers, and the broader community.

This vision aligned seamlessly with UNEP's work on developing *an international legally binding instrument on plastic pollution, including in the marine environment*; and Strathmore University's commitment to advancing this innovative approach. Collectively, our shared interests culminated in the conference, which sought to explore how norms grounded in ethics, beliefs, and values could complement and enhance formal legal frameworks in addressing plastic pollution.

The conference gathered a diverse range of participants, including academics, civil society organizations, representatives of indigenous peoples, students, and environmental governance experts from Kenya, Tanzania, South Africa, Malawi, Ghana, and Australia. Thereafter, its findings were compiled into a report and availed at the 3rd session of the Intergovernmental Negotiating Committee (INC) on developing the aforestated legally binding instrument, held at UNEP headquarters in Nairobi in November 2023.

Beyond the conference, our collaboration fostered ongoing engagement, culminating in this edition of the *Strathmore Law Journal*. Following a call for papers, we were deeply encouraged by the responsiveness and commitment of contributors—leaders, youth representatives, religious figures, indigenous community advocates, and academics—who brought geographical and professional diversity to their work. The seven papers featured in this edition reflect the depth of research and innovative solutions discussed during the conference.

Each contribution demonstrates that addressing plastic pollution requires more than formal legal frameworks. It calls for the integration of informal norms—ethics, beliefs, and values—to influence behavior and drive meaningful change. This holistic approach underscores the transformative potential of informal norms in shaping sustainable environmental practices.

I extend my deepest gratitude to UNEP, notably, Prof. Patricia Kameri-Mbote, Director, UNEP Law Division and the leadership of Strathmore University School of Law for their invaluable collaboration, as well as to all conference participants, authors, editors, and reviewers whose tireless efforts made this publication possible. It is my hope that these contributions will inspire further academic inquiry and practical action towards a sustainable, pollution-free future.

Dr. Stefanie Rothenberger
Director, Rule of Law Program for Sub-Saharan Africa,
Konrad Adenauer Stiftung

Foreword

Plastic pollution is one of the most pressing environmental challenges of our time, fueling the triple planetary environmental crises of climate change, nature, land and biodiversity loss, and pollution and waste. With over 400 million tonnes produced annually—nearly half of it for single use—plastic waste permeates land, rivers, and oceans, endangering ecosystems, human health, and sustainable development. Its transboundary nature amplifies the plastics crisis, threatening marine biodiversity, fisheries, and coastal communities, from microplastics in deep-sea sediments to plastic debris disrupting food chains. Urgent, coordinated action across governance levels and sectors is essential to address this growing global threat.

Recognizing the urgency and scale of the problem, the United Nations Environment Assembly (UNEA) – the highest decision-making body on the environment - adopted Resolution 5/14 in 2022, titled "End Plastic Pollution: Towards an International Legally Binding Instrument." This landmark resolution acknowledges that plastic pollution is a global problem that requires a coordinated international response, taking into account the full lifecycle of plastics. It mandates the development of a legally binding agreement to address plastic pollution, including in the marine environment, through a comprehensive and inclusive approach that integrates traditional and indigenous knowledge, fosters interdisciplinary collaboration, enhances coordination and cooperation at all levels, and promotes the sustainable production and consumption of plastics.

Formal legal systems provide the essential framework for addressing environmental challenges. In this regard, many multilateral environmental agreements and national environmental laws have been concluded. However, in plural legal systems, where diverse normative frameworks coexist, other norms, practices and legal realities—deeply rooted in culture, ethics, and religion, among others—hold significant sway over human behavior. These norms, practices and legal realities, though not formalized, profoundly influence how communities interact with their environment, offering a powerful avenue to complement and strengthen formal legal measures. By leveraging these norms, practices and legal realities, societies can build a more comprehensive, holistic approach to tackling pressing issues such as plastic pollution, ensuring that responses resonate with local values and practices, while fostering widespread environmental stewardship.

In this context, the conference on *"Beyond Formal Law: The Role of Ethics, Beliefs and Values in Amplifying Action Against Plastic Pollution in Africa,"* was held in 2023, as a collaborative initiative with the UN Environment Programme, Konrad-Adenauer-Stiftung (KAS) and Strathmore University Law School. It aimed to explore how governance systems — rooted in norms, practices and other legal realities can complement formal legal frameworks in addressing plastic pollution. By bringing together policymakers, legal scholars, faith leaders, and environmental leaders, the conference provided valuable insights into integrating these non-formal norms into national and global environmental governance, with a focus on Africa.

In line with this evolving understanding, UNEP, including through its Law Division, is actively exploring the role of norms that exist outside formal law, in environmental governance. This aligns with UNEP's ongoing efforts to incorporate diverse approaches in tackling environmental challenges.

This publication, featured in a special issue of the *Strathmore Law Journal,* serves as the starting point for a deeper exploration into the role of norms, practices and other legal realities outside formal law in combating plastic pollution. The papers presented here provide valuable insights into how cultural, ethical, and religious norms can complement formal environmental laws, contributing to a more comprehensive and effective approach towards sustainability.

I extend my deepest gratitude to our partners, Konrad-Adenauer-Stiftung and Strathmore University, as well as all contributing scholars and practitioners, whose dedication has made this publication possible. Their unwavering commitment to advancing knowledge and innovative solutions in environmental governance is invaluable. I hope that this marks the beginning of an ongoing exploration into the role of informal norms, practices and other legal realities in environmental governance, particularly in the era of needing to urgently address the triple planetary environmental crises of climate change, nature, land and biodiversity loss, and pollution and waste.

Prof. Patricia Kameri-Mbote
Director, Law Division,
United Nations Environment Programme

Foreword

Environmental degradation is one of the greatest threats facing humanity today. It is altering natural ecosystems, undermining the attainment of the Sustainable Development Goals (SDGs), and causing irreversible consequences for both people and nature. The United Nations has identified a triple planetary environmental crisis of climate change, biodiversity loss, and pollution that poses an existential threat to our shared future. Plastic pollution is a significant contributor to this triple planetary crisis, demanding our urgent action.

Plastic pollution permeates every aspect of our lives, causing profound economic, social, and environmental challenges. It disproportionately affects vulnerable communities and transcends national and regional boundaries, necessitating a strategic, coordinated, and cooperative response, including all systems that regulate human behavior. While formal law remains a powerful and indispensable tool in ending the plastic pollution menace, it can greatly benefit from the complementary role of informal norms. These norms enhance and support legal frameworks by leveraging societal values, cultural beliefs, and ethical principles to amplify action against plastic pollution.

Recognizing the relevance of this issue, the United Nations Environment Programme (UNEP), Konrad-Adenauer-Stiftung, and Strathmore University Law School co-convened an academic workshop in November 2023 at Strathmore University. The workshop was titled *Beyond Formal Law: The Role of Ethics, Beliefs, and Values in Amplifying Action against Plastic Pollution in Africa*. It underscored the need to look beyond formal legal frameworks and explored how informal norms can help to address plastic pollution.

Strathmore University Law School is proud to present this special issue, which uniquely addresses the place of informal norms in addressing plastic pollution. This issue is timely, as it aligns with ongoing global negotiations for a plastic treaty. It is distinct in its exploration of informal norms, alongside environmental law, and the multidisciplinary perspectives from various professions and social contexts. These contributions offer a holistic and interdisciplinary approach to environmental governance.

Our heartfelt gratitude goes to our partners—United Nations Environmental Programme (UNEP), Konrad-Adenauer-Stiftung, and all contributors—for their invaluable support in this initiative. Strathmore University Law School remains committed to fostering collaboration and serving as a hub for the study of the place of informal norms in environmental governance.

I hope that this special issue will inspire further dialogue, research, and action in addressing plastic pollution and broader environmental challenges. By integrating formal legal frameworks with ethics, values, and community-driven initiatives, we can advance a more sustainable and just world for all.

Dr. Jane Wathuta
Dean,
Strathmore University Law School

Role of Informal Laws in Tackling the Plastic Crisis

Patricia Kameri-Mbote[*]
Macharia Kaguru[**]

Abstract

Plastic pollution is a global catastrophe, simultaneously contaminating ecosystems through chemical leaching and physically through structural disruptions. To reverse this crisis in a coordinated and cooperative manner, the United Nations Environment Assembly (UNEA) adopted a resolution in 2022 to negotiate and develop a legally binding treaty addressing the plastic pollution, including in the marine environment. While the envisaged treaty and state laws that will implement the treaty once adopted (collectively formal laws) will be pivotal in tackling plastic pollution, this paper argues that these formal laws will inevitably operate alongside an often overlooked yet influential body of informal norms and practices comprising among others, customs, ethics, beliefs and religious practices. Thus, while formal laws' authority, clarity, and enforceability is critical to addressing the crisis, embracing and utilizing these informal norms provides an important opportunity to ending the plastic crisis as their interplay with formal frameworks will shape societal responses and significantly influence the implementation and effectiveness of plastic related laws. Further, given the pervasiveness and ubiquity of plastics in our modern life, the associated effects of plastic pollution on daily human lives and the radical behavioral change required to end the crisis, informal norms (unofficial laws) may provide more powerful and effective incentives or frameworks to deal with plastic pollution than official law.

Keywords: Informal laws, plastic pollution, pluralistic systems, interplay, environmental governance

* SJD, Director, Law Division, United Nations Environment Program (UNEP), (Nairobi, Kenya). patricia.mbote@un.org

** LL.M, Teaching Fellow, Strathmore University Law School, Environmental Law and Policy Specialist, Law Division, United Nations Environment Program (UNEP), (Nairobi, Kenya).

I. Introduction

Globally, plastic pollution has escalated to critical levels. Annually, the globe produces four hundred and thirty million tons of plastics,[1] two thirds of which have a short lifespan. Every day, an equivalent of two thousand garbage trucks full of plastics find their way into water resources.[2] Once in the environment, plastics alters natural ecosystems, destabilizes aquatic life, reduces climate change adaptation capabilities and negatively affects people's environmental, social and economic life.[3] Recent studies have found plastics in remote areas such as Antarctica,[4] Mariana Trench[5] and at the snow cap of Mount Everest.[6] This transboundary movement of plastics disproportionately affects the vulnerable communities.[7]

The plastic crisis, like many global environmental challenges, is beyond the capacity of any single state to address it effectively. Thus, an urgent, coordinated and collective response is required. To this end, UNEA, the universal assembly of member states on environmental matters, adopted a resolution in 2022 to negotiate and develop a legally binding treaty addressing plastics.[8] Once adopted, the treaty will play a critical role in managing the production, use and disposal of plastics. States will domestically adopt laws and policies to implement their commitments under the envisaged treaty.

The treaty and state backed national laws (formal laws) passed to implement

---

1 United Nations Environmental Programme (UNEP), "Everything you Need to Know About Plastic Pollution: Everything you Need to Know About Plastic Pollution" April 2023 available at— < https://www.unep.org/news-and-stories/story/everything-you-need-know-about-plastic-pollution> accessed on November 28, 2023.

2 UNEP, "Knowing Plastics" available at—< https://www.unep.org/plastic-pollution> accessed on November 28, 2023. On climate change, global plastic manufacturing processes generates approximately four percent of carbon emissions becoming an important contributor to climate crisis.

3 Fuller, S., Ngata, T, Borrelle, S.B, Farrelly, T, 'Plastics Pollution as Waste Colonialism in Te Moananui', 29(1) *Journal of Political Ecology,* 2022, 534-560.

4 Aves A, Revell L, Gaw S, Ruffell H, Schuddeboom A, Wotherspoon N, LaRue M, McDonald A, 16(6) 'First evidence of Microplastics in Antarctic Snow' *The Cryosphere,* 2022, 2127-2145.

5 Chiba S, Saito H, Fletcher R, Yogi T, Kayo M, Miyagi S, Ogido M. Fujikura K, 96, Human Footprint in the Abyss: 30 Year Records of Deep-sea Plastic Debris, *Marine Policy,* 2018, 204-212.

6 Napper E, Davies F, Clifford H, Elvin S, Koldewey J, Mayewski A, Miner R, Potocki M, Elmore C, Gajurel P, Thompson C, 2020, 621-630.

7 For instance, see a study showing that plastics in Seychelles beache comes from Indonesia, China and other far-off countries in Vogt-Vincent, N.S., Burt, A.J., Kaplan, D.M., Mitarai, S., Turnbull, L.A. and Johnson, H.L., 2023. Sources of Marine Debris for Seychelles and Other Remote Islands in the Western Indian Ocean. Marine Pollution Bulletin, 187, p.114497.

8 UNEP/EA.5/Res.14 Resolution adopted by the United Nations Environment Assembly on 2 March 2022.

it will be critical in tackling the plastics crisis. However, these formal laws will neither be enough nor will they be the only "laws" at play in ending this problem. The effectiveness of formal laws is often limited, particularly in societies characterized by plural legal systems,[9] a feature shared by many countries.[10]

Formal laws do not have overall control of people's lives and their affairs.[11] Indeed, besides these formal codes, there exist deep rooted and prevalent social practices and rules of convenience of greater appeal and influence over societies. These informal laws emanate from among others, ethics, religion, customs and culture and play a fundamental role in shaping or regulating human behaviors. The influence of these informal norms is prevalent in environmental governance.[12] In many societies, there exists a close and intricate relationship between human beings and nature and often these societies' social, cultural, economic rules reflect a socialization that sustainably utilizes environmental resources but also a responsibility to maintain environmental integrity.[13] Plastics have a social life,[14] with cultural, spiritual, social identity, economic and environmental disruptions[15] and these informal norms will be at play in promoting the end of the plastic crisis. This article argues that the pervasive and ubiquitous nature of plastics makes these informal norms more powerful in regulating plastic pollution in society than formal laws. They will not only play a crucial role in shaping narratives about the impacts of plastic pollution but also offer a unique opportunity to

---

9 Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law,' *University of Nairobi School of Law*, 2021.

10 Shimray G, 'Legal pluralism in Southeast Asia: insights from Nagaland' in Marcus Colchester & Sophie Chao (eds), Divers Paths to Justice: Legal pluralism and the rights of indigenous peoples in Southeast Asia (Forest Peoples Programme (FPP) and Asia Indigenous Peoples Pact (AIPP), 2011), Hern A, 'When Do Women Win in Legally Plural Systems? Evidence from Ghana and Senegal' 60(4), The Journal of Modern African Studies, 2022, 527-546.

11 Kameri-Mbote, P, Contending Norms in a Plural Legal System: The Limits of Formal Law, *University of Nairobi School of Law*, 2021.

12 See for instance, Redvers N, Aubrey P, Celidwen Y, Hill K (2023) 'Indigenous Peoples: Traditional knowledges, climate change, and health' 3(10), PLOS Glob Public Health, 2023, pp. 1-20 for for a discussion on the conceptualization of nature by indigenous peoples and Kameri-Mbote, P, Contending Norms in a Plural Legal System: The Limits of Formal Law, *University of Nairobi School of Law*, 2021.

13 Okyere-Manu B, Morgan N, Nwosimiri O, Cultural, ethical, and religious perspectives on environment preservation, 85 *Best Practice & Research Clinical Obstetrics & Gynaecology*, 2022, 94-104.

14 University of Cambridge Energy Interdisciplinary Research Centre, The Cultures Behind Plastic Waste Around the World, available at —<https://www.energy.cam.ac.uk/Plastic_Waste/culture-global-plastic-waste#:~:text=Findings%20showed%20that%2C%20like%20people,about%20us%20is%20constantly%20changing> accessed on November 28, 2023.

15 Fuller, S., Ngata, T., Borrelle, S.B., Farrelly, T., 2022. Plastics pollution as waste colonialism in Te Moananui, *Journal of Political Ecology,* 534-560.

leverage ethics, morality, cultural norms, religious principles, and value systems for enforcement, thereby maximizing their potential in changing behavior.

II. Nature of formal and informal laws in legal pluralist contexts

To appreciate the existence, place and role of informal laws in governing human behavior and in plastic pollution specifically, we must grapple with the question, what is law?[16] Unfortunately, despite the consensus that law is an indispensable tool for ordering societies, its meaning is contested.[17] There are also many unsettled jurisprudential debates about the nature, function, origin and power of law. This section briefly discusses the nature of law from two jurisprudential schools. By way of comparison, the nature of informal norms is also discussed to provide differences between them and their interfaces.

(i) Nature of formal laws

To distinguish what is law from what is not law, the analysis of the nature of law proceeds on the premise that law is a special social phenomenon, with defining features.[18] Even then and as pointed out above, its defining characteristics are contested. These contests have engaged scholars of various jurisprudential schools' overtime, with each school attempting to explore the nature of law.[19] These schools often conflict,[20] yet each strives to shape and influence the understanding and development of legal systems. Their differing conceptions of what constitutes law carry profound and complex social implications concerning law's legitimacy, function, force and attendant obligation to be obeyed.

While there exist many schools of analytical jurisprudence,[21] each of them concludes with the inclusion of some practices as law and exclusion of others. This paper does not attempt to provide an exhaustive discussion of the differing

---

16 Here, the term law, as is generally used in legal circles is taken to mean formal laws.

17 Kameri-Mbote, P, Contending Norms in a Plural Legal System: The Limits of Formal Law, *University of Nairobi School of Law*, 2021.

18 Marmor A, Sarch A, "The Nature of Law", The Stanford Encyclopedia of Philosophy (Fall 2019 Edition) available —<https://plato.stanford.edu/entries/lawphil-nature/> accessed November 28, 2023.

19 Uzomah M, 'The Concept, Meaning and Nature of Law: Toward A General Conceptual and Ontological Configuration of Law', 5(1) *Ekpoma Review*, 2018.

20 Wahlgren P, The purpose and usefulness of jurisprudence, *Stockholm Institute for Scandinavia Law,* 2010, 506-515.

21 Postema, G.J. and Postema, G.J., Analytic jurisprudence established. *A Treatise of Legal Philosophy and General Jurisprudence: Volume 11: Legal Philosophy in the Twentieth Century: The Common Law World*, 2011, 3-42.

positions and only uses two schools of thought to illustrate the nature of law to explain the place and the role of informal norms. First, the natural law school throughout its various strands argues that beyond human law (man-made law) there is basic, universal, objective and immutable rules of reason discernible through human reason-the true law.[22] Thus, human law-making process is not limitless as it must remain consistent with these natural and universal rules if it is to be valid. These rules may be either procedural or substantive or both.[23]

Positivism school of thought discounts the natural law theory's source and validity of law. As a school influenced by science, it explains the existence and character of law as a social fact discernible from human behavior and intentions.[24] Unlike natural law, the merits or demerits of law is not a defining feature for positivists.[25] While there are many strands in this theory, its defining feature is its argument that law is what is promulgated by a legal human authority as a social fact.[26] It therefore follows that any social rules and practices not passed by the formal authority as law are not law properly so called.

Despite the differences between these two schools, there is commonality in their attempt to define those social rules that qualify as law. Thus, while natural law asserts that laws derive from pre-existing, immutable, and objective rules set forth by a higher deity, positivism contends that laws are social constructs, enacted by human authority. In addition, in natural law, the validity of law depends on a higher authority, discovered through human reason, while in positivism, it derives from human authorities, such as parliaments or courts. Norms that do not follow this formulation path do not qualify as law under the schools.

A difference between positivism and informal norms must be made. An argument may be made that there is no difference between positive law and the informal norms if positive law is derived from societies and elevated into formal laws. Such an argument proceeds on the belief that since positive law is derived from human behavior by the formal authority, the law is then part of informal norms that graduate to formality through some action. While this argument is plausible, it fails on two fronts. First, while informal norms may well be formal

---

22 Noonan H, 'Natural Law', 3, Marq. L. Rev., 1919, 91-95.

23 Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law', University of Nairobi School of Law.

24 Sevel M, 'Legal positivism and the rule of law', 34, Australasian Journal of Legal Philosophy, 2009, 53–68.

25 Lobban M, Austin J, The Cambridge Companion to Legal Positivism. Cambridge Companions to Law, *Cambridge University Press,* 2021, 225-247.

26 Fabra-Zamora L, Legal Positivism as a Theory of Law's Existence: A Comment on Margaret Martin's Judging Positivism, 55 *Isonomía*, 2021, 193-211.

law, informal norms only become law after adoption by a formal authority. Thus, there exists a dozen informal laws that otherwise govern human behavior but have not yet qualified as law. Secondly, this argument assumes a homogenous society with agreed social norms. But given the diversity of societies within states with different life values, priorities, preferences and cultures, formal law can at best only remain normative, each time grappling with complex social dynamics of the societies and at worst exclude some societies' social norms. Thus, in any society informal norms will always exist.

Another important defining feature of law, whether formal or informal, is its coercive enforcement character.[27] Again, while there is consensus that law requires some force to be effective, the source of this force is contested. Some scholars believe that law has an internal coercive force enforced through the state while to others, this force is external and is enforced through morality, culture, religious beliefs among others.[28] Formal law is characteristically coercive. The need to attach a consequence of violating each law is based on the presumption that to shape and influence human acts into desirable behavior, law must be accompanied by incentives; rewarding those that follow it while punishing those that violate it.[29] Without consequences, law is a mere suggestion, advise or best practice. Any law must be designed to create incentives to induce compliance.[30] Thus, the law clothes a state with detection, investigatory, prosecutorial and punishment powers.[31]

Another lens through which to understand the nature of law is the concept of rule of law. This is a political doctrine that requires government and the governed to be bound and abide by the law.[32] The rule of law concept has three important organizing principles: limited government, formal legality and government of laws.[33] Of relevance for this paper are the last two principles. On formal legality, laws should be publicly passed in advance and must be capable of being complied with and applied to everyone. This element seeks to create stability and predictability.[34] On government of laws, all persons, including the state should be governed by laws. It seeks to ensure that there is no differentiation

27 Gkouvas T, 'The Place of Coercion in Law', Cambridge University Press, 2023.

28 Friedrich H, "The Road to Serfdom", Chicago: University of Chicago Press, 1994, 80.

29 Cook P, 'The Economics of Criminal Sanctions' in *Sanctions and Rewards in the Legal System: A Multidisciplinary Approach* M.L. Friedland (eds), University of Toronto Press, 1989, 50–78.

30 Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'.

31 Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'.

32 Tamanaha Z, 'The history and elements of the rule of law', 232-247.

33 Tamanaha Z, 'The history and elements of the rule of law,' 247-232.

34 Friedrich H, "The Road to Serfdom", Chicago: University of Chicago Press, 1994, 80.

in terms of the applicability of law to government, its officials and the governed.[35] Does it mean that those rules that regulate and influence human behavior have to meet these features? We will address the nature of informal laws in the next section.

(ii) Nature of informal laws

Informal laws or unofficial laws refer to set of rules or norms that are not established by an official body or authority but nonetheless regulate or influence human behavior.[36] In addition to prescribing the rights, duties and the accepted code of conduct, informal laws have social institutions that enforce them.[37] Their coming into being, socialization and implementation does not rely on formal institutions established under formal laws. However, these informal norms may be incorporated into formal laws overtime, albeit with some nuances where they become formal laws and benefit from the state instrumentalities.[38] Unlike formal norms, informal norms are not homogenous, as they vary widely across societies, religions, ethical frameworks, and cultural contexts.

Informal laws emanate from different sources. For instance, before colonization, many communities were governed by customary rules established over a long period of time. These customary rules governed the conduct of community members in their interpersonal relations, economic activities, political organization, and interactions with the environment.[39] In environmental governance, many societies' customary rules required sustainable utilization of natural resources and shunning pollution as it interferes with cultural lifestyles and institutions.[40] Other sources of informal norms include ethics, religions, value systems.[41]

Informal norms exhibit important characteristics that explain their pervasive influence, a feature that this article seeks to leverage. Informal norms

---

35 Tamanaha Z, 'The history and elements of the rule of law',232-247.

36 Friedman M, Hayden M, *American law: An introduction*, Oxford University Press, 2017.

37 Drechsler D, 'In Focus: The OECD Gender, Institutions and Development Data Base' in Johannes, J., Denis, D. and Sebastian, B. (eds) Development Centre Studies Informal Institutions How Social Norms Help or Hinder Development: How Social Norms Help or Hinder Development, OECD, 2007.

38 Fiori S, Formal and informal norms: Their relationships in society and in the economic sphere. 76(2) *Review of Social economy*, 2018, 198-226.

39 Allott N, Customary Law in East Africa. 4(3), *Africa Spectrum*, 1969, 12-22.

40 Okyere M, Beatrice,Morgan S, Nwosimiri O, "Cultural, ethical, and religious perspectives on environment preservation." 85, *Best Practice & Research Clinical Obstetrics & Gynaecology*, 2022, 94-104.

41 Brennan A, Norva L, "Environmental Ethics", The Stanford Encyclopedia of Philosophy, 2022.

unlike formal rules, "percolate from below, emerging out of social practice and becoming normative overtime".[42] Individuals are born and exist in social contexts. In these contexts, they develop and adopt cultures, customs, language, thoughts, religion and traditions from social relations.[43] They become members of a society, religion, a country and a community who relate to the structures of their society through diverse social relations. "How an individual appropriates, internalizes, and lives his relations, which ones he chooses, help constitute his human individuality".[44] It is these characteristics of informal norms that are most powerful as identity is largely shaped by social structures. Thus, the environment, for example, including oceans, air and forests are not mere modern-day factors of production, people have deeply embedded social relations with them, notwithstanding what modern development agenda provides or advocates for.

Related to the informal norms' embedment of social norms into the human person is their legitimacy. Generally, legitimacy is entrenched in 'collective audience's shared belief, independent of observers, that "the actions of an entity are desirable, proper, or appropriate within socially constructed systems of norms, values, beliefs and definitions'.[45] Informal norms are "solidarity forces" agreed generally by members of society as desirable in shaping and reinforcing their social relations. And since there is "constant interaction with social purposes and goals",[46] informal rules, for example norms on environmental protection, are legitimate and valid. This eliminates legitimacy concerns often raised in relation to formal laws.

As informal norms arise from social relations, they are ubiquitous.[47] In every social interaction, there exists generally accepted norms regulating human behavior. This is unlike formal laws that regulate specific social interactions. Often, formal laws regulate interactions long after informal laws have taken shape and often borrows from them.[48] For instance, while formal law may not prohibit cutting down of certain trees, some communities, out of religious and cultural convictions do not allow the cutting down of trees which they

42 Schauer F, "The force of law" Harvard University Press, 2015, 140.

43 De George, Richard T. 'Social Reality and Social Relations' 37(1) The *Review of Metaphysics,* 1983, 3–20.

44 De George, Richard T. 'Social Reality and Social Relations', 3–20.

45 Bernstein S. 'Legitimacy in global environmental governance' J. Int'l L & Int'l Rel. 1, 2004, 139.

46 Bernstein S. 'Legitimacy in global environmental governance',139.

47 Bicchieri C, The Rules We Live By. In The Grammar of Society: The Nature and Dynamics of Social Norms Cambridge: *Cambridge University Press*, 2005, 1-54.

48 Kameri-Mbote, P, Contending Norms in a Plural Legal System: The Limits of Formal Law.

consider significant for their religious ceremonies.[49] In addition, long before laws regulating hunting emerged, in some communities, one could not hunt in what were considered sacred places.[50] Informal laws on fishing, hunting, coconut tree harvesting and other sectors often contain taboos proscribing certain actions and more detailed and complex rules than formal ones.[51]

Enforcement of informal norms presents yet another peculiar feature. Unlike formal laws, informal laws do not attract formal sanctions.[52] Instead, informal norms present sanctions anchored on people's acceptability in socialization and social relationships. These include "censure, disapproval, shaming, loss of face or reputation".[53] While these sanctions may not appear punitive as formal sanctions, social acceptability and socialization are important in social relations. While one may not go to jail, being shunned by a community, of which you are a member may be a more severe punishment. The fear of the Armageddon may be greater than a fine and a curse greater than the death penalty. One of the major reasons people obey the law is "because it is consistent with and fits with their own conscience and their personal internal values."[54] As informal norms emanate from the accepted and agreed social conscience, beliefs and values in which individuals are socialized, informal norms receive wide obedience and enforcement scores.

(iii) Formal vs informal laws in plural legal systems

Despite the jurisprudential variations on the meaning and nature of law, there is a general consensus that the essence of laws in societies is to constrain and guide human actions by structuring incentives, creating predictability and estimation of human interactions.[55] As noted above, the origin and source of

---

[49] Karangi, Matthew M. "Revisiting the roots of Gĩkũyũ culture through the sacred Mũgumo tree" 20(1) Journal of African Cultural Studies, 2008, 117-132. Amots, "On the typology and the worship status of sacred trees with a special reference to the Middle East." 2(1) Journal of Ethnobiology and Ethnomedicine, 2006, 1-14.

[50] Fraser B, Conservation by another Name: Traditions, Taboos and Hunting available —<https://forestsnews.cifor.org/40317/conservation-by-another-name-traditions-taboos-and-hunting?fnl=en> accessed November 29, 2023.

[51] Colding J, Folke C, "Social taboos: 'invisible' systems of local resource management and biological conservation." 11(2) Ecological applications 2001, 584-600.

[52] Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'

[53] Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'

[54] Finckenauer J, "Why people obey or do not obey the law" Newsletter on the Results of Scholarly Work in Sociology, Criminology, 4(2), *Philosophy and Political Science,* 2023, 36-45. Friedman M, "Impact: How Law Affects Behavior", *Harvard University Press*, 2016.

[55] Peng, Yusheng. "When formal laws and informal norms collide: Lineage networks versus birth control policy in China." 116(3) *American Journal of Sociology*, 2010, 770-805.

formal laws may be contested but an authority, whether social, deity or political is involved in their making. On the other hand, while some informal norms may eventually become formal laws, these two sets of laws evolve and emerge independently.[56] Further, the two sets of laws may regulate the same social relationships, at times conflicting or complementing one another. They may also govern distinct issues, with one set occasionally acting as a gap filler where the other is absent. They may also overlap in their regulatory scope.[57]

The demonstrable variance in the nature of formal and informal laws above present a fundamental question as to the value and place of each set of laws in the society. The contemporary understanding of formal laws, even among jurisprudence scholars, centers on their effort to distinguish between what constitutes law and what does not. It is assumed that law has specific features such that those rules that do not possess those characteristics are not considered proper law. Taking the example of natural law, any rule that defies human reason is not law.[58] Unjust laws are not laws at all.[59] For positivism, rules not sanctioned by a human authority such as a legislature are not considered law and for pure legal theory, they would be regarded as impurities.[60]

Despite the self-purifying nature of formal laws, from a functionality view, informal rules, whether recognized by the formal legal systems or not, control and influence human behavior.[61] Similarly, informal norms may be ensconced in "semi-autonomous social fields" which resist infiltration by "alien" norms, be they formal norms or informal norms from a different source.[62] The determination of which law applies to a given set of facts can vary depending on the forum where the facts are presented and analyzed. In a court of law, the applicable rules are typically the promulgated formal laws. Conversely, in informal settings such as councils of elders, churches, or gatherings led by spiritual or community leaders, informal laws often apply. However, there are instances where both formal and informal laws may be applicable, particularly

---

56 Kameri-Mbote, P, Contending Norms in a Plural Legal System: The Limits of Formal Law, *University of Nairobi School of Law*, 2021.

57 Kameri-Mbote, P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'

58 Bradley R, The Relation Between Natural Law and Human Law in Thomas Aquinas. 21 *Cath. Law*, 1975. 42.

59 Soper P, In Defense of Classical Natural Law in Legal Theory: Why Unjust Law is No Law at All, 20(1*) Canadian Journal of Law & Jurisprudence*, 2007, 201-223.

60 Cohen, J, The Political Element in Legal Theory: A Look at Kelsen's Pure Theory, 88(1) *The Yale Law Journal*, 1978, 1-38.

61 Kameri-Mbote P, 'Contending Norms in a Plural Legal System: The Limits of Formal Law'.

62 Moore S, 'Law and Social Change: The Semi-Autonomous Social Field as an Appropriate Subject of Study', 7 Law & Society Review, 1963, 719-720.

when formal laws explicitly recognize informal laws as gap fillers, provided they meet an established criteria.[63]

Another important variance between formal and informal laws is the nature of coercive character. As noted above, formal law is supported by sanctions such as fines and imprisonment carried out by the instrumentalities of the state. In contrast, informal laws have their coercive power derived from social acceptability and are socially sanctioned. However, both formal laws and informal laws converge in attaching a coercive character to the laws despite their different enforcement pathways. Again, both these systems fulfil their essence in society, being constraining and guiding human actions by structuring incentives.

In relation to the rule of law, formal legal systems create homogenous laws for all persons in each jurisdiction. These laws proclaim and are rooted in equality of all persons before the law. Similarly, all community members of a given social group are expected to adhere to the rules of that society. A problem arises when formal and informal laws regulate the same issue and conflict in their content leaving individuals exposed to liability by either of the systems. Therefore, adhering to the formal laws may prevent one from incurring a civil or a penal liability but expose him or her to perpetual fear of the "sword of Damocles".[64]

The incompartibility and resistance to infiltration of a legal systems by the other system creates plural legal systems whereby several legal systems coexist in the same field.[65] Usually in such societies, formal laws will have unsuccessfully attempted to erase informal norms, a classical case being the impact of colonization on traditional legal systems. In Africa, for instance, customary laws and religious laws have defied formal laws' attempt to erase them. However, formal laws have partially succeeded in subjugating customary laws to a lower place in the hierarchy of laws.[66] Formal laws assert their superiority over informal norms[67] and prescribe this hierarchy with recognized informal legal systems being only applicable upon meeting certain conditions such as not offending "repugnancy clauses".[68] Notwithstanding these conflicts, formal and informal laws may complement each other.

---

63 Kameri-Mbote P,.'Contending Norms in a Plural Legal System: The Limits of Formal Law'

64 Kameri-Mbote P,.'Contending Norms in a Plural Legal System: The Limits of Formal Law' .

65 Kameri-Mbote P,.'Contending Norms in a Plural Legal System: The Limits of Formal Law' .

66 Kameri-Mbote, P, Odote, C., Musembi, C, Kamande W, Ours by right, *Strathmore University Press*, 2013.

67 Kameri-Mbote, P, Odote, C., Musembi, C, Kamande W, 'Ours by right'.

68 Taiwo, E.A., 2009. Repugnancy clause and its impact on customary law: Comparing the South African and Nigerian positions-some lessons for Nigeria. *Journal for Juridical Science*, *34*(1), pp.89-115.

III. Examples of informal laws in environmental governance

Informal norms have traditionally played an underappreciated role in environmental governance. This underappreciation, particularly in formulating and enforcing formal laws, has sometimes led to conflicts. For instance, in Kenya and many African countries, public and private land tenure systems were introduced through colonization. Before that, land was owned communally where every member had a right to use the property.[69] In wildlife management, communities with the communal land system had devised ways of conserving the wildlife and providing space for it alongside their livestock.[70] However, designing wildlife conservation efforts around private and public land tenure and disregarding the communal land tenure introduced conflicts between what communities had always done and the newly introduced tenure systems. The result is that wildlife conservation is hampered as private landowners "intent on maximizing returns from their land are engaged in crop production and urban development, which are incompatible with wildlife conservation".[71] People have social and cultural relations with the environment. Thus, when formal law or any other activity destabilizes these social relations or people's way of life, "social networks function to increase the formal enforcement costs by "bending the iron bars" of formal rules."[72]

While the contestation is undesirable, it points to a probable complimentary role between the two. At the heart of the contestation is the desire to regulate human behavior as it relates to the environment. Acknowledging that formal laws don't have overall control of humans and that informal laws play an important role would be the starting point to closing ranks. Thus, if the aim is to use formal law to exclusively regulate environmental management, one must be cognizant of existing informal norms and include their attributes where feasible. Alternatively, it may regulate by providing principles while at the same time allowing informal institutions to co-exist.

Religion is a powerful social institution backed by strong principles and norms among adherents. Iyad argues that people derive values from religion that

---

69 Kameri-Mbote, P., Contending Norms in a Plural Legal System: The Limits of Formal Law. University of Nairobi, School of Law. 2021, 6.

70 Sifuna N, "The future of traditional customary uses of wildlife in modern Africa: a case study of Kenya and Botswana" 2(1) *Advances in Anthropology*, 2012, 31.

71 Kameri-Mbote P,. 'Contending Norms in a Plural Legal System: The Limits of Formal Law' 6.

72 Peng, Y, 'When formal laws and informal norms collide: Lineage networks versus birth control policy in China', 116(3) *American Journal of Sociology*, 2010, 770-805.

influence their behaviors.[73] Religious activities and rituals are interlinked with the natural ecosystems. Religions hold the earth as sacred and call for responsible and sustainable utilization.[74] They also have the convening and convincing power.[75] They have, for instance, been an important organizational platform for political, social and economic mobilization. In shaping behavior, religions teach human responsibility, recognizes the interlinkage between human life and nature, stewardship, neighborliness, nature comprehension among others. Religion also shapes the conceptualization of the relationship between human beings and the environment. For instance, Pope Francis in the letter Laudato Si: On Care for Our Common Home in 2015 conceptualize the human-earth relationship like stating "our common home is like a sister with whom we share our life and a beautiful mother who opens her arms to embrace us. "Praise be to you, my Lord, through our Sister, Mother Earth, who sustains and governs us, and who produces various fruit with colored flowers and herbs".[76] In addition, Al-Mizan - A Covenant for the Earth, a restatement of the principles from Islamic faith that explain the Islam's duty "religious and civilizational duty to confront environmental challenges". Convened in collaboration with UNEP, the initiative demonstrate how Islam can be a driving force for sustainable development and environmental care. Al-Mizan also highlights the importance of culture and religion in driving behavioral change, along with scientific, technical and political solutions.[77] These are very critical attributes to environmental conversation. Considering that approximately eighty four percent of world population subscribe to some form of a religion, it presents a great opportunity to deploy religious and faith norms to recalibrate people's behavior on environment generally and plastics specifically.

Religion has traditionally played an important role in environmental conservation. Chandra in discussing the role of religion and biodiversity conservation argues that religion provides "ethical and social models for living respectfully with nature", "provides protection for biodiversity" and "religion ties the non-human residents of the cosmos to the divine or to the overall meaning

---

[73] Abumoghli I, Reimagining the Human Environment Relationship, International Development Research Centre, 2022, available at —<http://collections.unu.edu/eserv/UNU:8838/UNUUNEP_Abumoghli_RHER.pdf>accessed November 29, 2023.

[74] Many religious books including the Bible and Quran contain provisions that hold earth as sacred and imposing a responsibility on humanity to care for it.

[75] Abumoghli I, Reimagining the Human Environment Relationship, International Development Research Centre, 2022, available at http://collections.unu.edu/eserv/UNU:8838/UNUUNEP_Abumoghli_RHER.pdf accessed November 29, 2023.

[76] Si L, 'On Care for Our Common Home' *London: Catholic Truth Society*, 2015.

[77] 'Al Mizan A Covenant for the Earth' —<https://www.almizan.earth/> accessed November 29, 2023.

of human existence, which gives the biota a value that science alone cannot provide".[78] In relation to investments, faith based organizations have provided ethical and faith compliant investment forums.[79] Religion has also shaped social acceptability of bioethics, genetically modified organisms and other innovations.[80] Taking cognizance of the religious norms which though not recognized by law but nonetheless govern human conduct more intricately would unleash the much needed impetus into tackling environmental problems including plastic pollution.

Environmental problems raise ethical and moral questions. Beyond science-policy solution-based interventions, environmental crises require ethics to shape human behavior.[81] Environmental ethic scholars have emphasized the ethical and moral significance of the environment to human beings. For instance, there is need to "ensure we [people] spend time dwelling in situations of intrinsic value"[82] and "re-creation" of the human soul by meditating in the wilderness".[83] These ethical and moral connections with the environment harbor impactful behavior shaping power.

Formulation of what is right and wrong, like other informal norms, is a result of dense social relations. Morality and ethical considerations, at very personal levels, delineate right and wrong. "Morality aims at the interior and not at the simple exterior conformity of ideals; it applies to every person and to all humanity."[84] This highlights the ability of ethics and morals to influence human behavior at individual and community levels given their formulation through socialization processes.

---

78 Negi C, 'Religion and biodiversity conservation: not a mere analogy' 1:2 *The International Journal of Biodiversity Science and Management,* 2005, 85-96

79 Christopher I, How faith Can Inspire Environmental Action available at —<https://theconversation.com/how-faith-can-inspire-environmental-action-195594> accessed on November 29, 2023.

80 Omobowale, B, Singer A, Daar, S, 'The three main monotheistic religions and gm food technology: an overview of perspectives' 9, *BMC international health and human rights*, *2009,* 1-8.

81 Makokha K, Muthiani, 'The Role of Ethics in Environmental Protection', in Fuchaka Waswa, Samuel Otor, Daniel Mugendi (eds) Environment and Sustainable Development: A Guide for Tertiary Education in Kenya, *School of Enviromental Studies and Human Sciences, Kenyatta University,* 2006.

82 Brennan A, Norva L, "Environmental Ethics", The Stanford Encyclopedia of Philosophy (2022) at <https://plato.stanford.edu/archives/sum2022/entries/ethics-environmental/> accessed November 9, 2023.

83 Laal M, A brief history of enviroethics and its challenges. *Journal of Medical Ethics and History of Medicine*, 2009, *2*.

84 Makokha K, Muthiani, 'The Role of Ethics in Environmental Protection', in Fuchaka Waswa, Samuel Otor, Daniel Mugendi (eds) 'Environment and Sustainable Development: A Guide for Tertiary Education in Kenya.'

The environment is not just a factor of production.[85] People have religious, cultural, ethical and value relations with it. The social institutions around these relations shape norms on viewing, utilizing and conserving the environment. Some of these norms may end up [either as people understand them or with variations] being formal law while others remain within the realm of social norms. However, whether formalized or not, they exert an equal influence in shaping human behavior in interactions with the environment.

IV. Nature of plastic pollution

Plastics pervade modern life. They are integrated into and permeate every aspect of life.[86] UNEP notes that their low cost makes them convenient to use and ubiquitous, rendering them one of the greatest environmental challenges.[87]

This paper does not discount the fact that major industries, especially those producing and using fossil fuels, contribute significantly to the plastic phenomenon and consequently to pollution related thereto. It acknowledges that both producers and consumers have a responsibility in reversing plastic pollution and acknowledges that concepts such as circularity[88] and extended producer responsibility[89] are important in addressing the plastic menace. However, a significant part of plastic pollution is also partly dependent on individual behavior. Thus, there is potential in appealing to individuals to alter behavior in the use or disposal of plastics.

Plastics are used in many sectors including in healthcare, energy conservation, material preservation, construction, fashion, transportation to agriculture.[90] For instance, almost every packaged product in the world has plastic

---

85 Appleyard D, "The environment as a social symbol: Within a theory of environmental action and perception." 45(2) *Journal of the American Planning Association,* 1979, 143-153.

86 Carpenter E, Wolverton S, Plastic litter in streams: The behavioral archaeology of a pervasive environmental problem, 84, *Applied geography*, 2017, 93-101.

87 UNEP, 'Single-Use Plastics: A Roadmap for Sustainability' <https://www.unep.org/resources/report/single-use-plastics-roadmap-sustainability> accessed November 29, 2023.

88 Forrest A, Giacovazzi L, Dunlop S, Reisser J, Tickler D, Jamieson A, Meeuwig, J, 'Eliminating plastic pollution: how a voluntary contribution from industry will drive the circular plastics economy' *Frontiers in Marine Science*, 2019, 627.

89 Tumu, K, Vorst, K, Curtzwiler, G, Global plastic waste recycling and extended producer responsibility laws. 348, *Journal of Environmental Management*, 2023, 119242.

90 Andrady L, Neal A, Applications and societal benefits of plastics, 364(1526) *Philosophical Transactions of the Royal Society B: Biological Sciences*, 2009, 1977-1984.

components, especially in business to consumer applications.[91] They are found in the environment, in the following order based on their magnitude- cigarette butts, drinking bottles, bottle caps, wrappers, grocery bags, plastic lids, straws and stirrers.[92] Yet, UN General Assembly President notes that there is a "throwaway culture" of these plastic wastes,[93] contributing to approximately 47% of the plastic waste. Much of these plastics are thrown away a few minutes after use.[94] Research demonstrates that plastic pollution requires "fundamental changes in infrastructures and lifestyles, as well as cultural and economic transformation processes."[95] Informal law provides an important conscious driven behavioral change in communities.

V. Role of informal norms in ending plastic pollution

Undoubtedly, plastic pollution impacts our lives either positively or negatively. While formal laws may regulate plastic production, use and disposal, this part in discussing the role of informal norms in plastic pollution argues that in fact, informal laws may well be more powerful catalysts of ending the crisis than formal laws. This conclusion is supported by combining the features of informal norms and the nature of plastic pollution discussed above.

Plastic pollution negatively impacts the environmental, social and economic lives of people.[96] It is destabilizing cultural institutions, kinship ties, people's identity and is causing rapid changes to people's way of life and traditions.[97] The role of culture in societies cannot be gainsaid. It creates cohesive institutions and

---

91 UNEP, 'Single-Use Plastics: A Roadmap for Sustainability' <https://www.unep.org/resources/report/single-use-plastics-roadmap-sustainability> accessed November 29, 2023.

92 UNEP, 'Single-Use Plastics: A Roadmap for Sustainability' <https://www.unep.org/resources/report/single-use-plastics-roadmap-sustainability> accessed November 29, 2023.

93 Kőrösi C, PGA remarks to World Environment Day commemoration, President of the 77th session of the General Assembly, World Environment Day Commemoration, 5 June 2023 —<https://www.un.org/pga/77/2023/06/05/pga-remarks-to-world-environment-day-commemoration/> accessed November 23, 2023.

94 UNEP, 'Single-Use Plastics: A Roadmap for Sustainability' —<https://www.unep.org/resources/report/single-use-plastics-roadmap-sustainability> accessed November 29, 2023.

95 Wiefek, J, Steinhorst J, Beyerl K, Personal and structural factors that influence individual plastic packaging consumption—Results from focus group discussions with German consumers. *Cleaner and responsible consumption*, 2021, 100022.

96 UNEA Resolution 5/14, End Plastic Pollution: Towards an International Legally Binding Instrument (2022) available at —<https://digitallibrary.un.org/record/3999257?ln=en> accessed October 20, 2023.

97 Yose P, Thondhlana G, Fraser G, 194, Conceptualizing the socio-cultural impacts of marine plastic pollution on human well-being–a perspective. *Marine Pollution Bulletin*, 2023, 115285.

institutionalizes acceptable behavior. As cultural systems change, communities are engaged in constant adaptation.[98] In addition to legal adaptation rules, societies had developed their tools either before arrival of formal rules or in complimentarily with formal rules. Recognizing these cultural attributes of environmental conservation is important to addressing environmental challenges.

Solving environmental problems requires focused and sustained efforts. Targeted responses utilize localized cultural dynamics to achieve a desired objective. People's culture often demonstrates their relationships with the environment. Thus, targeting environmental solutions through people's culture not only incorporates them in conservation constituencies, but it also reinforces their relationships with nature. Interventions that "ignores social norms [culture] and imposes a new of the world external to the target group be[is] particularly ineffective."[99]

The power of ethics and morality in influencing human behavior lies in their convincing power and narrative formulation. In relation to land, Leopold argues that "[A] thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise".[100] This turns unsustainable land use from a mere legal issue, to one of deep-rooted ethical considerations. Phrased this way, plastic pollution is not only a legal wrong, but also unethical and morally reprehensible. Admittedly, there is no consensus on what is right or wrong. However, a large part of humanity agrees on basic rights and wrongs. For instance, the authors of this paper are not aware of any moral justification for littering.

Narratives underlying a rule that constrains human behavior influence its acceptability and obedience.[101] Thus, a successful law always has a convincing narrative as human beings insist on knowing why it exists. For instance, while climate change law formulates climate change as a scientific concept requiring scientific solutions, conceptualization of climate change as a social phenomenon, as a partly cultural phenomenon or as a disruptive phenomenon ecologically, socially and politically collapsing traditional institutions, as a complex, multifaceted phenomenon makes it "at once a reality, an agenda, a problem, a context, a

98 Bremer S, Glavovic B, Simon Meisch, Paul Schneider, and Arjan Wardekker. 'Beyond rules: How institutional cultures and climate governance interact' 12(6) *WIRES Climate Change*, 2021, 1-20.

99 Sen A, 'How does culture matter?' In Rao, V and Walton, M. (Eds) Culture and Public Action, Stanford University Press, Stanford, 2004.

100 Leopold, A., 1949. A Sand County Almanac, Oxford: Oxford University Press, 1949.

101 Bremer S, Glavovic B, Meisch S, Schneider P, Wardekker A, 'Beyond rules: How institutional cultures and climate governance interact' 12(6) *WIRES Climate Change*, 2021, 1-20.

narrative and a discourse […] that allows for different ways of knowing to play a legitimate part in framing our personal, social and institutional responses".[102] This formulation has been shown to change peoples' attitudes towards climate change.[103] Thus, using informal norms to reframe plastic pollution through the lenses of rhetoric, emotions, ethics, religion intersecting beliefs, values and cultures allows people to view plastic pollution through normativity of socially delineated and held values about desirability of handling plastic waste. While the law may ban dumping of plastics in forests because wild animals are likely to ingest them and die, it may be less effective compared to when religion prohibits dumping plastics in forest because those places are holy, or animals are sacred, or dumping is immoral.

At the center of plastic pollution is irresponsible human actions. This places human beings, at an individual level or a relatively small group, an important unit in addressing plastic pollution. The next common items are used at an individual level amplifying the role of an individual in stemming plastic pollution. Further, re-using, simple recycling and proper disposal requires intervention from an individual and perhaps a relatively small group. While formal law may be a useful tool in regulating use, disposal, re-use and recycling, it inherently has three limitations. It can only regulate so much, faces cultural resistance[104] and its effectiveness is only dependent on robustness of enforcement measures. For instance, while several African countries have banned use of plastics in varying products, plastics continue to be pervasive, and enforcement of the proscriptions remains a challenge.[105]

The most prevalent feature of formal law is its coercive power enforced through state instrumentalities. The threat of punishment and consequences from legal violations contribute to its obedience. However, coercion is only effective with robust enforcement throughout the detection, investigation, prosecution and conviction continuum. A slip in any of these makes coercion a

[102] Geoghegan H, Leyson C, 'On climate change and cultural geography: farming on the Lizard Peninsula, 113, Cornwall,' UK, *Climatic Change*, 2012, 55-66.

[103] Geoghegan H, Leyson C, 'On climate change and cultural geography: farming on the Lizard Peninsula,' 55-66.

[104] Nicholls J, 'Ban on Plastics in Africa – a Story of Smuggling and Success' available at —<https://www.safaribookings.com/blog/ban-on-plastics-africa-story-smuggling-success#:~:text=Plastic%20bans%20to%20date%20have,three%20are%20changing%2C%20and%20fast> accessed November 14, 2023.

[105] Nicholls J, 'Ban on Plastics in Africa – a Story of Smuggling and Success' available at —<https://www.safaribookings.com/blog/ban-on-plastics-africa-story-smuggling-success#:~:text=Plastic%20bans%20to%20date%20have,three%20are%20changing%2C%20and%20fast> accessed November 14, 2023.

mere suggestion depriving the law of its most important character. Enforcement relationship between formal law and informal norms is dependent on congruency. "When informal norms are congruent with formal rules, social networks function to reduce the enforcement costs of formal rules. Normative control benefits of social networks obtain by subsuming the costs of formal enforcement"[106]. Further, when "informal norms conflict with formal rules, then social networks function to increase the formal enforcement costs by "bending the iron bars" of formal rules".[107] Conversely, "the normative capacity of social networks is vitiated by formal institutions."[108] Thus, informal norms present an important enforcement partner in stemming plastic pollution.

Informal norms are important pre-requisites of effective formal laws. Often, formal rules are heavily reliant on informal institutions. A study conducted by Cooter examined how formal laws are dependent on informal institutions and concluded that expressive language of a law determines and increases its effectiveness in the society if the expression resonates with social norms.[109] Additionally, internalization of a law depends largely on the level of compatibility with accepted informal norms. Finally, he observed that formal deterrence aligned with informal sanctions complement each other attaining a greater deterrence. Thus, in laws seeking to root out plastic pollution, informal norms provide an institutional framework on which formal rules can be used.

VI. Conclusion

Formal law does not control all aspects of human life. In enforcement of the any treaty and the derivative national laws, parallel informal norms continues to influence people's behavior shaped by their religion, culture, values, ethics among others. The plastics treaty will be no different. It will have to interact with informal laws, which are pervasive and govern almost every aspect of human life. The ability to prescribe acceptable behavior even in their most intimate settings where law is absent, and the self-enforcing advantage presents a great opportunity for stemming plastic pollution.

---

106 Peng, Y., 2010. 'When formal laws and informal norms collide: Lineage networks versus birth control policy in China' 116(3) *American Journal of Sociology*, 770-805.

107 Peng, Y., 2010. 'When formal laws and informal norms collide: Lineage networks versus birth control policy in China', 770-805.

108 Peng, Y., 2010. 'When formal laws and informal norms collide: Lineage networks versus birth control policy in China', 770-805.

109 Samuyimen E, Eghosa O. Ekhator 'Improving Environmental Protection in Nigeria: A Reassessment of the Role of Informal Institutions' 13(1), *The Journal of Sustainable Development, Law and Policy,* 2022, 162-199.

Informal Institutions, Informal Mechanisms, and their Utility in the Promotion of Environmental Protection in Africa

Elizabeth Gachenga[*]
Karwitha Mueni Mwendwa[**]

Abstract

In the twenty-first century, there have been numerous attempts by the state in different African countries to preserve the environment, including the enactment of environmental laws, policies and regulations that are in force to date. These laws, policies and regulations have been instrumental in preserving the natural environment for current and future generations, in the prevention of further environmental degradation and in maintaining a sustainable relationship between mankind and the natural environment. However, beyond the reach of the state and its interventions, lies the existence of informal institutions such as indigenous communities and religion which play a powerful role in maintaining the natural environment.

This article will explore these informal institutions and extract important aspects of their operation that are useful in conservation of the environment. The methodology applied is desktop research relying on journal articles, books, working papers and reports. The article is structured to assess informal institutions and their importance in environmental conservation, aspects of informal institutions such as self-coordination, collective action, collective identity and graduated sanctions, the role of religion as well as the accommodation of religion and informal institutions in international law. The paper uses the Plastics Treaty 2024 to demonstrate how appreciation and integration of religious and customary norms would eventually contribute to better outcomes in the governance of plastic waste.

Key words: collective, common-pool resources, indigenous, institution, natural.

* PhD, Deputy Vice Chancellor- Academic and Student Affairs, Strathmore University (Nairobi, Kenya). egachenga@strathmore.edu

** LL.B, Graduate Assistant, Office of the Deputy Vice Chancellor- Academic and Student Affairs, Strathmore University (Nairobi, Kenya)

I. Introduction

Formal laws which span across the national, regional, and international spheres are helpful in guiding human conduct and in establishing a stable and predictable system. In the fight against plastic pollution, the formal laws relevant in environmental conservation in Kenya are sourced from domestic sources such as the Constitution of Kenya 2010, the Environmental Management and Coordination Act 1999 and the Sustainable Waste Management Act of 2022. As is the case in Kenya, existing formal frameworks are instrumental as they provide individuals with ordered liberty. Ordered liberty, in this case, can be understood as the ability of individuals to autonomously pursue their own goals while adhering to the established rules and regulations.[1]

Although the presence of a formal framework is essential in shaping an atmosphere of harmony, Bruce Frohnen points out that too much law may eliminate autonomy that groups and individuals enjoy in the shaping of their realities. He points out that communities that are truly free enjoy the regulation of their conduct by formal law, only where there is a broad consensus to do so and that such formal law is established with pre-existing customs and norms in mind.[2] Otherwise, there are already pre-existing ethics, beliefs and values within these communities that are effective in preserving the environment.

Considering the above, this paper will assess the interplay between formal and informal institutions in environmental conservation and preservation. It will examine some of the approaches taken by indigenous communities in the preservation of natural resources. Additionally, it will examine the potential role that dominant religions can play in environmental conservation. These arguments are used to make the case for the integration of indigenous communities and religion in treaty negotiations ahead of the enactment and signing of the Plastics Treaty 2024.

The role of informal normative frameworks, informal institutions and the knowledge management systems of indigenous people has been recognized at the international level as demonstrated by the United Nations Declaration on the Rights of Indigenous Peoples. The treaty underlines the importance of this reality, highlighting the integration of indigenous perspectives on environmental governance as an essential ingredient for addressing national and global environmental challenges. The success of international environmental

1 Frohnen B, 'The Limits of Law: How Formal Rules Undermine Human Relations', Ohio Northern University College of Law, 2014, 1.

2 Frohnen B, 'The Limits of Law: How Formal Rules Undermine Human Relations', 2014, 4.

law treaties thus depends on the extent to which indigenous communities with their normative and institutional frameworks are included in the negotiation and decision-making process. This ought to be a central consideration in the lead up to the plastics treaty if the treaty is to be universally effective in curbing plastic pollution. Interaction of formal and informal frameworks and the complementarity of community-based knowledge and scientific knowledge would go a long way in ensuring positive outcomes.

II. Informal institutions and their importance in environmental conservation

The concept of informal institutions has been discussed by various authors across academic disciplines and contextualised within specific communities. Enabulele and Ekhator in their work on the role of informal institutions in environmental protection, define informal institutions as unwritten rules that are shared within a group which are created, communicated and enforced outside the bounds of state-established forums.[3] Within the African context, the imposition of colonial laws led to a legal pluralism, characterised by clashes between formal (colonial) and informal (customary law) systems. In most cases, formal legal systems took precedence over prior existing autochthonous customary laws. This system was interventionist in nature and distorted the pre-existing way of life of the communities. This interventionism by the colonial settlers interfered not only with the way native Africans interacted with their natural environment but also the values that they applied to environmental conservation.

As a result, the values and behaviours that were associated with conservation of the environment were detached from the people which not only distorted communal ownership and responsibility but also severed the relationship between native Africans and their environment.[4] An example of interventionism that severed the relationship between native Africans and their environment is within the colonial administrative system in which large tracts of land were set

[3] Enabulele O and Ekhator E, 'Improving Environmental Protection in Nigeria: A Reassessment of the Role of Informal Institutions' *The Journal of Sustainable Development, Law and Policy*, 2022, -<https://dx.doi.org/10.4314/jsdlp.v13i1.7>on 30 October 2023.

[4] Kameri-Mbote P, *Contending Norms in a Plural Legal System, the limits of formal law*, 1st ed, University of Nairobi School of Law, Nairobi, 2021, 29. An illustration of interventionism that the author gives is the detachment of natives from their environment through the arresting of women who were found collecting firewood, fruits and mushrooms by the enforcers of the colonial laws that sought to separate the natives from natural resources. All of this was done under the guise of environmental conservation.

aside under the guise of environmental conservation.[5] This is a process that snatched local communities of their ability to access the natural resources they relied on for their activities, and the ability to use their homegrown practices to sustainably manage the resources.

Literature in this area has proposed various approaches to the analysis of the operation of informal institutions. For instance, Williamson underlines the importance of conducting a comprehensive analysis of informal institutions as a prerequisite for grasping their proper functioning.[6] In his view, the first level is embedded institutions consisting of norms, religion, mores, traditions and customs. Embedded institutions seldom change over a long period of time and are less susceptible to human manipulation. The second level is the institutional environment, which is more flexible than the embedded institution and sets the basis for societal activities. The third level relates to institutional arrangements which encompass the systems needed for guiding economic relationships. The final level is the institution of resource allocation and employment, which consists of details addressing the operations of individuals on a day-to-day basis.

Williamson points to the differences between the four levels, noting the controlling power wielded by higher level institutions over those at the lower levels. Consequently, embedded institutions influence institutional environments, which in turn influence institutional arrangements; with the latter influencing institutions tasked with resource allocation and resource employment.[7] An assessment of the strength of existing institutions in the promotion of environmental protection would thus require an examination of embedded institutions and the existing norms, beliefs and customs within these institutions.

Within existing informal institutions such as indigenous communities, environmental management is achieved through different customs, norms and community-based approaches which include indigenous knowledge management.[8] Through indigenous knowledge management, these communities gain their identity, practices and knowledge from the environment around them,

---

5 Kameri-Mbote P, 'Land Tenure Land Use and Sustainability in Kenya: Towards Innovative Use of Property Rights in Wildlife Management' International Environmental Law Research Centre, 2005 - 4, 2007,10, -< https://www.ielrc.org/content/w0504.pdf>- on 10 February 2024.

6 Williamson O, 'The New Institutional Economics: Taking stock, looking ahead' 38 (3*) Journal of Economic Literature,* [2000] 595.

7 Enabulele O and Ekhator E, 'Improving Environmental Protection in Nigeria: A Reassessment of the Role of Informal Institutions', 2022, 167.

8 Burgos-Ayala A, Jiménez-Aceituno A, Torres-Torres A, Rozas-Vásquez D and Lam D, 'Indigenous and Local knowledge in environmental management for human-nature connectedness: A leverage points perspective', 16(1), *Ecosystems and People,* 2020, 290.

and become instinctively aware of the importance of maintaining it.[9] This knowledge, together with information on how to respond to imminent disasters that will impact the environment, is transferred from one generation to another, thereby keeping environmental management traditions and practices alive.[10]

III. The inter-institutional gap between formal and informal institutions

The concept of the inter-institutional gap is one that addresses governance of actions both within formal and informal institutions, and between the two types of institutions. This framework is different from Williamson's analysis of informal institutions in the previous section as it analyses both formal and informal institutions while addressing the gap between them. It highlights three key layers of rules that are in effect in the formal and informal systems with regard to natural resource management governance. These three layers are operational choice rules, collective choice rules and constitutional choice rules.[11]

Operational choice rules guide the day-to-day actions of an individual, while collective choice rules design the institutions tasked with the enforcement of operational choice rules. Within a hierarchical order, operational choice rules fall under collective choice rules, and collective choice rules in turn fall under constitutional choice rules. The latter category is the highest in the hierarchy and guides on collective-choice decision making processes.[12] These three layers of rules exist within both formal and informal institutions.

---

9 United Nations Environment Programme 'Application and Use of Indigenous Knowledge in Natural Disaster Management' in United Nations Environment Programme (eds) '*Indigenous Knowledge in Disaster Management in Africa'* 1, United Nations Environment Programme, Nairobi, 2008, 56.

10 Steiner A and Oviedo G, 'Indigenous Knowledge and Natural Resource Management' in Woykec R, Shroff-Mehta P, and Mohan P C (eds) '*Local Pathways to Global Development: Marking Five Years of the World Bank Indigenous Knowledge for Development Program'* 1, The World Bank, 2004, 30.

11 Rahman H, Ville A, Song A, Po J, Berthet E, Brammer J, Brunet N, Jayaprakash L, Lowitt K, Rastogi A, Reed G and Hickey G, 'A framework for analysing institutional gaps in natural resource governance' 11(2), *International Journal of the Commons*, 2017, 827.

12 Clement F, 'Analysing decentralised natural resource governance: proposition for a "politicised" institutional analysis and development framework', Policy Sciences, 2010, 1 —<http://dx.doi.org/10.1007/s11077-009-9100-8> on 29 October 2024.

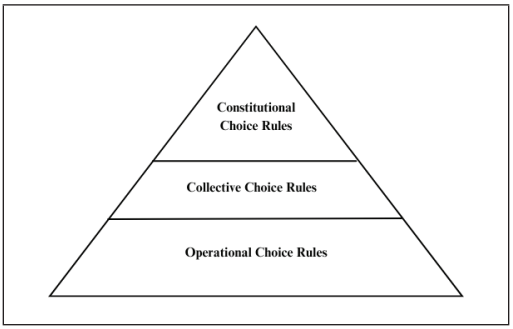

Figure 1.1

For effective and sustainable resource sharing, actions of individuals and communities must be guided by rules on all three levels, and these rules ought to be shaped autonomously. Operational and collective choice rules can be independently drawn from constant interaction between formal and informal institutions. Such cooperation is necessary for the rules to guide individual actions effectively. This interaction involves crucial aspects such as mutual recognition, reciprocity and linkages between the two forms of institutions.[13] The result of this interplay would be a dynamic system that promotes dialogue between all relevant stakeholders.

It should be noted that both formal and informal institutions contain operational choice, collective choice and constitutional choice rules requiring inter-concessional relations to allow for effective resource sharing and management. However, as observed by H.M. Tuihedur Rahman et al, formal and informal institutions may have different resource management objectives. An example of difference in management objectives may occur where actors within formal institutions dismiss actions based on informal non-constitutional rules, ruling them out as illegitimate. This was common in the colonial period as observed in the East African Royal Commission report 1953-1955. Although relating to land, parallel lessons can be drawn. The Report pushed for individual land tenure on the assumption that it would result in a higher standard of living for Kenyans. Native Kenyans were encouraged to forgo their sense of community, their preservation of land for future generations, the protection of transfer of land ownership to non-community members, as well as the continuation of

[13] Rahman H, Ville A, Song A, Po J, Berthet E, Brammer J, Brunet N, Jayaprakash L, Lowitt K, Rastogi A, Reed G and Hickey G, 'A framework for analysing institutional gaps in natural resource governance', 2017, 828.

traditions designed to preserve the tight-knit clans.[14] Such destabilisation of the pre-existing informal systems may be an indicator of an inter-institutional gap that lacks mutual recognition and reciprocity.

In order to fill gaps such as the above, and to avoid the perpetuation of the inter-institutional gap even in the treaty negotiations of the plastics treaty, there is a need to acknowledge community-level demands through addressing the aims and demands of all the present actors, both in informal and formal institutions, to further recognise and appreciate customary laws and systems and to mandate actors in formal institutions to comply with informal non-constitutional rules. This includes the incorporation of indigenous communities and the input of their representatives in the course of treaty negotiations, as well as in implementation measures on a national level. This would go a long way in ensuring that effective resource management, which requires the sharing of responsibilities in planning, implementation and enforcement of management rules between formal and informal institutions, is achieved.[15]

IV. Indigenous communities as informal institutions

From the literature and even in the context of international law, multiple definitions of the indigenous community have been adopted. This is due to the variances in political systems and legal frameworks across different states around the world.[16] In general, they are understood as the direct descendants of communities that existed in the pre-colonial era who lived within specific territories. In this paper, indigenous communities are regarded as informal institutions in so far as they precede and operate independently or semi-independently of state-established frameworks.

Indigenous communities had, many years prior to the colonial era, crafted their identities and lifestyles which crystallised into traditions that were then passed down through generations.[17] Although the cultures of the communities varied with the community in question, the overarching understanding of indigenous communities is that they had a distinct identity, distinct language

[14] *East African Royal Commission report 1953-1955*, June 1955, 323.

[15] Sen A and PattaNaik S, 'Community-based Natural Resource Management in the Sundarbans: Implications of Customary Rights, Law and Practices' 52(29), *Economic and Political Weekly*, 2017, 93.

[16] Sarivaara E, Maata K & Uusiautti S, 'Who is Indigenous?' special edition vol.1 *European Scientific Journal*, 2013, 369.

[17] Popova-Gosart U, 'Indigenous peoples: Attempts to Define' in Berthier-foglar S, Collingwood-whittick S, Tolazzi S, *Biomapping Indigenous People: Towards an Understanding of the Issues,* 2012, 87.

from other communities, and carried out their activities within their established territories. The operation of these communities within established territories created a dependence on the lands in which they resided, and the resources with which the land was vested.[18]

Following the dawn of colonialism, many of these communities became marginalised at the hands of colonial powers and were displaced from the lands that they traditionally held.[19] Within the African context, many of the indigenous communities, which consisted of nomadic and semi-nomadic pastoralists, became marginalised with limited access to economic and development resources and opportunities to substitute the lands that they had traditionally relied on for sustenance.[20] This led to an erosion of many of their practices, including those which were helpful in the conservation of the environment and in the sustainable use of natural resources.

V. Preservation of natural resources under indigenous systems

It had long been argued that the unhindered access to the natural resources and lack of formal norms results in a depletion and misuse of common resources.[21] However, subsequent authors such as Elinor Ostrom, have demonstrated that higher economic outcomes are achieved when natural resource users enjoy autonomy in the design of the rules that govern their common-pool resource (CPR) use and management, than when a set of external experts come in to design the rules for the community.[22] These features include the presence of a knowledge management system, a feedback mechanism, an inherent rule modification procedure, the stratification of norms and the use of autonomy by CPR users.[23]

---

18 African Commission on Human and People's Rights (ACHPR*) Report of the African Commission's Working Group of Experte on Indigenous Populations / Communities*, 2005, 89.

19 Murei M, Nyanchonga S and Lilechi M, 'Impact of Colonialism on the Indigenous Farming Practices of the Nandi People in Kenya, 1895-1963, 7(3), *African Research Journal of Education and Social Sciences*, 2020, 9. The authors, in this work, acknowledge that the response to colonial invasion varied from one region to another, however, the attempt to separate communities from their natural resources was widespread.

20 African Development Bank Group's *Development and Indigenous Peoples in* Africa, August 2016, 7.

21 Hardin G, 'The Tragedy of the Commons' 162(3859), *Science,* 1968, 1243.

22 Ostrom E, *Governing the Commons; The Evolution of Institutions for Collective Action*, 15, Press Syndicate of the University of Cambridge, Cambridge, 1990.

23 Gachenga E,'Governing the Commons Through Customary Law Systems of Water Governance The Case of the Marakwet' in IUCN Commission on Environmental, Economic and Social Policy, *Policy Matters*, 1, Finsbury Green, Australia, 2014, 63-65.

Diego Pacheo merged Ostrom's work on governance of common-pool resources with discussions on indigenous peoples and the role that they play in the sustainable use of natural resources. He observed that indigenous peoples, who have previously been left out of discussions on development and conservation of biodiversity, rely on and use natural resources without driving them to depletion.[24] In addition to the above-mentioned features, there are aspects of CPR management that when assessed, may aid in understanding the operation of these systems beyond formal law.

The studies of Ostrom and others have been proven by time. As of the year 2021, it has been estimated that indigenous people and local communities have custody of over a third of the established Key Biodiversity Areas, which are regions that contribute to the persistence of biodiversity to a great extent around the world.[25] This figure speaks to the communities that managed to retain their traditionally held lands and continue to live in harmony with their respective ecosystems. Owing to the fact that they continue to live and operate on these lands, they continue to enjoy unlimited access to natural resources and yet they are able to maintain sustainably.[26] However, the success of such communities is dependent on the maintenance of the features highlighted by Ostrom and others.

Lessons drawn from these considerations ought to be taken into account in the context of negotiation of international environmental treaties including the plastics treaty. Collective action, collective identity, graduated sanctions and self-coordination can all play a critical role in engaging communities in the fight against plastic pollution.

---

[24] Pacheo D, 'Recognition of the Role of Collective Action among Indigenous Peoples and Local Communities in the Convention on Biological Diversity' in IUCN Commission on Environmental, Economic and Social Policy, *Policy Matters*, 1, Finsbury Green, Australia, 2014, 107.

[25] World Wide Fund for Nature, UN Environment Programme World Conservation Monitoring Centre, GEF Small Grants Programme, ICCA-Global Support Initiative, LandMark Global Platform of Indigenous and Community Lands, The Nature Conservancy, Conservation International, Wildlife Conservation Society, UNDP Equator Prize, International Land Coalition Secretariat, Conservation Matters LLC and International Union for Conservation of Nature, *The State of Indigenous Peoples' and Local Communities' Lands and Territories: A technical review of the state of Indigenous Peoples' and Local Communities' lands, their contributions to global biodiversity conservation and ecosystem services, the pressures they face, and recommendations for actions*, 2021, 31.

[26] World Wide Fund for Nature, UN Environment Programme World Conservation Monitoring Centre, GEF Small Grants Programme, ICCA-Global Support Initiative, LandMark Global Platform of Indigenous and Community Lands, The Nature Conservancy, Conservation International, Wildlife Conservation Society, UNDP Equator Prize, International Land Coalition Secretariat, Conservation Matters LLC and International Union for Conservation of Nature, *The State of Indigenous Peoples' and Local Communities' Lands and Territories: A technical review of the state of Indigenous Peoples' and Local Communities' lands, their contributions to global biodiversity conservation and ecosystem services, the pressures they face, and recommendations for actions*, 33.

VI. Collective action and collective identity

Collective action is defined by Steve Bruce and Steven Yearley as the behaviour of a group towards a specific and finite goal.[27] It is helpful in building the resilience of a social-ecological system, in which resilience is understood as a system's ability to maintain its composition and operations amid disturbances.[28] As a phenomenon, it is useful in natural resource management following the concession that activities which touch on resource management cannot be effectively achieved by select individuals alone. Collective action is often driven by conditions where resources are scarce in comparison to their demand, and thus there is a need to manage competition that arises with regard to the resource use.[29] It is an effective tool in natural resource management as it introduces mutual monitoring of individuals who are in direct contact with the resources in question. In establishing and maintaining this phenomenon in natural resource management, Blake D. Ratner et al recommend capacity building for collective action.[30]

Alfons W. Mosimane et al, on the other hand, discuss how collective action can be affected by collective identity and its change, and how the management of common pool resources through collective action relies heavily on collective identity. On a community level, a collective identity is formed on the basis of shared understanding between individuals. This identity aids individuals within the community to shape their expectations of the collective and to appreciate it. In addition to this, continuous self-organisation is achieved on a community level as the collective identity adjusts to the different levels of availability of the common resource. Individuals are able to identify themselves as part of a bigger group in which they can develop their own goals while sticking to the goals of the collective.[31] Collective identity is two pronged and consists of identification and affective commitment. When both factors are present, individuals are able

---

27 Bruce S and Yearley S, *The Sage Dictionary of Sociology*, Sage Publications, 2006.

28 Ratner B, Meinzen-Dick R, Hellin J, Mapedza E, Unruh J, Veening W, Haglund E, May C and Bruch C, 'Addressing conflict through collective action in natural resource management' 11(2), *International Journal of the Commons,* 2017, 877.

29 Tiffen M, Mortimore M and Gichuki F, *More People, Less Erosion; Environmental Recovery in Kenya,* 216. During the period of land encroachment by the colonial British government, the Akamba people did not align with the established goals of forest reservation and gazetting of land for forests. As a result of this, and the diminishing land resources in the region, they collectively settled and cultivated within the reserves.

30 Ratner B, Meinzen-Dick R, Hellin J, Mapedza E, Unruh J, Veening W, Haglund E, May C and Bruch C, 'Addressing conflict through collective action in natural resource management' 877.

31 Mosimane A, Breen C and Nkhata B, 'Collective identity and resilience in the management of common pool resources', 2012, 344.

to discharge the duties that are placed on them by the collective without much questioning.[32]

VII. The role of graduated sanctions

Sanctions exist to deter wrongdoers in a group from repeatedly violating community rules and are based on the gravity of the problem or the repetition of the offence.[33] Within a group setting that engages in common pool resource management, graduated sanctions are helpful in maintaining interpersonal relationships while correcting behaviour that does not contribute to the goals of the collective. In addition to this, graduated sanctions aid in maintaining proportionality between the level of violation and the harshness of the consequences of said violations.

VIII. Self-coordination within informal institutions

Small groups, that can be considered institutions in their own right, allow each member to achieve personal goals that would be unachievable on their own. Through constant interaction, the group's attitude, cohesion, and collective behaviour are sufficient to reinforce the agreed-upon behaviour on individuals, and this becomes more effective with smaller groups.[34] This is due to the institutions' promotion of social identity and the social categorisation that occurs among group members. The sense of belonging that comes from being a part of a community will naturally lead to an individual acting in accordance with others.

Garret Hardin proposes either state or privatised administration to counter the tragedy of the commons and thus forestall environmental degradation. His claim is met with varied counterarguments, including one made by Rogerio Scabim et al. The authors, in assessing whether small groups can avoid the tragedy of the commons, counter-propose that environmental degradation can be avoided where self-coordination is done within small groups in the

---

[32] Ellemers N, Kortekaas P and Ouwerkerk J, 'Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity', *European Journal of Social Psychology*, 1999, 371.

[33] Cox M, Arnold G and Tomás S, 'A Review of Design Principles for Community-based Natural Resource Management', 15(4). 2010 Ecology and Society, <http://www.ecologyandsociety.org/vol15/iss4/art38/> accessed on 15 October 2023.

[34] Morano R, Alves de Moraes E and Jacomossi R, 'Can small groups avoid the tragedy of the commons?' *AI & Society*, 2018, 71, —<https://doi.org/10.1007/s00146-017-0720-9> on 29 October 2023.

management of a scarce resource, and this coordination is achieved through a social identity and social institutions.[35] As a result of being part of small groups, the social identity of an individual is tied to the shaping of a person's internal and external circumstances in order to fit in with the reality created by the group. The behaviours, attitudes, expectations and mentalities that are adopted by the individual are those formed on the group level and contribute to social cohesion among the group.[36] Within the scope of common-pool resource management, communities have been proven to utilise their collective identity and behaviours to handle challenges that arise from the exploitation of resources.[37]

Following the effective handling of the challenge, coupled with the constant interaction with the natural resource, groups are able to develop collective intelligence that they are able to pass down to future generations. Collective intelligence then enables groups to carry out their duties at the same time in a harmonised way.[38] Informal institutions such as these communities, therefore, make economic relationships predictable and allow decision-makers in formal institutions to make informed decisions while the groups continue to make collective achievements.[39]

The above demonstrates that the plastics treaty ought to draw on the lessons from the governance of commons by indigenous peoples to engage informal actors in the setting up of informal institutions that share a collective identity and thus can adopt collective action in the curbing of plastic waste.

IX. The accommodation of informal normative frameworks in international law

Within African legal systems, African customary law is a reflection of the lived African experience and is a result of merging law and social order.[40]

---

35 Morano R, Alves de Moraes E and Jacomossi R, 'Can small groups avoid the tragedy of the commons?' *AI & Society*, 2018, 71.

36 Chen R and Chen Y, 'The Potential of Social Identity for Equilibrium Selection' 101(6), *The American Economic Review,* 2011, 2562.

37 Tiffen M, Mortimore M and Gichuki F, *More People, Less Erosion; Environmental Recovery in Kenya* , 1, African Centre for Technology Studies , Nairobi, 1994, 216.

38 Morano R, Alves de Moraes E and Jacomossi R, 'Can small groups avoid the tragedy of the commons?' *AI & Society*, 2018, 71.

39 Ostrom E, *Governing the Commons; The Evolution of Institutions for Collective Action*, 15, Press Syndicate of the University of Cambridge, Cambridge, 1990, 30.

40 Buluma B, 'Integration of African Customary Legal Concepts into Modern Law: Restorative Justice: A Kenyan Example' *MDPI,* 2019, 1.

In assessing the interplay between African customary law and formal legal frameworks, social order gives way for the development of law and not the other way round. This occurs in three phases, with the first one being that social order creates values which guide the collective identities and behaviour of a group. These values are tried, tested and approved by the groups before graduating to become norms.

Within the second phase, the various norms that have been accepted form the society's customs. Interaction with formal lawmakers then leads to the third phase, in which these customs are written down and given 'legitimacy' through a formal legal status within a system. Therefore, in order to properly appreciate customary law from a point of African legal philosophy, there is a need to interact with the social order, norms and customs that give rise to the customary law. Such an understanding is crucial for the integration of indigenous communities and their customary law into formal legal systems without losing their authenticity.

On an international level, African customary law and the operation of indigenous communities is acknowledged and provided for in frameworks that states have adopted. For instance, the Rio Declaration on Environment and Development provides for indigenous people and affirms their entitlement to protection from states as they preserve their cultural practices.[41] This is based on the indigenous communities and the critical role that they play in environmental conservation. In addition to this, Agenda 21 of the Rio Declarations acknowledges the indigenous communities and the scientific traditional knowledge that they apply in their interactions with nature, which contributes significantly to the sustainable use of natural resources.[42]

Owing to the knowledge that the communities have gathered and developed, and its utility in the preservation of biodiversity, the agenda calls for the empowerment of indigenous people in their continued interactions with the natural environment. Agenda 21 of the Rio Declaration contains a chapter on the inclusion of demographic trends within various regions and the consideration of these trends in sustainable development. On a grassroots level, the implementation of environment programmes as per the agenda includes collaboration with various institutions, which include religious institutions.[43]

---

41 Principle 22, Rio Declaration on Environment and Development, in the Report of the United Nations Conference on Environment and Development A/CONF.151/26.

42 Paragraph 26.1, Agenda 21, United Nations Conference on Environment & Development, 1992.

43 Paragraph 5.53, Agenda 21, United Nations Conference on Environment & Development, 1992.

The Indigenous and Tribal Peoples Convention of 1989, which exists to encourage governments to protect and enhance the rights of indigenous communities, affirms the rights of ownership of land over which indigenous communities have long occupied.[44] This provision is mindful of the economic activities carried out by indigenous communities beyond agriculture, paying attention to nomadic indigenous communities inclusively. In addition to the right of these groups to own and occupy their traditional lands, their right to manage and conserve the environment is secured under the Convention.[45]

In addition to the application of the Indigenous and Tribal Peoples Convention to this context, the Convention on Biological Diversity, which exists to guide states on the conservation of biodiversity globally, has one of its objectives to be the sustainable use of natural resources and the prevention of the long-term decline of biological diversity. Contracting parties to the Convention are encouraged to respect, preserve and to maintain the practices of indigenous communities and their lifestyles, as well as to promote the application of such knowledge.[46] In the development of frameworks for sustainability under the Convention, the contracting parties are mandated to exchange information amongst each other for the promotion of conservation of biodiversity.[47] Indigenous and traditional knowledge are included as part of the information that can positively contribute to environmental protection and preservation, thereby acknowledging the strong utility of the knowledge of indigenous communities to environmental preservation.

X. Indigenous communities and their engagement in treaty negotiations

Across the treaty negotiations surrounding the upcoming plastics treaty which have been held thus far, in Uruguay, France, Kenya, Canada and South Korea, reference has been made to the importance of indigenous communities and the role that they play in conservation of the environment. This reference can be seen through the intergovernmental negotiating committee (INC) meetings as they include stakeholder engagement as a critical part of drafting of the legally binding instrument. Within the INC-1 for example, there was the widespread acknowledgement of the need to include all important stakeholders

[44] Article 14, *The Indigenous and Tribal Peoples Convention*, 1989, C169.

[45] Article 15, *The Indigenous and Tribal Peoples Convention*.

[46] Article 8, *Convention on Biological Diversity*, 1992, United Nations, Treaty Series, vol. 1760, 79.

[47] Article 17, *Convention on Biological Diversity*, 1992, United Nations, Treaty Series, vol. 1760, 79.

in the process, with emphasis on hearing from marginalised groups such as indigenous people. The incorporation of their knowledge in the construction and improvement of existing knowledge bases would go a long way in informing the development and implementation of the treaty.[48]

In the course of INC-2, on the other hand, discussions on the inclusion of indigenous people morph from the general acknowledgement that they need to be included as stakeholders to their inclusion in information exchange practices. One of the proposed obligations for state parties, which was under discussion by the delegations present, was the promotion of safe and sustainable alternatives, a process in which indigenous peoples and their knowledge systems can play a role in.[49] The outcome of INC-3 and INC-4 meetings shows the continued recognition of traditional knowledge, as well as local knowledge systems, and the use of these systems to complement the scientific approaches proposed to curb the persistent problem of plastic pollution. These discussions then boil down to the zero draft of the plastics treaty, which then includes indigenous peoples and their role in information exchange.[50]

XI. The role of religion in natural resource management

Whereas the focus of this paper has been an analysis of informal normative frameworks for environmental governance, the lessons drawn can be used to tap into the potential role of religious norms in achieving sustainable environmental governance. Despite most countries being secular states where religion is not mandated, a significant percentage of their citizens ascribe to some religion or other. Religious norms and institutional frameworks to some extent play a normative role in society. Dominant religions, such as Christianity, Islam and Hinduism, share certain commonalities in the moral principles governing the relations between the human person and nature. The care and respect for the

[48] Intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, *Report of the intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, on the work of its first session,* 28 November–2 December 2022, 12.

[49] Intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, *Report of the intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, on the work of its second session*, 29 May- 2 June 2023, 25.

[50] Intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, *Zero draft text of the international legally binding instrument on plastic pollution, including in the marine environment*, 26.

environment forms a fundamental part of the moral code of conduct.[51] The effect of this is that there has been an increased affinity towards nature which has been linked with spirituality and the engagement in green practices.[52]

There are themes across all the dominant religions which coincide with the notion of environmentalism and the preservation of nature. Within Islam, for example, man is entrusted with nature, and should therefore take care of it. This is a call to Muslims to engage in caring for and protecting the environment, failure to which they shall be held answerable on the day of judgement.[53] Within Hinduism, on the other hand, part of the teachings that relate to environmental protection is that God is present in all living things, great and small, and this is based on the notion of reincarnation. In line with this teaching, adherents to the religion are expected to preserve all life, including non-human life such as the natural environment, in order to obtain God's blessings.[54]

One of the religious documents that has demonstrated the potential of informal religious norms and institutions in environmental governance is the *Laudato Si* Encyclical Letter of Pope Francis 'On Care For Our Common Home'. The letter speaks to the interplay between religions and science, noting that religious classics provide an adequate context for ethical principles to be practised, and that ethics cannot be assessed without a context.[55] It is further affirmed that the majority of people on Earth are believers and as such, religions ought to dialogue among themselves for the sake of environmental conservation and protection.[56] The messages that span across these dominant religions indicate that there is room for discussions on environmental conservation from a faith-based perspective. Given that religions operate outside the realm of formal law, there is potential for the inclusion of religious institutions in discussions surrounding sustainable development and the preservation of the environment on a much larger scale, such as within international law.

The letter points to the 'rapidification' that is occurring on planet Earth, in which the speed of human developments is outpacing the rate of biological

---

51 Bhagwat S, 'The Role of Religion in Linking Conservation and Development: Challenges and Opportunities' 5(1), *Journal for the Study of Religion, Nature and Culture*, 2011, 41.

52 Bhagwat S, 'The Role of Religion in Linking Conservation and Development: Challenges and Opportunities', 2011, 46.

53 Kula E, 'Islam and Environmental Conservation', School of Public Policy, Economics and Law, University of Ulster, 4.

54 Onyebuchi O J & Osim S, Hinduism and Ecology: Its relevance and importance' 1(1), Journal of the Arts/Humanities, 2018, 6.

55 Encyclical Letter Laudato Si' of the Holy Father Francis on Care for our Common Home, 199.

56 Encyclical Letter Laudato Si' of the Holy Father Francis on Care for our Common Home, 201.

evolution.[57] The document notes that the problems currently being experienced, including climate change and pollution, are the result of several rapidification processes, including the throwaway culture, which have emanated within the past few decades.[58] To illustrate this culture, he compares the process of plant and tree development to the short life cycle of products and the inability of industrial systems to absorb and reuse waste and by-products. The Pope calls upon Christians and humanity in general to develop stronger responses to the negative impacts of fast-paced industrialisation in order to restore the environment to its former glory.

XII. Conclusion

Indigenous communities and religion as informal institutions operate beyond the scope of state control and regulation but have an influential role in environmental conservation and protection. This is due to the phenomena of self-coordination, collective action, collective identity, the utilisation of traditional scientific knowledge by indigenous communities, the call of believers of religion towards environmental preservation and the teachings of religions to protect and preserve nature for spiritual purposes.

These frameworks have stood the test of time. The frameworks include a knowledge base that can complement the scientific measures that will be proposed, adopted and enacted. They have the potential to positively contribute to the development of a robust, flexible and responsive environmental framework of governance for plastics. The operation of these informal institutions has been acknowledged internationally and within various frameworks, party states have been encouraged to engage these formal institutions. Within the drafting and enactment of a plastics treaty, the engagement of these institutions will go a long way in the fight against plastic pollution.

[57] Encyclical Letter Laudato Si' of the Holy Father Francis on Care for our Common Home, 18.

[58] Encyclical Letter Laudato Si' of the Holy Father Francis on Care for our Common Home, 22.

Plastic Pollution and our Moral Responsibility: Lessons from the African Eco-Communitarian Responsibility Approach

*Beatrice Okyere-Manu**

Abstract

Recently, one typically hears a weighty emphasis on managing plastic waste globally. This is due to its detrimental effect on the environment, human health, and the ecosystem. It has been noted that the African continent produces less plastic waste than the global waste landscape. Yet, Africa stands among the most vulnerable continents regarding the harmful effects of plastic pollution. Recent discussions on plastic pollution and its management have often overlooked the African pollution management voice.

This paper argues that the Eco-Communitarian Responsibility approach suggests a plausible insight for redefining our moral responsibilities towards plastic pollution in Africa. By exploring the principles of this approach, we can contribute a perspective beyond formal law to the global discourse on sustainable environmental practices. The Eco-Communitarian Responsibility approach emphasizes unique values such as interconnectedness and collective responsibility, highlighting the need for diverse perspectives to effectively address plastic pollution in the African context. Using a qualitative research methodology, the article comprehensively reviewed existing literature on plastic pollution in Africa and the principles of the Eco-Communitarian Responsibility approach.

The article is structured in five sections: first, the introduction, sets the article's tone. Next is a discussion of the impact of plastic pollution, highlighting its effects on humans and the ecosystem. The third section examines the current management strategies, exposing the challenges and benefits of each strategy. The fourth section introduces the Eco-Communitarian Responsibility approach and discusses how its principles can inform African plastic waste management. This is followed by a conclusion highlighting the implications of the findings and the lessons for future research and policy development.

Keywords: Environment, Eco-communitarian Responsibility, Moral Responsibility, Plastic, Pollution

* PhD, Professor & Ethics Studies Coordinator, University of KwaZulu-Natal, School of Religion Philosophy and Classics (Durban, South Africa). okyeremanv@ukzn.ac.za

I. Introduction

The current global crisis results from the increased mismanagement of the environment and the growing presence of pollution. For example, plastic waste has recently become a significant worldwide land and sea pollution issue. Plastic was once perceived as one of the most outstanding scientific achievements worldwide and is now seen as a major contributing factor to the ecological menace. It is common knowledge that its non-degradable nature has been found to significantly contribute to the decline of ecosystems, affecting livelihoods and threatening human and non-human health.[1] Not only does its debris persist in the environment for years, but it also can be transported far from its main source on land.[2] Most of the time, it is transported into the sea, and a recent estimation is that about 8 metric tonnes enters the sea yearly.[3] Since this estimation was done in 2019, the number may have increased.

Despite the above observation, the benefits of plastics to society cannot be over-emphasized. It is common knowledge that they are used worldwide, domestically, in the transport sector, and in the health sector, among others. However, in recent times, environmentalists, such as Webb et al, have highlighted through the media and many other platforms, the damage plastics and plastic waste do to our land and the aquatic life in our rivers and oceans.[4] As noted, with its non-degradable characteristics, it can stay in the soil for more extended period; it chokes and blocks sewerage, causing floods, etc. Marine life is affected by plastic waste. Also, apart from the ugly aesthetic sight of plastics on our coastal shores, aquatic life such as fish, macro-invertebrates, plants, and animals living

---

1 Shomuyiwa D, Onukansi F, Ivanova M, Lucero-Prisno D, 'The Plastic treaty: What is in it for Africa?' *Public Health Chall*, 2023, < https://doi.org/10.1002/puh2.83> on 22nd October 2024.

2 Babayemi J, Nnorom I, Osibanjo O, and Weber R, ' Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <https://doi.org/10.1186/s12302-019-0254-5> on 22nd October 2024.
Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, < https://doi.org/10.3390/polym5010001> on 22nd October 2024.
Shah A, Hasan F, Hameed A, Ahmed S, 'Biological degradation of plastics: a comprehensive review' *Biotechnol Adv,* 2008, <https://doi.org/10.1016/j.biotechadv.2007.12.005> on 22nd October 2024.
Li W, Tse H, Fok L, 'Plastic waste in the marine environment: a review of sources, occurrence and effects' 1(1) *Sci Total Environ* , 2016,333–349.

3 Jensen N, 'Eight steps to solve the ocean's plastic problem' *World Economic Forum* ,2019, <https://www.weforum.org/agenda/2018/03/8-steps-to-solve-the-oceans-plastic-problem> on 8 Feb 2024.

4 Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

in the water is lost. Some of them are due to plastic in their system, threatening their extinction. [5]

Even though media coverage has encouraged coastal beach cleaning in most countries, it has had little effect. Furthermore, there have been attempts to manage the waste, but less than 20% worldwide is being recycled. However, the demand for plastics is growing because it has revolutionized the world since its first production in the 1950s.[6]

A UNEP document confirmed that in 2020, the total production of plastic globally was more than 400 million tonnes.[7] with the increased demand for production, it is estimated that global plastic produced yearly may reach over 1.1 billion tonnes in the year 2050.[8] It must be noted that with the demand for more plastic, there will be an increase in waste. The irony is that most countries struggle to manage waste effectively. The generation of plastic waste is a result of the amount of plastic consumption. Letcher quoted a document by UNEP that "out of the over 300 million tonnes of plastic produced yearly, about 8 million pollute our oceans".[9] It has been estimated that by 2050, "the mass of plastic in the oceans will exceed the mass of fish."[10] Africa stands among the most vulnerable due to the negative effects of plastic pollution, and the current situation is dire because, in most African countries, there is a "high proportion of mismanaged waste plastics and lack of state-of-the-art recycling facilities".[11]

Blight L and Burger A, 'Occurrence of plastic particles in sea-birds from the eastern north pacific' Department of Biology University of Victoria, 1997, <http://www.aburger.ca/files/2022/01/Blight-Burger-1997-plastic-MPB.pdf> on 22nd October 2024.

5 Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly (ethylene terephthalate)' Polymers, 2013, < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

6 Letcher T, 'Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions' *Academic Press: London*, 2020, 3-12.

7 United Nations Environment Programme *'Drowning in Plastics –Marine Litter and Plastic Waste Vital Graphics'* 21st October 2021, 6.

8 Geyer R, 'Production, use, and fate of synthetic polymers. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions' *Academic Press: London*, 2020, 13-32.

9 Letcher T, 'Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions' 3-12.

10 Walker L, 'Weight of plastics in seas could exceed that of all fish by 2040' The Brussels Times, 21 January 2022 <https://www.brusselstimes.com/202522/weight-of-plastics-in-seas-could-exceed-that-of-all-fish-by-2040> on 22nd October 2024.

11 Jambeck J, Hardesty B, Brooks A, Friend T, Teleki K, Fabres J, Beaudoin Y, Bamba A, Francis J, Ribbink AJ, Baleta T, Bouwman H, Knox J, Wilcox C, 'Challenges and emerging solutions to the land-based plastic waste issue in Africa' 1(1) *Marine Policy,* 2018, 256–263.

An example is my personal experience in one of the African countries. The visit was during the rainy season, and I noticed there was litter everywhere after the rains, mainly plastic and non-biodegradable snack packaging. In addition, there were blocked gutters and floods in the capital city. A more distressing scenario was a day when a strong wind blew, followed by a big storm. During the wind's course, all that one could see in the sky was a plastic waste of different types and colours flying amidst dust and dirt in the sky. The sight of plastics in the sky was a cause for concern, yet to my surprise, people went about their 'business as usual' unconcerned. I could not understand why the people were not bothered when I believed the situation warranted an immediate response. As I began pondering it, the following questions came to mind; How do people dispose of empty plastics, particularly after drinking from the water sold in sachets, bottles, and other single-use plastics? Where does all this plastic waste go? What are the short and long-term effects of the mismanagement of plastic waste? Why are people unconcerned about this waste? What are individuals, companies, and the government's responsibilities in managing plastic waste? Are they even aware of their responsibility? What needs to be done?

My inclination was that this experience of mismanagement of plastic waste is not unique to the city in question, but more African towns and cities may face the same predicament. Though much has been done to respond to the plastic waste challenges such as pollution, marine litter biodiversity, and human health, the problem is escalating, making its way onto the agenda of international conferences such as the "United Nations Environmental Assembly meetings, the Basel and Stockholm Conventions, among others".[12] A report commissioned by World Wide Fund for Nature (WWF) affirmed that "without plausible global rules, regulations, and coordinated action, the transboundary plastic pollution crisis is worsening".[13] Writing on the South African experience, Sadan et al, say; "the existing policy and legal frameworks are fragmented and ineffective due to policy gaps at the global, regional, and national levels. There is an urgent need to address these gaps".[14]

---

[12] Babayemi J, Nnorom I, Osibanjo O, and Weber R, ' Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <https://doi.org/10.1186/s12302-019-0254-5> on 22nd October 2024.

[13] World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 7 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

[14] Sadan Z and De Kock L, 'Plastic Pollution in Africa: Identifying policy gaps and opportunities' *WWF*, 2022, 3 <https://wwfafrica.awsassets.panda.org/downloads/wwf_plastic_pollution.pdf> on 22nd October 2024.

If this statement is true for South Africa, then the assumption is that gaps in policy are also actual for most African countries. This chapter, therefore, argues that without broader possible participation in the exchange of ideas from research and indigenous conservation practices with the view to formulate new strategies and all-rounded efforts to mitigate this menace, the deadly effect of plastic pollution will continue to worsen.

With this backdrop, the current chapter proposes what Africa can bring to the global discussion table. The intention here is not to give a solution but to suggest plausible principles as lessons from an African Indigenous Approach to environmental management. The idea is that the principles from the Eco-Communitarian Approach, which has guided most indigenous communities for many years, can redefine our moral duty toward plastic pollution in Africa. The chapter is presented in six sections. First, it briefly highlights the nature and benefits of plastics. Second, it explores the impact of plastic waste. The third section examines the current management strategies in most African countries, and the fourth section highlights the need for a holistic ethical approach to respond to Africa's current state of affairs. The fifth section introduces the Eco-communitarian approach, highlighting its principles that can inform plastic waste management. A conclusion will follow this.

II. The nature of plastics

Plastics are seen and used everywhere around the globe. A conscious look in my house recently for items made of plastics resulted in a shocking revelation. Plastic items are everywhere, from the main compound to the kitchen, through the sitting room, bathrooms, and bedroom, which suggests that plastic has become essential and indispensable to our modern way of life. It was clear to me that there were traces of plastics in almost all the equipment in the house. For example, hose pipes, fridges, suitcases, clothes, chairs, and various single-use plastic items such as water, food, storage, and bags. This suggests that plastic has been and continues to be part of our daily lives.

It must be noted that the use of plastics began around the early 1900s, during Bakelite production, a synthetic material obtained from chemicals from fossil fuels. Plastic comes from *Plastikos,* a Greek word that means capable of being shaped or moulded. It is commonly used in the textile, automotive, manufacturing, and packaging industries.[15] Geyer says that it "is a summary

[15] Chen L, Nath T, Chong V, Gibbins C and Lechner A, 'The Plastic Waste Problem in Malaysia: Management, Recycling and Disposal of Local and Global Plastic Waste' 3(1) *SN Applied Sciences*, 2021, 1-15.

term typically used for man-made, i.e., synthetic, polymers. A polymer is a large molecule consisting of many equal or similar subunits bonded together".[16] Because plastics are relatively cheap and versatile, "they are used in packaging, building and construction, transportation, electrical and electronic equipment, health implants, and agriculture".[17] The annual global use amounted to 460 million tonnes, of which plastic packaging, construction, and transportation represent more than 60% of the weight.[18]

III. Plastic waste pollution

As noted in the introduction, plastic waste pollution currently poses human and environmental issues globally. This is mainly because plastic has resilience characteristics of not being degradable, and Webb et al, have noted that plastic pollution is maintained purposefully and inadvertently. The former is "through illegal or inappropriate dumping of domestic and industrial refuse" and the latter is "through poorly contained static and transported waste".[19] These land-based plastic wastes are carried along by flowing rivers, "where it is further added to by the disposal or loss borne from marine vessels and offshore petroleum platforms".[20] Thus, these pollutants may remain both on land and eventually in the waterways for a very long time. For these reasons, the WWF document has argued that "plastic is not cheap. its production and disposal - and the pollution it causes come with high social, environmental, and economic costs, borne primarily by communities and governments".[21] First, local communities are affected negatively during the pre-production and production process. It has been noted that a pre-production plastic pellet called 'nurdles' is transported,

---

16 Geyer R, 'Production, use, and fate of synthetic polymers. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions', 13-32.

17 Letcher T, 'Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions' 3-12.

18 OECD, 'Global Plastic Outlook: Economic Drivers, Environmental Impact and Policy Options, *OECD Publishing*, 2022 < http://doi.org/10.1787/de747aef-en> on 14th January 2024. 33.

19 Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

20 Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

21 World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

regionally or globally, to manufacturers that are unlikely to recover. The WWF document reiterated Eunima 2016, who argued that, during the transportation of waste from land to the waterways, there is a possibility of spillage and nurdles, and it is estimated that 230,000 tonnes leak into the ocean annually.[22] Nurdles "leach into terrestrial and marine ecosystems through ingestion and bioaccumulation in the food chain".[23]

Plastic elements that end up in the ocean have been shown to contain poisonous chemicals. Webb et al, quoted Hirai et al who highlighted chemicals, such as "polychlorinated biphenyls (PCBs), nonylphenol (NP), organic pesticides, such as dichlorodiphenyltrichloroethane (DDT), polycyclic aromatic hydrocarbons (PAHs), polybrominated diphenyl ethers (PBDEs) and bisphenol A (BPA) in the plastic debris found consistently in the sea".[24] This confirms the media's exposure to the dangers posed by plastic to life in the sea. Most species, such as marine birds, sea turtles, and sharks, have been seen entangled or have ingestion of plastics made out of toxic compounds.[25] Webb et al, reiterated Schecter et al, that most of these toxic chemicals have been linked to many human health problems, such as "developmental impairment (neurological impairment, growth abnormalities, and hormonal imbalances), cancer, endocrine disruption, neurobehavioral changes, arthritis, breast cancer, diabetes, and DNA hypomethylation".[26]

The above discussion highlights that the global threat posed by plastic waste pollution is multifaceted, impacting both the environment and human health. From its persistence in terrestrial and marine ecosystems to its contribution to toxic chemical accumulation, the adverse effects of plastic pollution are undeniable. The pre-production, transportation, and improper disposal of

---

[22] World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

[23] World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

[24] Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, 2 < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

[25] Sazima I, Gadig O, Namora R, Motta F, 'Plastic debris collars on juvenile carcharhinid sharks (Rhizoprionodon lalandii) in southwest Atlantic' *Marine Pollution Bulletin*, 2002, 44, 1147–1149.

[26] Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers,* 2013, 2 < https://doi.org/10.3390/polym5010001> on 22nd October 2024.

plastics, particularly nurdles, continue exacerbating this issue. As highlighted, hazardous chemicals in plastic waste significantly threaten marine life and human healthand ecosystems worldwide. The next section looks specifically at pollution in Africa.

IV. Plastic pollution in Africa

Africa has been noted to produce 5% and uses 4% of the global plastic.[27] A study conducted by Babayemi et al, on the consumption of polymers and plastic in Africa revealed that six countries in Africa, specifically "Egypt, Nigeria, South Africa, Algeria, Morocco, and Tunisia, accounted for about 74.6% (approximately 87.7 Mt) compared to the estimated consumption (172 Mt) for the entire continent. Suggesting that the six countries consumed 51% of the total African plastics".[28]

Though it has been noted that Africa lacks comprehensive data on plastic production, in various countries, Massa et al, managed to compile data on some countries as follows:

> In 2020, Egypt (2329 kt), South Africa (1410 kt), and Nigeria (513 kt) were among the biggest African plastic producers. Ethiopia's estimated production in 2022 was 386 kt, Ghana's was 205 kt in 2019, and Kenya's was 130 kt in 2018. In 2018, Kenya produced around 30% of the country's 433 kt of primary plastic material.[29]

In addition, Massa et al, study revealed the following figures:

> Egypt, Nigeria, South Africa, Algeria, the Democratic Republic of Congo (DR Congo), and Tanzania are the largest producers of plastic waste in Africa, with an average of more than 1000 kt. Ghana, Kenya, Angola, Cameroon, Côte d'Ivoire, Morocco, and Uganda generate over 500 kt on average, while Mozambique, Ethiopia, and Zambia over 300 kt.[30]

These figures confirm the plastic menace and the need for drastic measures to respond to it. Looking at the high figures in Africa, the WWF report adds that

---

[27] Shomuyiwa O, Onukansi O, Ivanova M, Lucero-Prisno D, 'The Plastic Treaty: What is in it for Africa?' 3(83) *Public Health Chall*, 2023, 2.

[28] Babayemi J, Nnorom I, Osibanjo O, and Weber R, ' Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <https://doi.org/10.1186/s12302-019-0254-5> on 22nd October 2024.

[29] Massa G and Archodoulaki M, 'An Imported Environmental Crisis: Plastic Mismanagement in Africa' *Sustainability* 2024, 16, 672, 2 <https://doi.org/10.3390/su16020672> on 22nd October 2024.

[30] Massa G and Archodoulaki M, 'An Imported Environmental Crisis: Plastic Mismanagement in Africa' *Sustainability* 2024, 16, 672, 2 <https://doi.org/10.3390/su16020672> on 22nd October 2024.

the COVID-19 pandemic also contributed to the spread of plastic waste: "It led to a rising consumption of plastic packaging, which is higher than the packaging consumed in physical stores".[31] Babayemi quoted Janbech et al, who revealed a disturbing estimate that "250 million tonnes of plastic are likely to enter the oceans by the year 2050, and 1 metric tonnes of plastic waste will enter the ocean from Africa".[32] This is if nothing is done to remedy the current situation.

So far, we have seen that while Africa contributes a smaller percentage of global plastic production and usage, certain countries are significant producers of plastic waste, with alarming figures from Egypt, Nigeria, and South Africa. The lack of comprehensive data across the continent further complicates the challenge, though the available statistics paint a clear picture of the severity of the problem. The COVID-19 pandemic exacerbated this crisis by increasing plastic consumption particularly through packaging.

V. Current management strategies

There are several strategies for managing plastic pollution. First, single-use plastic products are among Africa's significant plastic waste sources, mainly because they can be disposed of quickly and easily everywhere. They are often lighter or more durable and affordable plastic. They come in different forms, like sweets and food wrappers, straws, swaps, earbuds, snack food packaging, beverage bottles and lids, plastic cups and plates, plastic grocery bags, and takeaway containers. A WWF report says, "Many of these products are designed with mixed materials, which make them difficult to sort and reuse or recycle".[33] Since no rules and regulations hinder the dumping, most people have opted to dump them openly. Most of these dumps have grown into hazardous cliffs of garbage, occupying large stretches of land that could have been used productively – Koshe in Ethiopia is a good example. In 2017, Koshe (dirt) was an open landfill

[31] World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

[32] Babayemi J, Nnorom I, Osibanjo O, and Weber R, ' Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <https://doi.org/10.1186/s12302-019-0254-5> on 22nd October 2024.

[33] World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

with a surface area of 25 hectares, which receives 300,000 tons of solid waste from Addis Ababa, the capital of Ethiopia, annually".[34] "The garbage landslide killed about 113 people living around the landfill, it also displaced and injured several others. The rubble extended 20 meters beyond the landfill's designated boundary, damaging at least 50 houses".[35] Since this incident, many attempts have been made to tackle further disasters through the combined efforts of "United Nations Habitat and the government of Japan; however, the dumpsite continues to grow because there are over 3,600 tonnes of mixed waste added to it on a daily basis".[36] There seems to be no proper waste segregation system, making it difficult to separate other solid wastes from plastic waste. This has resulted in many poor and vulnerable individuals searching on the waste dump for recyclable materials.

The second strategy common in most parts of Africa is the open burning of plastics. The danger attached to this is that these fires often continue for weeks unless heavy rainfall extinguishes them. In addition to burning plastics at dump sites, most people burn plastic cables to retrieve copper wires and other valuable metals to sell as a source of their livelihoods. In addition, most rural communities burn plastics to make fires for food and as a heating source.[37] Burning produces dangerous fumes that affect humans and non-humans alike. There is also the strategy of incineration. This strategy also produces poisonous air pollution.

Another method of plastic waste management is recycling. It must be noted that the first African country to recycle synthetic plastic waste into oil was Kenya in 2017. Ethiopia was also the first country to convert waste into an energy plant through the combined effort of a consortium of some international companies and the Government of Ethiopia. The companies are "Cambridge Industries

---

34 Asnakew S, Shumet S, Ginbare W, et al, 'Prevalence of post-traumatic stress disorder and associated factors among Koshe landslide survivors, Addis Ababa, Ethiopia: a community-based, cross sectional study' 1(1) *BMJ Open*, 2019, 9.

35 Asnakew S, Shumet S, Ginbare W, et al, 'Prevalence of post-traumatic stress disorder and associated factors among Koshe landslide survivors, Addis Ababa, Ethiopia: a community-based, cross sectional study', 9.

36 World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

37 World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

Limited (Singapore), China National Electric Engineering, and Ramboll, a Danish engineering firm".[38] In 2019, the "African Plastic Recycling Alliance was launched by Coca-Cola Company, Diageo, Nestlé, and Unilever by the CEO's African forum. The aim was to transform the plastic recycling landscape across sub-Saharan Africa".[39] Since then, some African countries have started recycling plastic waste to respond to the 'throw-away' culture. Even though this has been embraced as an important waste management strategy, Zing et al have drawn attention to its shortfalls. They argue that recycling 'delays, rather than avoids, final disposal'. This is because even the recycled product may ultimately be disposed of because it degrades in quality and diminishes in quantity over time. This suggests that plastic cannot be recycled indefinitely and may eventually be discarded. Again, the authors believe that recycled items compete with the primary production on the market.[40] Not all countries have the means and infrastructure to embark on massive recycling to match the amount of waste produced. For instance, Boateng et al. quoted Chasant 2020, who believes that "Only up to 5% of the one million tonnes of plastic generated in Ghana every year are recycled".[41]

Moreover, single-use plastics have been banned in many African countries as part of managing plastic waste. Rwanda has been a success story in banning plastic bags and using single-use plastics. The government has encouraged locally produced materials as substitutes for imported plastic insulation.[42] In the same way, in 2017, Kenya also banned single-use plastic bags and imposed stringent penalties such as heavy fines and even imprisonment on offenders. The ban was effective for a while; however, since neighbouring countries such as Uganda and Tanzania still allow plastics, there has been transboundary illegal waste movement.[43] Plastic is a lucrative business, so it is not easy to ban it. As a result,

---

38 UN Environment, Ethiopia's waste-to-energy plant is a first in Africa, UN Environment news and stories, 24th November 2017 <https://www.unenvironment.org/news-and-stories/story/ethiopias-waste-energy-plant-frst-africa> on 16 January 2024.

39 Benson W, 'Companies Launch African Plastics Recycling Alliance' *SDG Knowledge Hub, Institute for Sustainable Development,* 2019, <https://sdg.iisd.org/news/companies-launch-african-plastics-recycling-alliance> on 3rd February 2024.

40 Zink, Trevor & Geyer, Roland, 'Material Recycling and the Myth of Landfill Diversion, *Journal of Industrial Ecology,* 2019, 23.<https://doi.org/10.1111/jiec.12808> on 16th January 2024.

41 Boateng J, Attiogbe E, Stahl A, Apoh W, Boadi C & Frimpong W, 'Using Africa's past to promote change toward safer alternatives for food packaging in Accra' 1(8) *Cogent Social Sciences*, 2022, 9.

42 Babayemi J, Nnorom I, Osibanjo O, and Weber R, ' Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, 17 <https://doi.org/10.1186/s12302-019-0254-5> on 22nd October 2024.

43 World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_EN-

a few years after the ban, single-use plastics have piled up at Dadach Boshe's dump. The adverse effect is that strong winds have been blowing these bags into ecosystems and the nearby farms, causing animal loss and destroying farmers' businesses. Animals, such as goats, have been suffering from the ingestion of plastic bags, which makes their stomach swell and eventually causes their death.[44]

VI. The need for a holistic perspective of responding to the crisis

Most African countries are ill-prepared for the explosion of plastic waste. Not only because of the financial implications accompanying it but also because the waste management system in most countries is not coping with the current plastic produced and the need to consume it. Several reasons have been attributed to this. For instance, it has been noted that:

> Despite consuming almost 3x less plastic than in high-income countries, the cost of plastic across its lifecycle is 8x higher in low and middle-income countries. Further, 93% of deaths linked to global plastic production occur in low and middle-income countries with limited environmental regulation and access to healthcare.[45]

This quotation suggests that until now, there have been no clear and specific rules and regulations to guide countries in eliminating plastic. This is a cause for concern, particularly looking at the harm that plastic is causing worldwide. A Norden report by Siran et al stated that:

> Without global action, the annual levels of mismanaged plastics would continue to rise and could almost double from 110 million tonnes (Mt onwards) in 2019 to 205 Mt by 2040, an 86% increase. Annual production of virgin plastics would increase from 430 Mt in 2019 to 712 Mt by 2040, a 66% increase. GHG emissions from the plastic system could further increase from 1.9 Giga tonnes of carbon dioxide equivalent (GtCO2e) per year in 2019 to 3.1 GtCO2e by 2040, an increase of 63%. This trajectory is incompatible with the goals of the Paris Climate Agreement. (2023: 9).

Given the foregoing, therefore, there is a need for policy intervention to reduce plastic and its waste and for management to align with the Paris

---

ABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

[44] Scovian L, 'The toughest plastic bag ban is failing: A tale of smugglers, dumps and dying goats' NPR, 2023, <https://www.npr.org/sections/goatsandsoda/2023/08/09/1190211814/the-toughest-plastic-bag-ban-is-failing-a-tale-of-smugglers-dumps-and-dying-goat> on 22nd October 2024.

[45] World Wildlife Fund, Who Pays For Plastic Pollution, 12th December 2023, 7 <https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

Agreement. Since the African reality seems to be slightly different from that of some Western countries, I will suggest that importing policies to be implemented in Africa will not be able to respond to the African story effectively, and there is a need for a response brewed in Africa that goes beyond formal law that has been imposed on Africa.

The Norden report has drawn our attention to the fact that:

> The plastic industry has not borne the cost of plastic externalities; on the contrary, it has benefited from public subsidies, for example, regarding oil exploration. In addition, adequate controls on how plastics are produced, used, and managed have been lacking, generating hazards to human health and biodiversity across the plastic lifecycle, contributing to climate change; impacting the informal sector and local communities, and resulting in the release of large volumes of mismanaged plastics into the environment (2023: 8).

Therefore, in global discussion, the dilemma of the abundance of plastic, its use, and its waste impact on the environment requires several stakeholders' voices, including that of Africans. This is because the hazardous effect affects everyone, not only those in the West. For this reason, the next section of this chapter proposes some lessons we can learn from the African indigenous approach to environmental management justice.

VII. Lessons from eco-communitarian responsibility

The menace of plastics has brought to light significant dimensions of our moral consciousness. Key among these is human greed manifested in the multi-national plastic plastic industries. The plastics producers know their products' environmental and human health risks but do not share them with the public in the name of commercially confidential information.[46] It is believed that "there is still a wide range of toxic chemicals used as plastic or polymer additives – for example, chemicals that have not yet been subject to international controls (such as many endocrine-disrupting chemicals) or recognized Persistent Organic Pollutants (POPs) which are allowed under exemptions".[47] However, because we are largely a capitalist society with the availability of market and profit, industries continue to produce them despite their harmful effects. The second is the moral challenge of ignorance. Society has overlooked the long-term health implications of plastics for both users and the environment. As an example of the ignorance of the effects, the same UNEP document says that:

[46] UNEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 27.

[47] NEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 27.

> Scientific studies have reviewed the migration of various chemical substances from plastic packaging materials during microwave and conventional heating, under various storage conditions. They found that there is unwanted migration and release of additives such as plasticisers (e.g. short-chained chlorinated paraffins (SCCPs) from PVC toys or shower curtains) or of flame retardants (e.g. from plastic casings of televisions or computers). Some of the migrating substances may be toxic.[48]

This confirms the hazardous toxicity of some plastics, which ordinary users may not be aware of. The third is disregarding the rules and regulations concerning plastic waste management in most African communities. It is common knowledge that the disregard results from a lack of awareness regarding human responsibilities towards current and future generations of the effects of plastic waste pollution. These ethical dilemmas make addressing the challenges that plastic waste poses almost impossible. Yet the visible and invisible impacts of plastic waste and the tragic loss of lives have forced these issues into the public spotlight. Despite this exposure, governments, policymakers, municipalities, and environmentalists struggle to navigate these moral intricacies effectively. As noted above, with the rate at which both plastic production and consumption are increasing the need for sustainable plastic waste management is compelling and arises from various critical factors and challenges the continent faces.

As noted above, the complexity of plastic waste requires a holistic global approach consisting of ideas and strategies not only from developed countries but developing countries as well. This chapter posits that looking at the current situation, Africa seems to have the following options:

- To refuse to respond to the menace and be consumed by the negative effect of plastic waste;
- Rely on strategies that have not responded effectively to the crisis sustainably; or
- Looking back into the past to find ideals and principles to inform our responses and create a sustainable holistic framework that could be included in any discussion on plastic waste.

Looking at the current situation, the last point is the plausible option because it is common knowledge for most Africans that whenever faced with issues that touch on morals, there have always been indigenous knowledge systems or experiences to fall on.

[48] UNEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 18.

So, for the current crisis that we are in, it may be prudent to look back to how the African indigenous societies managed nature for some ideals and principles—not forgetting that the indigenous African communities never had to deal with plastic waste and pollution. Though the indigenous people did not have to deal with plastic waste, some ideals and principles from how they managed nature can inform the current situation. This is where the African environmental justice theory, Eco-Communitarian Responsibility theory, becomes essential.

The proponents of this approach were Margaret Ssebunya, Stephen Nkansah Morgan, and Beatrice Okyere Manu (2019)[49] through a careful study of the African indigenous response to nature. Most indigenous communities believed that there is a mutual interdependence between human beings and nature and, as such, did not harm the environment. They instead revered and respected it, and as Tangwa puts it so well when writing on the African worldview and nature, he said, "since a human can conceivably transform or be transformed (with or without knowledge and consent) into any of the other ontological entities, in this life or in the life after death, no human being can confidently claim to know that he/she is not the 'brother/ sister' of any other things in existence".[50] The approach emphasizes the interconnectedness of humans and ecosystems and promotes shared responsibility for environmental well-being. The approach acknowledges that human communities are an integral part of the natural world, and therefore, we have a collective responsibility to protect and sustain the environment in which we live. It further asserts that "the environment is a public good whose resources should be enjoyed by everyone in the community regardless of gender, race, economic status, or even political affiliation. However, the consumption of these environmental resources should come with a collective duty of care".[51] The theory posits that collective responsibility towards the environment should start from the local community level with traditional leadership as gatekeepers. Being a communitarian society, the basis of their use and care for nature was their communal values such as "compassion, reciprocity, dignity, humanity, cooperation, harmony, relationality and communion in the interests of building and maintaining communities

[49] Ssebunya M, Morgan S, Okyere-Manu D, 'Environmental Justice: Towards an African Perspective' *The International Library of Environmental, Agricultural and Food Ethics,* 2019,2 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

[50] Tangwa B, 'Some African Reflections on Biomedical and Environmental Ethics' In K. Wiredu (Ed.) *A Companion to African philosophy Oxford: Blackwell publishers*, 2004, 387-395.

[51] Ssebunya M, Morgan S, Okyere-Manu D, 'Environmental Justice: Towards an African Perspective' *The International Library of Environmental, Agricultural and Food Ethics,* 2019,2 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

with justice and mutual care"[52] embedded in *Ubuntu*, which is articulated in the aphorism, "*Umuntu Ngumuntu Ngabantu*, and translated as a person is a person because of or through others".[53] In these societies, "communalism, collectivism and working with others as a team were essential components of the African communitarian society through which Africans ensured proper management of the environmental resources. For instance, every community member was responsible for ensuring that water sources, roads, and other public facilities were kept clean and unpolluted".[54] Therefore, "under no circumstances would one deliberately pollute the environment because this would be contrary to the African communitarian society's values. Such negative actions towards the environment would show a lack of care and concern for others".[55] In most instances, offenders were severely punished; sometimes, serious and deliberate offenses towards nature resulted in ostracism.

The search for sustainable plastic management, therefore, must encompass these key elements: First, our interconnectedness with nature. Contemporary African communities recognize this key ideal and do all that they can to maintain the relationship. For instance, Segun Ogungbemi says that:

> In our traditional relationship with nature, men and women recognize the importance of water, land, and air management. To our traditional communities, the ethics of not taking more than you need from nature is a moral code. Perhaps this explains why the earth, forests, rivers, wind, and other natural objects are traditionally believed to be both natural and divine. The philosophy behind this belief may not necessarily be religious but a natural means by which the human environment can be preserved. The ethics of care is essential to the traditional understanding of environmental protection and conservation (1997: 266).

Contemporary African societies must appreciate the interconnectedness with nature, knowing that misuse or abuse harms humanity.

Another critical principle that can inform our current situation is shared responsibility. This is where local communities can come together to actively address plastic waste.

---

52 Khoza R, 'Managing the Ubuntu way' 1(1) Enterprise *Magazine*, 1994, 4-9.

53 Shutte A, 'Philosophy for Africa' 1(1) *University of Cape Town Press*, 1993, 46.

54 Ssebunya M, Morgan S, Okyere-Manu D, 'Environmental Justice: Towards an African Perspective' *The International Library of Environmental, Agricultural and Food Ethics,* 2019, 186 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

55 Ssebunya M, Morgan S, Okyere-Manu D, 'Environmental Justice: Towards an African Perspective' *The International Library of Environmental, Agricultural and Food Ethics,* 2019, 185 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

The third principle is Community-Based Decision-Making; communities must meet regularly, educate, and decide how to respond to the current crisis. Such meetings must be led by community leadership. They must ensure their decision processes harmonize with their cultural values and traditions. Once a decision is made, offenders must be held accountable. As has been argued, current and future lives depend on the environment and everything in it; therefore, we are being challenged that our attitudes and actions must be redeemed and appropriated in a new way that will respect the dignity of the environment. Eco-Communitarian Responsibility promotes the idea that individuals are not solely responsible for safeguarding the environment. Instead, it encourages the collective effort of entire communities, fostering a shared responsibility for environmental stewardship. In the case of plastic pollution, our communal and shared responsibility will go a long way to responding effectively to the menace of plastic waste.

VIII. Conclusion

So far in this chapter, it is clear that plastic pollution poses a serious environmental threat in Africa because of its disproportionate effect. Although it produces and even consumes a comparatively small amount of plastic in other regions, the continent faces serious challenges in effectively managing plastic waste. The chapter highlighted that the current management strategies, including landfill, incineration, and recycling, are inadequate to address the growing problem. Therefore, drawing on the core principles of the Eco-communitarian Responsibility approach, which emphasizes interconnectedness, shared responsibility, and community-based decision-making, the chapter challenged Africans to redefine their moral duty toward plastic pollution.

The chapter has argued that by embracing principles from the indigenous knowledge systems, African countries can develop holistic and sustainable strategies for managing plastic waste. It further highlights the need for African governments, policymakers, and communities to work together to address this crisis by implementing stricter rules and regulations, promoting recycling and waste management initiatives, and educating the public about the negative environmental effects of plastic pollution. Finally, the chapter proposes that through collective action,individual and communal commitment to environmental stewardship, Africa can successfully tackle the plastic pollution menace and ensure a cleaner and healthier environment for current and future generations.

Social Norms and Pro-environmental Behaviour in Sub-Saharan African

*JohnBosco Chika Chukwuorji**
*Kehinde Aderemi Ojewumi***
*Charles Adedayo Ogunbode****

Abstract

Social norms are strongly associated with pro-environmental behaviour, and social norm-based intervention is a popular strategy for promoting environmentally friendly behaviour. Recent body of knowledge has distinguished two types of social norms: injunctive norms (what most people should do or ought to do) and descriptive norms (what most group members do). However, Africa researchers in sub-Saharan Africa have scarcely investigated the dynamic relations of injunctive norms and descriptive norms with pro-environmental behaviour. We examined the contributions of descriptive norms and injunctive norms to pro-environmental behaviour in the sub-Saharan African context. Data was obtained from 581 students at a public university in Nigeria. They provided socio-demographic information and completed measures of social norms regarding negative emotional responses to climate change and sustainable consumption behaviours. Results showed descriptive norms were not a significant predictor of pro-environmental behaviour, but injunctive norm increase in injunctive norms was associated with reductions in pro-environmental behaviour. We also found a suppression effect (change of the original relationship), such that by itself, descriptive norms did not substantially predict pro-environmental behaviour but the inclusion of injunctive norms in the analytic model increased its positive association with pro-environmental behaviour. Similar suppressor effects were also found for the inverse association between injunctive norms and pro-environmental behaviour. This idea of mutual suppression suggests that social policies

* PhD, Senior Lecturer & Clinical Psychologist, Department of Psychology, University of Nigeria (Nsukka, Nigeria); Postdoctoral Research Fellow, College of Human Medicine, Michigan State University (Flint, USA). johnbosco.chukwuorji@unn.edu.ng.

** PhD, Senior Lecturer, Department of Psychology, Obafemi Awolowo University (Ile-Ife, Nigeria).

*** PhD, Assistant Professor, School of Psychology, University of Nottingham, UK

that promote pro-environmental behaviour due to shifts in descriptive norms will foster development in injunctive norms. Acknowledging this mutuality is informative for normative theory and can facilitate the efficient application of social norms as a tool for environmental behaviour policy.

Keywords: Africa, climate change, environmental protection, normative theory, psychology, sustainability

I. Introduction

Humans have narrow-mindedly shaped the planet to suit their perceived needs and comfort without taking into consideration other species within the planet. This can be seen in the over-exploitation of the numerous natural resources that the planet is endowed with thereby impacting the effective performance of the ecosphere that supports environmental tasks being executed at several dimensions, the quality of the environment and healthiness in general.[1] The consequences are that the waste from this over exploitation litter pools, lakes, rivers, and landfills all over the world. Even the vast oceans are not spared from these dreadful acts. Unfortunately, there seems to be no end in sight as countries are paying lip service to long-term solutions and regrettably, environmental pollution which is one consequence of these actions is not a local problem restricted to a particular country but, its effects are felt all over the world. Africa is at the receiving end of the damage due to numerous factors: poverty, increased population and urbanisation, and lack of scientific development.[2]

Water pollution, air pollution, illegal mining, gas flaring, bad farming methods, poor waste management, desert encroachment and forest degradation because of fires and unregulated cutting that jeopardise biodiversity and result in climate change are all instances of human-caused environmental problems being experienced in most parts of Africa.[3] To the extent that it is

---

1 Alzubaidi H, 'Factors affecting consumers' pro-environmental behaviours in Saudi Arabia' in Dwivedi Y, Rana N, Slade E, Shareef M, Clement M, Simintiras A, Lal B (eds), *Emerging markets from a multidisciplinary perspective*, 2018, 303–314. Chung-Hall J, Craig L, Gravely S, Sansone N, Fong G, 'Impact of the WHO FCTC over the first decade: A global evidence reviews prepared for the Impact Assessment Expert Group' 28 *Tobacco Control*, 119–128. Miner J, Rampedi T, Ifegbesan P, Machete F, 'Survey on household awareness and willingness to participate in e-waste management in Jos, Plateau State, Nigeria' 12 *Sustainability*, 2020, 1047.

2 Mberu B, Mutua M., Kabaria C, Amugsi D, Muindi K, Levels of household exposure to solid waste dumpsites and associated loss to health in urban Kenya and Senegal, *6*(1), *Cities Health,* 2020, 168–179.

3 Hansmann R, Laurenti R, Mehdi T, Binder R, 'Determinants of pro-environmental behaviour: A comparison of university students and staff from diverse faculties at a Swiss University' 268 *Journal of Cleaner Production,* 2020, 121864.

accepted that environmental issues are linked to psychology,[4] it connotes that environmental problems have a direct relationship with human behaviour.[5],[6] If human behaviour becomes more pro-environmental, then, the likelihood that a more sustainable environment will be promoted is higher.[7] Due to enormous evidence that environmentally unfriendly human behaviour is the main source of environmentally harmful conditions afflicting the world, demanding healthier environmental behaviour as a way of reducing such destruction and attaining sustainable development is required.[8]

Pro-environmental behaviour is the engagement in actions that aid the environment, and the obliteration of pro-environmental behaviour is discerned from the personal choices people make as individuals or jointly with their group members to safeguard the environment and decrease the usage and damage of available natural deposits.[9] At the individual level, pro-environmental behaviour is noticeable from various environmental actions people take which comprises of waste recovery and recycling within households, cycling or trekking rather than making use of cars, keeping away from air transportation, and not making use of poly bags, and preservation of the numerous natural deposits.[10]

With the growth of public interest in understanding environmental behaviours, questions about factors that prompt acceptance of ecologically friendly behaviours have engaged the attention of researchers,[11] and this has translated into concern in understanding ways by which pro-environmental behaviour can

---

4 Kühn T, Bobeth S, 'Linking environmental psychology and critical social psychology: Theoretical considerations toward a comprehensive research agenda' 13 *Frontiers in Psycholo*gy, 2022.

5 Abun A, Aguot F, 'Measuring environmental attitude and environmental behaviour of senior high school students at Divine Word Colleges in Region I, Philippines' 1(2) International *Journal of Educational Research*, 2017, 33-69.

6 Thondhlana, G, Hlatshwayo N, 'Pro-environmental behaviour in student residences at Rhodes University, South Africa' 10 *Sustainability*, 2018, 2746.

7 Fernández D, López-Cabanas M, 'Ecología y psicología: Reflexiones desde Greenpeace [Ecology and psychology: Reflections from Greenpeace]' 380 *Guía de Psicólogo,* 2017, 3-6.

8 Akintunde A, 'Theories and concepts for human behaviour in environmental preservation' 1(2) *Journal of Environmental Science and Public Health*, 2017, 120-133.

9 Merino-Saum A, Baldi G, Gunderson I, Oberle B, 'Articulating natural resources and sustainable development goals through green economy indicators: A systematic analysis' 139 *Resources Conservation and Recycling*, 2018, 90–103.

10 Patel J, Modi A, Paul J, 'Pro-environmental behaviour and socio-demographic factors in an emerging market' 6 *Asian Journal of Business Ethics*, 2017, 189–214.

11 Casalo V, Escario J, 'Heterogeneity in the association between environmental attitudes and pro-environmental behaviour: A multilevel regression approach' 175 *Journal of Cleaner Production,* 2018, 155-163.

be triggered.[12] Subsequently, numerous studies have been conducted to elucidate environmental behaviours among different groups like students,[13] workers,[14] farmers[15] and consumers.[16] In fostering pro-environmental behaviour, studies have examined the associations between different factors that are central to pro-environmental behaviour and the net effect of this is the build-up of evidence to show the constructs, outcomes, and causes that lead to such behaviour.[17] In proper perspective, the various studies provide significant understandings of pro-environmental behaviour, however, they remain mainly narrow in their outlook, which then highlights the need for a more comprehensive investigation of pro-environmental behaviour research and its implication on strategies.

Higher educational institutions, being a principal part of a nation's development, are expected to play a critical role in the environmental sustainability of each country because they provide environmental education, skilled labour, and well-informed experts to tackle serious environmental issues that confront different countries.[18] As such, universities are expected to become role models in terms of environmental protection and practices for sustainable development.[19] University students are therefore expected to play an important role since they have acquired the technical knowledge critical for advancing the right pathways to foster environmentally friendly behaviour.[20] The systemat-

---

12 Gruber V, Schlegelmilch B, 'How techniques of neutralisation legitimise norm- and attitude-inconsistent consumer behaviour', 121 *Journal of Business Ethics*, 2014, 29–45.

13 Chen F, Chen H, Guo D, Long R, 'Analysis of undesired environmental behaviour among Chinese undergraduates' 162 *Journal of Cleaner Production,* 2017, 1239-1251.

14 Tian Q, Robertson L, 'How and when does perceived CSR affect employees' engagement in voluntary pro-environmental behaviour?' 155, *Journal of Business Ethics,* 2019, 399.

15 Wang Y, Liang J, Ma X, Li X, Yang G, Ren G, Feng Y, 'Analysis of the environmental behaviour of farmers for non-point source pollution control and management: an integration of the theory of planned behaviour and the protection motivation theory' *1*(237) *Journal of Environmental Management*, 2019, 15-23.

16 Akbari M, Fozouni Z, Pino G, & Maleksaeidi, H, 'An extended model of Theory of Planned Behavior to investigate highly educated Iranian consumers' intentions towards consuming genetically modified foods' 227 *Journal of Cleaner Production,* 2019, 784-793.

17 Wang, Q., Kou, Z., Sun, X., Wang, S., Wang, X., Jing, H., & Lin P 'Predictive analysis of the pro-environmental behaviour of college students using a decision-tree model' 19(15) *International Journal of Environmental Research and Public Health,* 2022, 9407.

18 Juma-Michilena J, Ruiz-Molina E, Gil-Saura I, & Belda-Miquel S, 'An analysis of the factors influencing pro-environmental behavioural intentions on climate change in the university community' 36(3) *Economic Research- Ekonomska Istraživanja*, 2023, 2264373.

19 Saraçli S, Boca D, 'Factors influencing students' environmental behaviour for sustainable development' 20(1) *Environmental Engineering and Management Journal,* 2021, 1–12.

20 Vicente-Molina A, Fernάndez-Sainz A, Izagirre-Olaizola J, 'Does gender make a difference in pro-environmental behaviour? The case of the Basque Country University students' 178 *Journal of Cleaner Production,* 2018, 89-98.

ic knowledge of what inspires students to act pro-environmentally is a vital domain of interest that has feasible application if the world is interested in moving in the direction of a sustainable future.[21]

A substantial number of current initiatives on sustainability are policies that emanate from the universities themselves, often involving "bottom-up" initiatives from faculty and students, informing decisions by policymakers.[22] According to Nuthall, at the recent UN Climate Change Conference (UNFCCC COP28), the Education Above All (EAA) Foundation, a Qatar-based organisation that promotes equal access to education and uses teaching and research to promote sustainability and positive environmental behaviour change, reported that they collaborated with the British Council to launch a project in Pakistan, whereby universities host sustainability clubs, based on a curriculum integrating a UN Development Programme climate change toolkit through which students have been able to get involved in underserved communities and practical tasks such as conservation and tree planting. In the end, this concept of partnership and collaboration empowers all stakeholders, not just the students.

Students, staff, and faculty at Strathmore University Nairobi– one of Africa's greenest universities, have also played important roles in the University's ground-breaking sustainability initiatives such as recycling, 'green' buildings, and energy conservation. The University has an environmental club which encourages staff and students to adopt sustainable behaviours. In addition to planting 1,000 trees around the campus, the club ran the 'Bring Your Own Bottle' social media campaign aimed at discouraging the use of plastics and organised a 'single use' sustainable awareness week to enlighten staff and students of the harmful effects of plastics use on human and environmental health.[23] Currently, 1,193 universities are part of the Race to Zero campaign - a global movement bringing non-state actors such as regions, cities, companies, and institutions together to take action to halve global emissions by 2030.[24] The African component is the African

---

21 Yu, T-Y., Yu, T-K., Chao C-M 'Understanding Taiwanese undergraduate students' pro-environmental behavioural intention towards green products in the fight against climate change' 161 *Journal of Cleaner Production,* 2017, 390-402.

22 Nuthall, K. (2023, December 9). *COP28 session pushes value of HE sustainability targets*' accessed on March 2, 2024 <https://www.universityworldnews.com/post.php?story=20231209033934921&utm_source=newsletter&utm_medium=email&utm_campaign=AFNL0433>

23 Ruwoko, E '*Strathmore University – One of the 'greenest' in Africa*' accessed on March 2, 2024 from https://www.universityworldnews.com/post.php?story=20231129102124392&utm_source=newsletter&utm_medium=email&utm_campaign=AFNL0433.

24 Ruwoko E '*More universities set net zero emissions targets – Report*' accessed on March 2, 2024 <https://www.universityworldnews.com/post.php?story=20231209062518536&utm_source=newsletter&utm_medium=email&utm_campaign=AFNL0433> accessed on March 2, 2024.

universities' race to net zero, which brings experts from various professional areas together to take action for sustainable energy initiatives. The present study aims to examine the role of social norms in pro-environmental behaviour among Nigerian students.

II. Social norms and pro-environmental behaviour

Social norm as a social factor is derived from the various cultural standards existing in a country and refer to the cultural rules that guide behaviour in a society.[25] They are rules and standards understood by group members and which guide and/or restrain behaviours without necessarily applying force of laws.[26] Generally, social norms are those customs or actions that are by and large generally acceptable or those things that are frowned upon in a particular society. Thøgersen suggested that norms are ingrained and internalised deep into a person's standards,[27] but they are different from personal norms which are rules or standards set or approved for one's own behaviour.[28] However, social norms are regarded as precursors of personal norms that are imbibed through proper internalisation.[29] Internalisation denotes a functional technique by which dispositions, views, or behavioural guidelines are acquired, takes in those standards, and renders them into private values or targets.[30]

Fundamentally, social norm as an intervention on pro-environmental behaviour is based on the human drive to pursue social consent and achieve socially beneficial information from other people's behaviours in a particular location.[31] Some of the social knowledge that is sought is related to what is needed to be sure that the public environment is spotlessly clean, keys suggesting that others are not littering the environment, or turning off lights and other electronic devices in public domains, signalling that people are generally key to

[25] Ross L, *Perspectives on social order*, New York: McGraw-Hill, 1973.

[26] Cialdini B, Trost R, 'Social influence: Social norms, conformity and compliance' in D.T. Gilbert, S.T. Fiske and G. Lindzey (Eds.), *The Handbook of social psychology* (4th ed.). 1-2, McGraw-Hill, 1998.

[27] Thøgersen, J 'Norms for environmentally responsible behaviour: An extended taxonomy' 26 *Journal of Environmental Psychology,* 2006, 247–261.

[28] Klöckner A. 'A comprehensive model of the psychology of environmental behaviour—A meta-analysis' 23 *Global Environmental Chang*e, 2013, 1028–1038.

[29] Lauper E, Moser S, Fischer M, Matthies E, 'Explaining car drivers' intention to prevent road-traffic noise: An application of the norm activation model' 48 *Environment and Behaviour,* 2016, 826–853.

[30] Deci L, Ryan M, 'Toward an organismic integration theory' in Deci L (ed) *Intrinsic motivation and self-determination in human behaviour*, Springer, Boston, 1985, 113–148.

[31] Cialdini B, Goldstein J, 'Social influence: Compliance and conformity' 55 *Annual Review of Psychology,* 2004, 591–621.

the preservation of energy.[32] Psychologically, the processes involved in social norm-based information target two essential goals: to seek social guidance[33] and know how to avoid social exclusion[34], meaning people will be inclined to adhere to social norms to secure social approval and/or avoid social sanctions.[35] Social norms are influential features that are known to elucidate and forecast a host of pro-environmental behaviours, such as recycling,[36],[37] water conservation,[38] green purchasing intention,[39] eco-friendly fabric buying behaviour,[40] energy conservation,[41] and pro-environmental behaviour in tourism.[42]

Although there is a burgeoning body of literature in psychology, economics and law supporting the association between social norms and pro-environmental behaviour,[43],[44],[45] some evidence show that different social norm-based interventions have different influences on the changes noticed in pro-environmental

---

32 Bator J, Tabanico J, Walton L, Schultz W, 'Promoting energy conservation with implied norms and explicit messages' 9(1) *Social Influence,* 2014, 69–82.

33 Fischer P, 'The bystander-effect: a meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies' 137(4) *Psychological Bulletin,* 2011, 517–537.

34 Eisenberger I, Lieberman D, Williams D, 'Does rejection hurt? An fMRI study of social exclusion' 302(5643) *Science,* 2003, 290–292.

35 Keizer K, Schultz W, 'Social norms and pro-environmental behaviour' in Steg, L, Judith M, de Groot I (eds.), *Environmental psychology: An introduction*, John Wiley & Sons, 2018, 179–188.

36 Huber J, Viscusi K, Bell J, 'Dynamic relationships between social norms and pro-environmental behaviour: Evidence from household recycling' 4 *Vanderbilt Law Research Paper,* 2017, 17–61.

37 Muniandy G, Anuar M 'Determinants of academicians recycling behaviour' 10(7) *Management Science Letters*, *10*(7), 2020, 1597–1606.

38 Jaeger M, Schultz W, 'Coupling social norms and commitments: Testing the under detected nature of social influence' 51 *Journal of Environmental Psychology,* 2017, 199–208.

39 Nguyen N, Lobo L, Greenland S, (2016). 'Pro-environmental purchase behaviour: The role of consumers' biospheric values' 33 *Journal of Retailing and Consumer Services,* 2016, 98-108.

40 Kim H, Seock K. 'The roles of values and social norms on personal norms and pro-environmentally friendly apparel product purchasing behaviour: The mediating role of personal norms'51 *Journal of Retailing and Consumer Services,* 2019, 83–90.

41 Schultz W, Nolan, M, Cialdini B, Goldstein J, Griskevicius V, The constructive, destructive, and reconstructive power of social norms: Reprise' *13 Perspectives in Psychological Science*, 2018, 249–254.

42 Han H 'Travellers' pro-environmental behaviour in a green lodging context: Converging value-belief-norm theory and the theory of planned behaviour' 47 *Tourism Management,* 2015, 164-177.

43 Goldstein J, Cialdini B, Griskevicius V, 'A room with a viewpoint: Using social norms to motivate environmental conservation in hotels' 35 *Journal of Consumer Research*, 2008, 472–482.

44 Perry W, Richardson J, Harré N, Hodges D, Lyver B, Maseyk F, Taylor R, Todd H, Tylianakis M, Yletyinen, M, Brower A, 'Evaluating the role of social norms in fostering pro-environmental behaviours' 9 *Frontiers in Environmental Science,* 2021, 620125.

45 Juma-Michilena J, Ruiz-Molina E, Gil-Saura I, & Belda-Miquel S, 'An analysis of the factors influencing pro-environmental behavioural intentions on climate change in the university community' 36(3) *Economic Research- Ekonomska Istraživanja*, 2023.

behaviour.[46] Perhaps, the different SN-based mediations are grounded on diverse social norm constructs. It should be noted that all norms are not the same and may not have the same impacts. There are two categories of social norms: injunctive (what people should do or ought to do) and descriptive norms (what people actually do).[47] Injunctive norms entail the behaviour commonly accepted or objected to, while descriptive norms are the behaviour shown by most group members.[48] For example, descriptive norms are the perception of others' level of and frequency of adopting single-use plastics use (the norms of "is") and are mostly based on observations of how people make use of such products. On the contrary, injunctive norms, are the perceived approval of single-use plastic products (the norms of "ought") and represent perceived behavioural rules of the social group.

According to Cialdini et al.'s focus theory of normative conduct, both descriptive norms and injunctive norms function using different motivational methods. Descriptive norms predominantly work as a mental inquisitiveness which isoften used as a signal for adjustive or functional behaviours, for example, by observation of others on how they behave while in public transportation.[49] On the contrary, the injunctive norms operate through expectations of social sanctions when other people disapprove of one's behaviour.[50] Descriptive norms favouring pro-environmental behaviour may be viewed as extrinsically motivated, thereby reducing the norm's normative influence, as conformity can be negatively affected by perceptions that others are conforming mindlessly.[51] Despite the distinctive nature of these two forms of norms, their dynamic effects on pro-environmental behaviour are less well understood.[52] Some studies in Western cultures have suggested that descriptive norms are more strongly

[46] Bergquist M, Nilsson A, Schultz P, 'A meta-analysis of field-experiments using social norms to promote pro-environmental behaviours' 59 *Global Environmental Change*, 2019.

[47] Thøgersen J, 'Norms for environmentally responsible behaviour: An extended taxonomy' 26 *Journal of Environmental Psychology,* 2006, 247–261.

[48] Cialdini B, Kallgren A, Reno R, 'A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behaviour' 24 *Advances in Experimental Social Psychology,* 1991, 201-234.

[49] Kormos C, Gifford R, Brown E, 'The influence of descriptive social norm information on sustainable transportation behaviour: a field experiment' 47(5), *Environment & Behaviour,* 2015, 479–501.

[50] Cialdini B, Goldstein J, 'Social influence: Compliance and conformity' 55 *Annual Review of Psychology,* 2004, 591–621.

[51] Ejelöv, E, Bergquist M, Hansla A, Nilsson A, 'Why are they eco-friendly? Attributing eco-friendly descriptive norms to intrinsic motivation increases pro-environmental purchase intention' 17(10) *PloS One*, 2022.

[52] Huber J, Viscusi K, Bell J, 'Dynamic relationship between social norms and pro-environmental behaviour' 4(1) *Behavioural Public Policy*, 2018, 1-25.

impactful on pro-environmental behaviour than injunctive norms[53],[54]. Meta-analysis and systematic reviews have shown that social norms appear to be less influential in collectivistic countries than in individualistic countries[55],[56], which underscores the need for more studies in collectivist cultures.

Both the prevailing social norm and people's sensitivity to social norms also vary among cultures,[57].[58] Evidence also abounds that social norm-based mediations have a more powerful influence in advancing pro-environmental behaviour in society that promotes independence compared to cultures where things are cooperatively done.[59] Under these circumstances, the ambiguous proof suggests that social norms exert influence on intentions less in cultures where things are done collectively when compared with individualistic cultures.[60] At the same time, the country-specific norms do impact the norms of friends, family, and neighbours, which sequentially impact their pro-environmental behaviour.[61] The association between both descriptive norms and injunctive norms with pro-environmental behaviour has not been given the required attention it deserves especially among students in the sub-Saharan African setting. Despite the substantial research examining pro-environmental behaviour from various approaches and different populations, research on university students'

---

53 Melnyk V, Herpen E, Jak S, Van T, 'The mechanisms of social norms' influence on consumer decision making: A meta-analysis' 227(1) *Zeitschrift* für *Psychologie*, 2019, 4–17.

54 Morren M, Grinstein A, 'The cross-cultural challenges of integrating personal norms into the theory of planned behaviour: a meta-analytic structural equation modelling (MASEM) approach' 75 *Journal of Environmental Psychology,* 2021, 101593.

55 Bergquist M, Nilsson A, Schultz P, 'A meta-analysis of field-experiments using social norms to promote pro-environmental behaviours' 59 *Global Environmental Change*, 2019.

56 Bergquist S, Schlegelmilch B, 'The impact of social norms on pro-environmental behaviour: A systematic literature review of the role of culture and self-construal' 13 *Sustainability*, 2021, 5156.

57 Constantino M, Sparkman G, Kraft-Todd T, Bicchieri C, Centola D, Shell-Duncan B, Vogt S, Weber U, 'Scaling up change: A critical review and practical guide to harnessing social norms for climate action' 23(2) *Psychological Science in the Public Interest,* 2022, 50–97.

58 Eriksson K, Strimling P, Gelfand M, Wu J, Abernathy J, Akotia S, Aldashev A, Andersson, A., Andrighetto, G., Anum, A., Arikan, G., Aycan, Z, Bagherian F, Barrera D, Basnight-Brown D, Batkeyev B, Belaus A, Berezina, E., Björnstjerna M, Blumen S, Van Lange M, ' Perceptions of the appropriate response to norm violation in 57 societies' 12(1) *Nature Communications*, 2021, 1481.

59 Bergquist M, Nilsson A, Schultz P, 'A meta-analysis of field-experiments using social norms to promote pro-environmental behaviours' 59 *Global Environmental Change*, 2019.

60 Morren M, Grinstein A, 'The cross-cultural challenges of integrating personal norms into the theory of planned behaviour: a meta-analytic structural equation modelling (MASEM) approach' 75 *Journal of Environmental Psychology,* 2021, 101593.

61 Culiberg, B, Elgaaied-Gambier L, 'Going green to fit in—Understanding the impact of social norms on pro-environmental behaviour, a cross-cultural approach' 40(2) *International Journal of Consumer Studies*, 179–185, 2016.

pro-environmental behaviour in general is still at its infancy level.[62] This is the gap thatthe current study hopes to fill. Based on the foregoing literature, we hypothesised that both descriptive norms and injunctive norms will be associated with increased pro-environmental behaviour among Nigerian students.

III. Method

i. Participants and procedure

Participants in this study were 580 students (294 women and 286 males) drawn from two universities located in southern Nigeria – Ebonyi State University Abakaliki in Ebonyi state and Obafemi Awolowo University, Ile-Ife in Osun state, Nigeria. Respondents were recruited using convenient sampling techniques. They were approached by trained research assistants (RAs) during normal class time in the last quarter of 2019. The RAs assured all the participants that their responses would be treated with utmost confidence and no respondent would be identified in person, thereby assuring them of the confidentiality of their responses. The questionnaire was administered in paper-and-pencil format. Only students who willingly consented to participate in the study received the survey and no reward was offered to participants. The DeMontfort University Health and Life Sciences Faculty Research Ethics Committee (FREC; ref.: 3434) where one of the authors was a faculty member at the time granted the ethical clearance for the study.

ii. Measures

We measured descriptive norms and injunctive norms about negative emotional responsesto climate change with eight items.[63] There were four items for descriptive norms (Most people close to me express feelings of distress when talking about climate change; Most people close to me are worried about the future effects of climate change; Most people close to me think that one should be concerned about climate change; Most people close to me expect others to

[62] Correia, E., Sousa, S., Viseu, C., & Leite, J. (2021). Using the theory of planned behaviour to understand the students' pro-environmental behaviour: A case-study in a Portuguese HEI. *International Journal of Sustainability in Higher Education*, 23(5), 1070-1089.

[63] Ogunbode C, Doran R, Hanss D, Ojala M, Salmela-Aro K., van den Broek K, Bhullar N, Aquino D, Marot T, Schermer A, Wlodarczyk A, Lu S, Jiang F, Maran A, Yadav R, Ardi R, Chegeni, R., Ghanbarian, E., Zand, S., Najafi, R., Park, J., Tsubakita, T, Tan, S, Chukwuorji C,& Karasu, M. 'Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries' *Journal of Environmental Psychology*, 2022, 101887.

be worried about a future affected by climate change). Injunctive norms also had four items (Most people my age sound worried if talking about the future impacts of climate change; Most people my age seem anxious when expressing their views on climate change; Most people my age expect others to be concerned about climate change; Most people my age think one should be worried about the consequences of climate change). Responses are made using a 5-point Likert scale as follows: strongly disagree (1), disagree (2), neither disagree nor agree (3), agree (4), and strongly agree (5). Scores on the items of each dimension were added to obtain a total indicator of the form particular of social norms. For the current research, the reliability coefficient of the descriptive norms and injunctive norms measure were Cronbach's alpha (α) of 0.73 and 0.75. The values surpassed the conventional reliability threshold ($\alpha = 0.70$).[64]

We assessed pro-environmental behaviour with an 8-item measure of sustainable consumption behaviours.[65] The items of the questionnaire were as follows: try to influence family and friends to act pro-environmentally; cycle or walk instead of driving; restrain oneself from buying unneeded new clothes; save energy in the household; choose not to fly; take public transportation instead of the car; avoid food waste; and make climate-friendly food choices. Participants were asked to indicate how often they engage in each behaviour on a 5-point scale of 1 (almost never), 2 (seldom), 3 (sometimes), 4 (often), and 5 (almost always). Acceptable reliability value ($\alpha = 0.72$) in the Nigerian sample was reported for the pro-environmental behaviour measure in our previous study.[66]

iii. Data analyses

We conducted a survey to obtain our data using a cross-sectional design. Frequencies and percentages were used for the item level analysis of responses to pro-environmental behaviour questions. We used Pearson's correlations to examine the relationships of age, gender, social norms, and pro-environmental

---

64 Nunnally, J.C. (1970). *Introduction to psychological measurement*. New York: McGraw-Hill.

65 Ogunbode C, Doran R, Hanss D, Ojala M, Salmela-Aro K., van den Broek K, Bhullar N, Aquino D, Marot T, Schermer A, Wlodarczyk A, Lu S, Jiang F, Maran A, Yadav R, Ardi R, Chegeni, R., Ghanbarian, E., Zand, S., Najafi, R., Park, J., Tsubakita, T, Tan, S, Chukwuorji C,& Karasu, M. 'Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries' *Journal of Environmental Psychology*, 2022, 101887.

66 Ogunbode C, Doran R, Hanss D, Ojala M, Salmela-Aro K., van den Broek K, Bhullar N, Aquino D, Marot T, Schermer A, Wlodarczyk A, Lu S, Jiang F, Maran A, Yadav R, Ardi R, Chegeni, R., Ghanbarian, E., Zand, S., Najafi, R., Park, J., Tsubakita, T, Tan, S, Chukwuorji C,& Karasu, M. 'Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries' *Journal of Environmental Psychology*, 2022, 101887.

behaviour. For the test of the hypothesis, we conducted a hierarchical multiple regression using the stepwise method. With multiple regression analysis, we were able to simultaneously add the two forms of social norms in separate steps as predictors (independent variables) in the regression model while pro-environmental behaviour was the outcome (dependent variable). Thus, we were able to do a better job explaining the variation in the pro-environmental behaviour on account of each form of social norms. This ability to make more accurate predictions is a major advantage of hierarchical multiple regression.[67] The significance of all the results was tested at the probability level of .05.

iv. Results

The age of the participants ranged from 18-58 years, with an average age of 25.21 (*SD* = 7.93) years.

Table 1: Participants' responses to items for assessing descriptive norms.

	Almost never	Seldom	Some-times	Often	Almost always
Cycle or walk instead of driving or being driven in a car	18.1%	16.5%	45.6%	14.3%	5.5%
Restrain myself from buying new clothes that I don't need	14.3%	12.7%	32.5%	26.0%	14.5%
Choose not to fly	42.2%	14.8%	18.1%	10.3%	14.7%
Try to influence my family and friends to act in a climate-friendly way	15.5%	18.2%	35.6%	16.2%	14.5%
Save energy in the household	7.9%	12.7%	37.7%	23.6%	18.1%
Take public transportation instead of the car	15.1%	13.1%	30.5%	21.3%	20.0%
Avoid food waste	9.2%	7.2%	22.4%	27.2%	33.9%
Make climate-friendly food choices	14.1%	15.0%	33.7%	21.9%	15.3%

In Table 1, the majority of the participants cycle or walk instead of driving or being driven in a car sometimes, often, or almost always. Similarly, a very substantial number restrain themselves from buying new clothes that they don't need. However, not up to half of the respondents would choose not to fly. The majority of them reported that they try to influence their family and friends to

[67] Mendenhall W, Beaver J, Beaver M, '*Introduction to probability and statistics*' (13ed) Belmont, Brooks/ Cole, 2009.

act in a climate-friendly way sometimes, often, or almost always. In the same vein, they would also save energy in the household and take public transport instead of the car, make climate-friendly food choices, and avoid food waste.

Results of our Pearson's correlations also showed that older students had higher scores in descriptive norms ($r = 0.09$, $p<.05$), but the relationship of age with injunctive norms ($r = 0.05$) and pro-environmental behaviour ($r = -.01$) were not significant. The relationship of gender with descriptive norms ($r = 0.04$) injunctive norms ($r = -.07$) and pro-environmental behaviour ($r = -.02$) were not significant. Those with higher scores in descriptive norms reported higher injunctive norms ($r = .67$, $p<.001$).

Table 2: Hierarchical multiple regression predicting pro-environmental behaviour by descriptive norms and injunctive norms.

Predictors	**Step 1**				**Step 2**	
	B	β	t	B	β	t
Descriptive norms	0.06	0.04	0.94	0.18	0.12	2.02*
Injunctive norms				-0.19	-0.11	-1.98*
R^2	0.01			0.02		
ΔR^2	0.01			0.01		
F	0.89(1, 579)			2.40(2, 578)		
ΔF	0.89(1, 579)			3.91(1, 132)**		

*$p < .05$; **$p < .05$; $\Delta R2$ = Change in $R2$; ΔF = Change in F

The results of the hierarchical multiple regression for testing the hypotheses are shown in Table 2. Descriptive norms were added in the first step of the regression model. It was not a significant predictor of pro-environmental behaviour, β = 0.04, and the model was not significant, $F(1, 579) = 0.70$. In step 2 of the regression model, an injunctive norm was added, and it was a significant negative predictor of pro-environmental behaviour, β = -0.11, $p<.05$. Thus, an increase in injunctive norms was associated with reductions in pro-environmental behaviour. The model was significant, F Change $(1, 578) = 4.09$, $p<.05$. However, we obtained a suppression effect in the regression model. Suppressors are variables that when added to a regression model, change the original relationship between an independent variable and the outcome by making it stronger, weaker, or no longer significant—or even reversing the direction of the relationship (i.e., changing a positive relationship into a negative one) (Guinn, 2019). Essentially, suppression effects are seen in cases where the inclusion of a second predictor

increases the predictive power of one or both predictors (Watson et al., 2013). In our case of this suppression effect, the relationship between descriptive norms and pro-environmental behaviour was strengthened (enhanced) by the inclusion of injunctive norms in the same model. Thus, in the second step of the regression, students with higher descriptive norms reported increased pro-environmental behaviour.

We repeated another regression model in which we added injunctive norms at first and then descriptive norms in the second step of the regression. We obtained a similar suppression effect for the inverse association between injunctive norms and pro-environmental behaviour. Specifically, our finding represents what Watson et al. (2013) called cooperative or reciprocal suppression involving cases in which injunctive and descriptive norms (the predictors or independent variables) correlate oppositely with pro-environmental behaviour (the outcome or dependent variable) but are positively associated with one another; and in this case, including both predictors in the regression equation increases both of their beta weights. Due to the similarity of both results, we did not report the values of this second regression because it would be a repetition of what we had already shown.

v. Discussion

Our study aimed to examine the contributions of descriptive norms and injunctive norms in the pro-environmental behaviour of a sub-Saharan African student sample in Nigeria. We first evaluated the responses of the students to the items of the measure of pro-environmental behaviour. Although a reasonable percentage of the participants cycle or walk instead of driving or being driven in a car and restrain themselves from buying new clothes that they don't need, not up to half of the respondents would choose not to fly. As the respondents in the present study are students, it is possible that many of them have not travelled in an aeroplane. To such people, the thrill of boarding a flight is something they would cherish and so it might be unacceptable to them if one says they should not fly to protect the environment. Efforts to encourage environmentally friendly might be more fruitful for behaviours that do not engage in for the thrill of it. For example, most of the students are already used to travelling in cars on the road. It is therefore not surprising that they admitted that they would cycle or walk instead of driving or being driven in a car.

We expected that descriptive norms and injunctive norms would be associated with increased pro-environmental behaviour among Nigerian students. Our results showed that students who had higher descriptive norms

reported increased pro-environmental behaviour. This finding is in line with our earlier hypothesis which stated that descriptive norms would be associated with increased pro-environmental behaviour among Nigerian students. The finding also supports past research indicating that social norms are linked with pro-environmental behaviour,[68].[69] People are more inclined to behave in a pro-environmental way when they see that other reference groups or individuals around them are also doing the same.

Similarly, we found that injunctive norms were significantly associated with pro-environmental behaviour. However, unlike the positive association between descriptive norms and pro-environmental behaviour, there was a negative association. Those that other people approve or disapprove of was associated with less pro-environmental behaviour. This finding is consistent with the results of some studies in Western cultures that descriptive norms more robustly impact pro-environmental behaviour than injunctive norms,[70].[71]. This finding implies that fostering pro-environmental behaviour is most likely to be effective if it targets norms that are based on what people do. It has been observed that rules or standards set or approved for one's behaviour are acquired through internalisation. Theoretically, internalisation functions partly by means of expected pride or guilt, that is, how one feels about a particular issue of interest. Hence, social norms-based interventions that trigger such feelings have been reported to be more effective in promoting PEB.[72]

A fundamental area of interest in the development of social norms is its motivational roots.[73] The pro-environmental behaviour motivation may either arise intrinsically or extrinsically, but there is a certain proposition that presenting the motivation to engage in pro-environmental behaviour as intrinsically driven

---

[68] Huber J, Viscusi K, Bell J, 'Dynamic relationship between social norms and pro-environmental behaviour' 4(1) *Behavioural Public Policy*, 2018, 1-25.

[69] Jaeger M, Schultz W, 'Coupling social norms and commitments: Testing the under detected nature of social influence' 51 *Journal of Environmental Psychology,* 2017, 199–208.

[70] Melnyk V, Herpen E, Jak S, Van T, 'The mechanisms of social norms' influence on consumer decision making: A meta-analysis' 227(1) *Zeitschrift* für *Psychologie*, 2019, 4–17.

[71] Morren M, Grinstein A, 'The cross-cultural challenges of integrating personal norms into the theory of planned behaviour: a meta-analytic structural equation modelling (MASEM) approach' 75 *Journal of Environmental Psychology,* 2021, 101593.

[72] Bergquist M, Nilsson A, Schultz P, 'A meta-analysis of field-experiments using social norms to promote pro-environmental behaviours' 59 *Global Environmental Change*, 2019.

[73] Ejelöv, E, Bergquist M, Hansla A, Nilsson A, 'Why are they eco-friendly? Attributing eco-friendly descriptive norms to intrinsic motivation increases pro-environmental purchase intention' 17(10) *PloS One*, 2022.

can increase the descriptive norm's influence.[74] While the assumed motivational basis for injunctive norms is to get social approval and avoid social disapproval, we should not expect people to comply with a generalised descriptive standard unless they believe that other people are likewise genuinely motivated to do the new behaviour, as it has been observed that the intrinsic motivation of others is crucial for peoples' conformity to the given norm.[75] When additional external incentives are already in place to motivate pro-environmental behaviour, it may be especially important to emphasise the intrinsic motivation of other people. Generally, interventions to foster pro-environmental behaviour are more likely to be effective if they target those norms that are more likely to arise from the internal beliefs of individuals (e.g., pollution is dangerous to my health). We suggest that such interventions that are based on the intrinsic motivation of students to engage in environmentally sustainable behaviours should be given more attention.

Although the findings of our study have potentially important implications for interventions to promote environmentally friendly behaviours, some notable limitations of the study must be considered. First, our study was cross-sectional in nature, and we obtained the data using self-report measures. The nature of the data does not permit any definitive conclusions about causal relations. Perhaps, behaving in a more environmentally protective way may lead to greater existence of more social norms for such behaviour in those settings. We note, however, that research and theory typically view social norms as a precursor of pro-environmental behaviours. Second, our sample was drawn from two universities in Southern Nigeria which limits the generalizability of our findings to student populations that share characteristics with the current sample. We might have had voluntary response bias (only those individuals willingly agreed to participate in the study received the survey form), self-selection bias (students choose whether or not to participate in the survey) or non-response bias (differences between those that participated and those who did not agree to participate). Hence, we cannot truly speak to the representativeness of the sample. Third, the data was also collected retrospectively as the respondents were required to report information about their past behaviours. This type of data is more likely to be influenced by recall bias. Our findings need to be replicated in a prospective design

[74] Ejelöv, E, Bergquist M, Hansla A, Nilsson A, 'Why are they eco-friendly? Attributing eco-friendly descriptive norms to intrinsic motivation increases pro-environmental purchase intention' 17(10) *PloS One*, 2022.

[75] Pronin E, Berger J, Molouki S, 'Alone in a crowd of sheep: asymmetric perceptions of conformity and their roots in an introspection illusion' 92(4) *Journal of Personality & Social Psychology,* 2007, 585–595.

with a larger, more representative sample of students and use of longitudinal design to establish temporal occurrence of the connections that exist between social norms and pro-environmental behaviour. Fourth, the *R* square (*R*2) values which showed the proportion of variance in pro-environmental behaviour explained by both injunctive and descriptive norms in the regression model were small. Hence, the predictors did not effectively explain the variation in the pro-environmental behaviour. Future research needs to consider other proximate and distal factors that potentially contribute to pro-environmental behaviour. Fifth, we were unable to examine the mediators and moderators of the association between social norms and pro-environmental behaviour. Moderators would have helped us to clarify the conditions or situations under which social norms are most likely to influence pro-environmental behaviour, while mediation would help to delineate the pathways through which social norms influence pro-environmental behaviour. Future research should consider this direction in different cultural contexts or with different demographic groups to advance the field of pro-environmental behaviour. Although we did not measure a specific pro-environmental behaviour, there is a consensus that the effects of social norms hold for a variety of pro-environmental behaviours. However, future research should see if these associations hold with specific behaviours such as plastic use.

IV. Conclusion

This study has yielded important preliminary evidence for the association between social norms (descriptive norms and injunctive norms) and pro-environmental behaviour in a sample of sub-Saharan African students. We view our results as insightful and promising, both theoretically and practically, because the model in which injunctive norms were included enhanced the positive association between descriptive norms and pro-environmental behaviour to become more robust. Interventions that target descriptive norms among students in the sub-Saharan African region may substantially increase their engagement in pro-environmental behaviours. Specifically, incorporating interventions designed to decrease injunctive norms and increase descriptive norms among students into such programs could be most beneficial.

The Role of Indigenous and Traditional Knowledge in Combatting Plastic Pollution

*Patricia Kameri-Mbote**

*Macharia Kaguru***

Abstract

Plastic pollution is wreaking havoc in our societies, altering social, economic, cultural and environmental lives. The ubiquity of plastics and its low acquisition costs makes plastics permeate into every sector of our lives, a feature that presents difficulties in eradicating the crisis. From disrupting kinship systems to indigenous and local communities' lifestyles, reversing plastic pollution requires a whole of society approach tapping into all knowledge types and systems that may provide the required solutions. This paper underscores the critical role of indigenous and local communities and their knowledge systems in combating plastic pollution. It argues that indigenous and local communities must be included in the discourses on addressing plastic pollution as they are custodians of valuable indigenous and traditional knowledge critical for combatting plastic pollution. Taking cue from the increasing recognition of the role of indigenous and traditional knowledge in environmental conservation, the paper argues that the integration of indigenous and traditional knowledge with emerging scientific methodologies provides profound insights in the search for pathways to a plastic-free planet.

Keywords: Plastic pollution, indigenous and traditional knowledge, integration, custodians, environmental governance

* SJD, Director, Law Division, United Nations Environment Program (UNEP), (Nairobi, Kenya). patricia.mbote@un.org.

** LL.M, Teaching Fellow, Strathmore University Law School, Environmental Law and Policy Specialist, Law Division, United Nations Environment Program (UNEP), (Nairobi, Kenya).

I. Introduction

> Circular economy is not a modern innovation; it is Indigenous intellectual property embedded in the lifestyles of First Peoples globally for millennia. Our response to human impacts is based on holistic restorative and regenerative principles, aiming to protect our environments and the health of future generations. It is imperative that the definition and practice of Circular Economy be led and safeguarded by the Indigenous Peoples Caucus, recognizing us as the original practitioners and custodians of this wisdom.[1]

Plastic pollution is a complex, relational and trans-sectoral global problem with profound social, economic, cultural and environmental repercussions.[2] It is characterized by pervasiveness and ubiquity, transcending borders and impacting even the most remote ecosystems.[3] Plastics have a 3.4% carbon footprint,[4] and are increasingly becoming a health emergency with notable plastic deposits found in the food chains and in the human blood stream and brain.[5] Of the plastic waste produced annually, only 9% is recycled, 70% ends up in landfills or the environment[6] and 80% of the marine pollution emanates from plastics.[7] Concerned by this worrying trend, the United Nations Environmental Assembly (UNEA) in 2022 resolved to develop a legally binding treaty to address plastic pollution, including in the marine environment.[8] Among the issues to be considered in developing the instrument, discussed at five sessions of the Intergovernmental Negotiating Committee (INC) with the 5th one held in Busan in November 2024, is traditional knowledge, knowledge of indigenous peoples and local knowledge systems. The incorporation of these systems in a multilateral environmental

---

1 Lee J, 'An Indigenous Perspective is Essential for a Strong Global Plastic Treaty', 16 November 2023 — <https://www.greenpeace.org/aotearoa/story/an-indigenous-perspective-is-essential-for-a-strong-global-plastics-treaty/#:~:text='The%20Indigenous%20Peoples'%20Caucus%20(IPC,knowledge%20to%20use%20without%20us. > on 26 November 2024

2 Fuller S, Ngata T, Borrelle S and Farrelly T 'Plastics pollution as waste colonialism in Te Moananui' 29(1) *Journal of Political Ecology*, 2022, 534-560.

3 Bergmann M, Collard F, Fabres J, Gabrielsen G, Provencher J, Rochman C, van Sebille, E. and Tekman M, 'Plastic pollution in the Arctic' 3(5) *Nature Reviews Earth & Environment* 2022, 323-337; Peng X, Chen M, Chen, S, Dasgupta, S, Xu H, Ta K, Du M, Li J, Guo, Z, and Bai S, 2018. Microplastics contaminate the deepest part of the world's ocean. 9(1) Geochemical Perspectives Letters, 2018, 1-5.

4 OECD, *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options*, 2022,

5 Campen M, Nihart A, Garcia M, Liu R, Olewine M, Castillo E, Bleske B, Scott J, Howard T, Gonzalez-Estrella J, and Adolphi N, 2024. Bioaccumulation of Microplastics in Decedent Human Brains Assessed by Pyrolysis Gas Chromatography-Mass Spectrometry. Research Square.

6 OECD, *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options*, 2022.

7 UNESCO, 'Ocean Plastic Pollution An Overview: Data and Statistics' UNESCO – < https://oceanliteracy.unesco.org/plastic-pollution-ocean/> on 28 November 2024.

8 UNEA, *End Plastic Pollution: Towards an International Legally Binding Instrument*, Decision 5/14, UNEP/EA.5/Res.14 (March 2022).

agreement represents an increasing appreciation of the importance of these alternative knowledge and rules systems in environmental governance and the recognition of the limitation of state backed legal rules in innovating, providing solutions and regulating human interaction with the environment.

Indigenous and local communities stand at the forefront of efforts to combat plastic pollution, serving as indispensable stakeholders whose unique knowledge, lived experiences, and sustainable practices are vital to crafting effective and equitable solutions. Firstly, although indigenous and local communities contribute minimally to plastic production and consumption, they disproportionately bear the brunt of its harmful impacts.[9] Secondly, these communities maintain a deep connection with nature, having developed sustainable practices rooted in harmony with their environment, a much needed paradigm shift in rescuing the planet from environmental degradation.[10] Lastly, as custodians of nature, evidence shows that areas managed by indigenous peoples and local communities experience lower and slower rates of rise in pollution and biodiversity loss compared to other regions, making them a fertile ground for learning and exchange of knowledge.[11] Thus, any initiative aimed at addressing plastic pollution must recognize these communities as equal partners and leverage on their vast indigenous and traditional knowledge.

This paper is divided into four parts. Part I explores the nature of plastic pollution and its impact on indigenous and local communities positioning them as essential stakeholders in reversing this global crisis. Part II discusses the interaction between indigenous peoples and plastic pollution. It illuminates the disruptive nature of plastic pollution, spanning from impacts on social interactions to the loss of identity of the indigenous and local communities. Part III examines the increasing legal recognition of indigenous and traditional knowledge in addressing environmental challenges, offering a powerful alternative to state-backed legal frameworks and mainstream sciences. It argues that this recognition is not merely about inclusion, but about valuing and integrating indigenous knowledge systems alongside mainstream scientific approaches, creating a dynamic synergy. Part IV identifies the strategic entry points for these knowledge systems in tackling plastic pollution, advocating for a shift in how legal rules and policies are framed

[9] Hatfield S, 'Plastic suffocation: Climate change threatens indigenous populations and traditional ecological knowledge' 8(2) Journal of Marine and Island Cultures, 2019, 1; UNEP, Neglected: Environmental Justice Impacts of Marine Litter and Plastic Pollution, 7 April 2021.

[10] Forest Peoples Programme, Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures. A complement to the fifth edition of the Global Biodiversity Outlook.

[11] Forest Peoples Programme, Local Biodiversity Outlooks 2.

to embrace these invaluable perspectives. Through this lens, the paper calls for a transformative approach that amplifies the role of indigenous and traditional knowledge and its holders in crafting effective, sustainable solutions to plastic pollution.

II. Plastic pollution and indigenous and local communities: disruption of lifestyles and identity

Plastics have revolutionized human life and have in many ways positively impacted living conditions.[12] From healthcare, energy conservation, material preservation,[13] construction, fashion, transportation to agriculture, plastics have emerged as essential materials for human development.[14] Plastic is cheap, making it easy to integrate them into our daily lives. Plastics are also ubiquitous making them one of the greatest global environmental challenges.[15] Despite their beneficial uses, the irrational production, irresponsible use, insufficient recycling and unethical disposal of plastics is affecting the oceans, waterways, natural ecosystems, aquatic life and possess great health risks.[16] The Arctic and oceans have turned into plastic dumpsites and "plastic soup[s]".[17] Plastic clogs in urban areas cause flooding and disease breeding.[18] Accounting for nearly half of the global waste, UNEP estimates that the annual plastic pollution's social and environment costs is a conservative $600 billion while other estimates indicate $ 1.5 trillion.[19] Without a deliberate effort to reverse this trend, plastic pollution will have devastating impacts on people and the environment.

[12] Thompson RC, Moore C, Vom Saal, F, and Swan, S, 2009. 'Plastics, the environment and human health: current consensus and future trends' 364(1526) *Philosophical transactions of the royal society B: biological sciences*, 2009, 2153-2166.

[13] Andrady A, and Neal, M, 'Applications and societal benefits of plastics' 364(1526) *Philosophical Transactions of the Royal Society B: Biological Sciences*, 2009, 1977-1984.

[14] UNEP, Single-Use Plastics: A Roadmap for Sustainability (Rev. ed.), 2018, vi, 6; Rodrigues MO, Abrantes N, Gonçalves FJM, Nogueira H, Marques JC and Gonçalves AM, 'Impacts of plastic products used in daily life on the environment and human health: What is known?' 72 Environmental Toxicology and Pharmacology, 2019, 103239.

[15] UNEP, Single-Use Plastics, 6.

[16] Bidashimwa D, Hoke T, Huynh TB, Narkpitaks N, Priyonugroho K, Ha TT, Burns A and Weissman A, 'Plastic pollution: How can the global health community fight the growing problem?' 8 BMJ Global Health, Suppl 3, 2023, e012140.

[17] UNEP, Single-Use Plastics, 6.

[18] UNEP, Single-Use Plastics, 6.

[19] UNEP, Turning off the Tap: How the World Can End Plastic Pollution and Create a Circular Economy, 2023. Beaumont NJ, Aanesen M, Austen MC, Börger T, Clark JR, Cole M, Hooper T, Lindeque PK, Pascoe C and Wyles KJ, 'Global ecological, social and economic impacts of marine plastic' 142 *Marine Pollution Bulletin*, 2019, 189-195.

It is well settled that indigenous and local communities are in many ways on the frontlines of environmental pollution.[20] They have close connection and relationship with nature and are heavily dependent on it for their livelihoods. In turn, their social, cultural, economic and political lives are intricately connected to nature and this relationship also dictates their rules of engagement with the environment.[21] They are often marginalized, poor and live in vulnerable geographical areas and ecosystems, presenting a unique combination of threats.[22] These unique characteristics puts their survival, knowledge systems, health, social and cultural way of life directly threatened by environmental degradation.[23]

Plastic pollution is already having a devastating impact on indigenous and local communities. In a study on the impact of plastic suffocation on traditional knowledge, Samantha notes that indigenous peoples' "culture and sovereignty lifeways" are negatively impacted.[24] She notes that indigenous peoples had observed and noted impacts of climate change, to which plastic pollution is inextricably linked, long before academic scientists documented these impacts. This knowledge, she notes is now under threat of extinction as indigenous peoples' adapt their lives to the new environmental realities. Whyte states that plastic pollution "disrupt[s] the ability of communities [indigenous communities] to maintain kinship and obligations to land, food, and nonhumans" resulting, in turn, of the challenging of Indigenous communities to "maintain 'collective continuance".[25] McGregor in yet another study observes that the plastic pollution is not only about nature, but has a spiritual, cultural disruption effect including on the indigenous peoples responsibility to protect the environment thus "First Nations are not simply concerned about water [quality], but have specific responsibilities to protect water. Aboriginal peoples' responsibilities and obligations to water extend to all of Creation, the spirit world, the ancestors and those yet to come; and all must be considered when contemplating actions that will affect water".[26]

---

[20] UNEP, 'Indigenous Peoples and the Nature They Protect' —<https://www.unep.org/news-and-stories/story/indigenous-peoples-and-nature-they-protect#:~:text=Due%20to%20their%20subsistence%20economies,biodiversity%2C%20food%20and%20water%20security.> on 28 November 2024.

[21] UN,

[22] ILO (International Labour Office), Indigenous Peoples and Climate Change: From Victims to Change Agents Through Decent Work, 2017.

[23] UNEP, 'Indigenous Peoples and the Nature They Protect'.

[24] Hatfield SC, 'Plastic suffocation: Climate change threatens indigenous populations and traditional ecological knowledge' 8(2) *Journal of Marine and Island Cultures*, 2019, 1.

[25] Liboiron M and Cotter R, 'Review of participation of Indigenous peoples in plastics pollution governance' 1 *Cambridge Prisms: Plastics*, 2023, e16.

[26] Liboiron and Cotter, 'Review of participation of Indigenous peoples in plastics pollution governance', e16.

Plastic pollution disruptions are not limited to social life. Ngata, for instance, highlights the contaminating effect of plastics on wild food relied on by indigenous communities noting that it affects food sovereignty. It not only impacts access to traditional food but also the disruption of "complex set of relationships and obligations to families, the community, non-humans, land, language, and the food itself."[27] Further, by disrupting fishing by these communities, they have abandoned their culture associate with fishing.[28] Similar impacts are observed among the Badjao people of Philippines whose seafaring activities have been impacted, disrupting their economic, historical and cultural connection with the oceans.[29]

Indigenous people see plastic pollution as disruptive of their identity. For instance, a Māori researcher describes the problem among the Māori thus "when I re-indigenize the framing of plastic pollution, it leads me to understanding plastic as a disruptor of *whakapapa* (genealogical relationships)".[30] It is also taken to be a disruptor of *mahinga kai* (natural food systems) and *maanaki* (hosting) visitors.[31] The conceptualization of plastic pollution in this holistic understanding of environment, which is prevalent in most indigenous communities points to possible violations of the rights of indigenous peoples under the United Nations Declaration on the Rights of Indigenous Peoples[32] and the commitments of the world.

Plastics' disruption of indigenous and local communities' way of life presents a grave threat to their existence. The impacts of plastic on the environment based on science, adaptations and policy responses are intertwined with indigenous and local communities' systems. Therefore, in developing solutions, these communities are critical stakeholders whose traditional knowledge systems may present indigenous led solutions that are not currently known or used.

---

27 Liboiron and Cotter, 'Review of participation of Indigenous peoples in plastics pollution governance', e16.

28 Liboiron and Cotter, 'Review of participation of Indigenous peoples in plastics pollution governance', e16.

29 Ledesma M, 'The Scourge of Plastics on Indigenous People' —<https://www.greenpeace.org/philippines/press/60973/the-scourge-of-plastic-on-indigenous-people/> on 16 November 2024.

30 Ngata T and Liboiron M, 'A Māori approach to starting research from where you are' 7(2) *Catalyst: Feminism, Theory, Technoscience*, 2021.

31 Ngata T and Liboiron M, 'A Māori approach to starting research from where you are'.

32 UNGA, United Nations declaration on the rights of indigenous peoples, UN, Washington, 2007, 12.

III. Legal protection and recognition indigenous and traditional knowledge in environmental protection

The terms "indigenous" and "traditional" knowledge while widely used have no universally accepted definition.[33] For this paper, we use the term 'indigenous knowledge' to mean the "knowledge that is held and used by a people who identify themselves as indigenous of a place based on combination of cultural distinctiveness and prior territorial occupancy" while traditional knowledge means "knowledge held by members of a distinct culture and/or sometimes acquired by means of inquiry peculiar to that culture, and concerning the culture itself or the local environment in which it exists".[34] Collectively, the term 'indigenous knowledge' is taken to mean the knowledge, practices, values and institutions of the indigenous and local communities in the utilization, conservation, and restoration of nature.

Indigenous communities live in harmony with nature, deeply relying on the environment for their sustenance, cultural practices, and way of life. Thus, the indigenous peoples' laws, social norms, customs and practices draw from and reflect a close connection with nature and their conservation efforts form part of an inherent responsibility to protect nature, which is intricately woven into their existence and that of the future generations.[35] These practices and knowledge systems are socialized into the lives of members of the distinctive communities, accumulated over time, passed down across generations and enforced through socially agreed methods. They are majorly "derived from natural resource use – some practices and beliefs acquire the force of law".[36] Although various practices encourage adherence, rarely do they hold formal legal authority and are enforced by community institutions and may have attendant sanctions.[37] Strong belief in

---

33 Mugabe J, Kameri-Mbote P and Mutta D, Traditional knowledge, genetic resources and intellectual property protection: towards a new international regime, International Environmental Law Research Centre, Geneva, 2001.

34 Mugabe J, Kameri-Mbote P and Mutta D, Traditional knowledge, genetic resources and intellectual property protection, 2001.

35 OHCHR, Leaflet No. 10: Indigenous Peoples and the Environment — <https://www.ohchr.org/Documents/Publications/GuideIPleaflet10en.pdf> on 28 November 2024.

36 IIED, Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices — <https://www.iied.org/sites/default/files/pdfs/migrate/14591IIED.pdf> on 20 November 2024.

37 IIED, Protecting Community Rights over Traditional Knowledge — <https://www.iied.org/sites/default/files/pdfs/migrate/14591IIED.pdf>.

supernatural powers often underpins compliance, with many customary and conservation practices driven by fear of these powers.[38]

The protection and recognition of indigenous and traditional knowledge systems have been hard-fought victories, achieved through relentless advocacy against the sweeping forces of modernity and the related persistent drive to assimilate them.[39] However, these efforts have born fruits overtime, especially in environmental protection where they have been increasingly recognized, protected and co-opted into the mainstream scientific knowledge.

Within the United Nations system, the first attempt to recognize and protect indigenous knowledge systems was in 1923 when Haudenosaunee's, Chief Deskaheh sought to address the League of Nations to defend his people's right to maintain their own lands and lifestyles.[40] A similar effort was made by T.W. Ratana, religious leader of the Maori people to protest breach of the 1840 Treaty of Waitangi.[41] While both of these attempts were unsuccessful, they sowed the seeds for the ultimate recognition and protection of the indigenous people and their knowledge systems. The remainder of this section highlights some international initiatives and agreements that have recognized and protected indigenous and traditional knowledge systems.

a) Our common future, Brutland Commission Report

The World Commission on Environment and Development, popularly known as Brundtland Commission, was appointed in 1983 to explore issues relating to sustainability, the environment and development.[42] In its report, the Brundtland Commission noted the isolation of indigenous peoples from development. However, this isolation, the Commission noted had preserved their "traditional way of life in close harmony with the natural environment"[43] that their "very survival has depended on their ecological awareness and adaptation"[44]

---

38 IIED, Protecting Community Rights over Traditional Knowledge —<https://www.iied.org/sites/default/files/pdfs/migrate/14591IIED.pdf>.

39 Mugabe J, Kameri-Mbote P and Mutta D, Traditional knowledge, genetic resources and intellectual property protection, 2001

40 UNEP, 'Indigenous Peoples and the Nature They Protect'.

41 UNEP, 'Indigenous Peoples and the Nature They Protect'.

42 Manulak MW, 'The Brundtland Commission and the Seeds of Change' in Change in Global Environmental Politics: Temporal Focal Points and the Reform of International Institutions, Cambridge University Press, 2022, 139-175.

43 WCED, Our common future: Report of the World Commission on Environment and Development, G.H. Brundtland (ed), Oxford University Press, Oxford, 1987.

44 WCED, Our common future, 1987.

and these "communities are the repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins."[45] In addition, "these groups' own institutions to regulate rights and obligations are crucial for maintaining harmony with nature and the environmental awareness characteristic of the traditional way of life."[46] The report warned that the disappearance of indigenous communities would be a lost opportunity for society to learn the 'traditional skills in sustainably managing very complex ecological systems'.[47]

b) Rio declaration on environment and development

The acknowledgement in Brundtland Commission above paved way for the initial stages of inclusion of indigenous and traditional knowledge systems into multilateral environmental agreements. The Earth Summit of 1992 adopted the Rio Declaration on Environment and Development.[48] Principle 22 of Rio Declaration provides that the "indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices." The declaration requires states to recognize, support and enable the indigenous peoples to effectively participate in the achievement of sustainable development. In the same conference, the indigenous communities converged as the World Conference of Indigenous Peoples on Territory, Environment and Development and adopted the Kari-oca Declaration which among other things asserted their connection to the environment and their responsibility to pass nature on to future generations.[49]

c) Convention on biological diversity

The Convention Biological Diversity[50] (CBD) was also adopted at the Earth Summit in 1992. The Convention recognizes the critical role of indigenous and traditional knowledge in conservation of biodiversity. Article 8(j) of the CBD requires states, subject to their national laws and as far as possible, respect, preserve

---

45 WCED, Our common future, 1987.

46 WCED, Our common future, 1987.

47 WCED, Our common future, 1987.

48 UNGA, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26 (Vol. I)

49 World Conference of Indigenous Peoples on Territory, Environment and Development, Declaration of Kari-oca — <https://www.forestpeoples.org/sites/default/files/documents/Declaration%20of%20KariOca%201992.pdf> on 28 November 2024.

50 UN, Convention on Biological Diversity, Treaty Collection, 1992.

and maintain the knowledge, innovations, and practices of indigenous and local communities that align with conserving and sustainably using biodiversity. This should be done with the consent and participation of the knowledge holders and aim to encourage its broader application.[51] States should also encourage and develop cooperation including on indigenous and technologies (indigenous and traditional knowledge technologies) and exchange in the training of personnel and experts for the conservation of biodiversity.

In order to implement the provisions related to indigenous knowledge and systems under the CBD, the conference of parties in 2000 adopted the Programme of Work on Traditional Knowledge and the Working Group to consider and develop Article 8(j) of the Convention with a mandate lasting for 20 years. This institutionalization of indigenous peoples into the CBD saw an increased participation and influence of indigenous and traditional knowledge with the following critical programmes being implemented: establishment of the International Indigenous Forum for Diversity,[52] Plan of Action for the retention of Traditional Knowledge, innovations and practices,[53] the creation of the Voluntary Fund for Indigenous Peoples to finance their participation in the CBD activities,[54] and development of various guidelines.

Upon expiry of the working group tenure in 2020, the International Indigenous Forum for Diversity and the parties to the CBD underscored the importance of creating a permanent body to advise on Article 8(j) requirements. This transition was inspired by the desire to have a permanently recognized body and provide international support including resources to the indigenous peoples and their knowledge systems. After years of negotiations, 2024 marked a historic milestone for indigenous peoples and local communities as the parties took a groundbreaking decision. In a landmark move, they recognized the critical need for the full and effective participation of these communities and established a permanent Subsidiary Body on Article 8(j) and Related Provisions.[55] This decision stands as a powerful testament to the global acknowledgment of the invaluable role indigenous peoples and local communities play in biodiversity conservation and represents a transformative step toward inclusive, equitable, and sustainable environmental governance. The subsidiary body is mandated to

51 UN, Convention on Biological Diversity, 1992.

52 UNEP, Decision adopted by the COP in its 8th meeting: Mechanisms to promote the effective participation of indigenous and local communities in matters related to the objectives of Article 8(j) and related provisions, UNEP/CBD/COP/3/38.

53 UNEP, Decision adopted by the COP in its 8th meeting, UNEP/CBD/COP/3/38.

54 UNEP, Decision adopted by the COP in its 8th meeting, UNEP/CBD/COP/3/38.

55 UNEP, Decision adopted by the COP in its 8th meeting, UNEP/CBD/COP/3/38.

advise the parties to the CBD on matters related to indigenous peoples and local communities. Additionally, it may provide advice to other subsidiary bodies and the Meetings of Parties (MOPs) of the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit-Sharing, upon request.[56]

d) UNESCO universal declaration on cultural diversity

The UNESCO Universal Declaration on Cultural Diversity recognizes that cultural diversity is a source of exchange, innovation and creativity and is as necessary for humankind as biodiversity is for nature.[57] In its Policy on Engaging with Indigenous Peoples, UNESCO acknowledges that inclusion of indigenous peoples in scientific endeavor is beneficial to the sciences and could enhance the understanding of the global environmental problems.[58] In addition, the policy states that acknowledging and valuing diverse knowledge systems can provide fresh perspectives for advancements in science, technology, engineering, water management, and sustainable development.[59] Through the policy, UNESCO seeks to foster collaboration between indigenous communities and scientists to address global challenges, including environmental, cultural, economic, and societal issues,[60] and advocates for integration of indigenous knowledge with scientific methods in disaster risk reduction, and the development of context-specific strategies and policies.[61] It also promotes the use of indigenous knowledge, innovations and practices-based climate change mitigation and adaptation solutions,[62] and the inclusion of indigenous ocean and marine knowledge in science-based approaches to sustainably manage ecosystems and protect marine resources, ensuring indigenous perspectives are integral to global sustainability efforts.[63]

---

56 UNEP, Decision of the COP: Institutional arrangements for the full and effective participation of indigenous peoples and local communities in the work undertaken under the Convention on Biological Diversity, CBD/COP/DEC/16/5 (Preamble).

57 UNESCO, *Universal Declaration on Cultural Diversity*, 2001

58 UNESCO *Policy on Engaging with Indigenous Peoples* (202 EX/9; 202 EX/50).

59 UNESCO, Policy on Engaging with Indigenous Peoples (202 EX/9; 202 EX/50), para. 32.

60 UNESCO *Policy on Engaging with Indigenous Peoples* (202 EX/9; 202 EX/50), para 34.

61 UNESCO *Policy on Engaging with Indigenous Peoples* (202 EX/9; 202 EX/50), para 30.

62 *UNESCO Policy on Engaging with Indigenous Peoples* (202 EX/9; 202 EX/50), para 46.

63 UNESCO *Policy on Engaging with Indigenous Peoples* (202 EX/9; 202 EX/50), para 56

e) United Nations Declaration on the Rights of Indigenous Peoples

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[64] was adopted in 2007 and provides a comprehensive set of rights and minimum standards for the survival and well-being of the indigenous peoples. It affirms the contribution of all peoples to the diversity and richness of civilizations and cultures that constitute the common heritage. The declaration also recognizes that respect for the indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and environmental stewardship.[65] It guarantees among others the right to health, including traditional medicines and to maintain health practices including conservation of vital medical plants, animals and minerals,[66] maintain and strengthen their distinctive spiritual relationship with their and to uphold their responsibilities to future generations,[67] and to conserve and protect the environment.[68] It additionally provides for the right to maintain and control traditional knowledge and manifest the sciences and technologies including protection through intellectual property regimes. These rights protects both the acquisition, passing down and manifestation of these knowledge systems, including in providing solutions to environmental degradation.

f) The Paris Agreement and the United Nations Framework Convention on Climate Change

The Paris Agreement and the United Nations Framework Convention on Climate Change acknowledge the importance of indigenous, local and traditional knowledge systems in combatting negative impacts of climate change. Under the Paris Agreement, adaptation should be based on and guided by the best available science and as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems.[69] The Intergovernmental Panel on Climate Change's (IPCC) Working Group II Sixth Assessment Report noted that these

64 UNGA, United Nations Declaration on the Rights of Indigenous Peoples, General Assembly Resolution A/RES/61/295.

65 UNGA, United Nations Declaration on the Rights of Indigenous Peoples, General Assembly Resolution A/RES/61/295, the Preamble.

66 UNGA, United Nations Declaration on the Rights of Indigenous Peoples, General Assembly Resolution A/RES/61/295, art 24.

67 UNGA, United Nations Declaration on the Rights of Indigenous Peoples, General Assembly Resolution A/RES/61/295, art 25.

68 UNGA, United Nations Declaration on the Rights of Indigenous Peoples, General Assembly Resolution A/RES/61/295, art 29.

69 Article 7, Paris Agreement, 12 December 2015, 3156 UN.

knowledge systems are "useful climate change information, observations and solutions" in catalyzing climate adaptation.[70]

In order to strengthen the traditional knowledge, indigenous peoples' and local knowledge systems in climate change responses, the parties to UNFCCC have established the Local Communities and Indigenous Peoples Platform.[71] This platform has three important mandates: promote the exchange of experiences and best practices to apply, strengthen, and protect traditional, indigenous, and local knowledge systems, technologies, and practices for addressing climate change; ensure the free, prior, and informed consent of knowledge holders; and enhance the capacity of indigenous peoples and local communities to engage in the UNFCCC process.[72] This platform provides an important voice for the co-knowledge development, use and protection of indigenous knowledge systems in climate change responses.

g) African Convention on the Conservation of Nature and Natural Resources

The Convention is a comprehensive African Union instrument for environmental protection, conservation and sustainable use of natural resources. Article 4 of the Convention requires state parties to have due regard for ethical and traditional values as well as scientific knowledge in the interests of present and future generations.[73] In preserving vegetation cover, the Convention requires member states to adopt among others the sound traditional conservation.[74] The Convention also envisages the utility of indigenous knowledge in environmental protection and requires protection, recognition and prior informed consent in accessing indigenous knowledge and to active involvement of these communities in environmental planning and resources management.[75]

---

[70] IPCC, Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H-O Pörtner, DC Roberts, M Tignor, ES Poloczanska, K Mintenbeck, A Alegría, M Craig, S Langsdorf, S Löschke, V Möller, A Okem, B Rama (eds)], Cambridge University Press, Cambridge, UK and New York, NY, USA, 2022, 3056 pp., doi:10.1017/9781009325844.

[71] UNFCCC, Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015, FCCC/CP/2015/10/Add.1; UNFCCC, Report of the Conference of the Parties on its twenty-third session, held in Bonn from 6 to 18 November 2017, FCCC/CP/2017/11/Add.1, Decision 2/CP.23.

[72] UNFCCC, Report of COP23, FCCC/CP/2017/11/Add.1, Decision 2/CP.23.

[73] Article 4, *African Convention on the Conservation of Nature and Natural Resources*, 15 September 1968.

[74] Article 8, *African Convention on the Conservation of Nature and Natural Resources*, 15 September 1968.

[75] Article 17, *African Convention on the Conservation of Nature and Natural Resources*, 15 September 1968.

Indigenous and local community systems have played an important role in environmental protection. While initially sidelined, the world has now realized their importance and are increasing protecting these knowledge systems and incorporating them in environmental protection. In plastic pollution, these knowledge systems are critical, in not only understanding the impacts of plastic pollution but also providing important solutions.

IV. Entry point for indigenous and traditional knowledge in plastic pollution: lessons from other Multilateral Environmental Agreements

(i) Citizen science initiatives

Indigenous and local sciences and epistemologies have increasingly been co-opted in ecological sciences as sources of knowledge to complement the mainstream sciences.[76] This co-option spans from beliefs, practices and values of harmonious living with nature, impacts of human activities to the environment as well as in-depth understanding of nature's functioning, pollution status and unique adaptation solutions. Incorporation of indigenous knowledge systems into mainstream sciences not only recognizes these knowledge systems as legitimate sources of knowledge but also allows scientific solutions that integrates the cultural, social and economic lives, providing an important buy-in for scientific solutions.

The inclusion of citizen science in plastic pollution provides enormous benefits. Firstly, indigenous and traditional knowledge systems provide first-hand experience in sustainable environmental management and impacts of plastic pollution. Secondly, over-reliance on non-indigenous and non-traditional knowledge may well exclude and limit plastic science and policy actions essential to combatting plastic pollution. Thirdly, engagement with community science allows alternative thinking in building up the body of knowledge on understanding plastic pollution, providing solutions and its impacts. These contributions are invaluable.

In biodiversity for instance, in addition to institutionalization of indigenous and traditional knowledge, the United Nations Environmental Programme among other UN organizations have long encouraged and recognized indigenous and traditional knowledge systems through promotion of diversity, sustained

[76] Forest Peoples Programme, Local Biodiversity Outlooks 2.

interaction with the sciences.[77] Indigenous knowledge systems present a new pathway for achieving long-term holistic solutions. For instance, among the Jalai Daya of Indonesia, an ideal life envisages sustainability, collectivity, naturality (organic), spirituality and holistic processes as opposed to results. Failure to achieve this ideal life is taken to be a *barau* (instance where nature is not functioning properly), representing a broken relationship with nature.[78] Tapping into these knowledge systems requires participatory research and greater appreciation and inclusion of indigenous knowledge as complementary to scientific knowledge.

(ii) Sustainable plastic management

A cardinal characteristic of most indigenous and local peoples is their relationship with nature. They imbue holistic approaches to the meaning, function and services of nature to human beings, of which they have a good understanding.[79] In addition, these approaches place a higher responsibility in human beings to protect and conserve nature with spiritual, economic, cultural and social justifications. This understanding of nature not only guides the indigenous and local communities but is also manifested in their epistemologies, ontologies, values, challenges, needs, and worldviews through which life is understood. With increasing costs of enforcing sustainable solutions, tapping into these socialization of human life and environment provides a great opportunity for environmental conservation.

Indigenous and local communities are on the frontline of plastic pollution, actively experiencing its impacts and providing innovative solutions to combat it. For instance the *igorot* practice of *ayyew* (not wasting anything) -an indigenous concept that encourages waste re-use and recycling provides an important solution that efforts to reverse plastic pollution could benefit from.[80] This principle, deeply embedded in the traditional lifestyles and practices, underscores the importance of sustainable consumption. The community has recycled waste for generations including using it for making indigenous baskets such as *pasiking*.[81] This example

---

77 Forest Peoples Programme, Local Biodiversity Outlooks 2.

78 Forest Peoples Programme, Local Biodiversity Outlooks 2.

79 Lee J, 'An Indigenous Perspective is Essential for a Strong Global Plastic Treaty' — <https://www.greenpeace.org/aotearoa/story/an-indigenous-perspective-is-essential-for-a-strong-global-plastics-treaty>

80 Ledesma M, 'The Scourge of Plastics on Indigenous People' — <https://www.greenpeace.org/philippines/press/60973/the-scourge-of-plastic-on-indigenous-people/ >.

81 BESNet, Addressing Plastic Pollution while Harnessing Traditions in the Philippines — <https://www.besnet.world/addressing-plastic-pollution-while-harnessing-traditions-in-the-philippines/> on 2 December 2024

provides an opportunity to leapfrog from indigenous and local communities' knowledge and practices to reverse plastic pollution.

(iii) Alternative solutions

In addition to sustainable practices, indigenous and traditional knowledge systems may provide alternatives to plastics, effectively phasing them out. Reducing or replacing plastics with environmentally friendly indigenous alternatives not only maintains the integrity of the environment for the indigenous communities but also recognizes these systems as equal partners in providing environmental solutions. For instance, use of indigenous plants to replace plastics is now widely accepted among some communities instead of single-plastic bags and scientific research on these alternatives are ongoing.[82] With the prior, informed consent of indigenous communities, these alternatives complement efforts to combat plastic pollution. *Bilums*- used to make alternative packaging bags in Vanuatu, the packaging of *taumafautaga* using *ma'ilo* among the Samoa people and the use of *waka* in collection of marine microplastics among the *Māori* presents viable alternatives to combat plastic pollution.

V. Conclusion

Reversing plastic pollution requires a collective, global effort. It calls for marshalling of the efforts of everybody and rallying all knowledge systems. While governments are taking steps to address plastic pollution, indigenous and traditional people and their knowledge systems offer crucial complementary and alternative solutions. These systems, deeply embedded in the cultural practices of indigenous and local communities, can be integrated into mainstream efforts to create a self-sustaining and self-enforcing framework, significantly reducing implementation and enforcement costs. Leveraging these knowledge systems provides a powerful catalyst for combating plastic pollution effectively.

[82] Khan SM, Haq ZU, Khalid N, Ahmad Z and Ejaz U, 'Utilization of three indigenous plant species as alternative to plastic can reduce pollution and bring sustainability in the environment' in Natural Resources Conservation and Advances for Sustainability, Elsevier, 2022, 533-544.

Spinning the Yarn: Exploring the Potential of Narratives Framed by Children and the Youth in Shaping Ethics, Beliefs and Value Systems for Plastics Governance in Africa

*Amelia Midwa**

Abstract

It is now widely acknowledged that formal law is limited. This is particularly in contexts where: 1) the law permits the coexistence of different legal orders, and 2) there exist juridical norms that have a greater appeal compared to the formal norms. This limitation of formal law has especially been evidenced in the modern and democratised era of international environmental law and policy. For this reason, interest has been sparked regarding other informal norms, such as ethics and belief and value systems, that can be leveraged in environmental governance. Furthermore, the limitation has raised questions about the actors that will participate in the formulation of these informal norms. Based on the foregoing, this study seeks to investigate the role children, and the youth can play in shaping ethics, beliefs and customs for plastic governance in Africa. Employing the Narrative Policy Framework, the study makes the argument that children and the youth in Africa have the capacity to frame persuasive narratives which could mould ethics, beliefs and customs to the advantage of plastic governance in Africa.

Keywords: Children, informal law, narratives, Africa, environmental governance, plastic pollution

* LL.B, Research Fellow, ILINA Program (Nairobi, Kenya)

I. Introduction

The idea of divergence between 'the rules that purport to govern the relations of man and those that in fact govern him' is not novel. Jurisprudential scholars have conceptualised and framed this dichotomy in different ways over time; Roscoe Pound with his law-in-books vis a vis law-in-action[1] and Ehrlich with his law-in-books vis a vis living-law.[2] Pound's and Ehrlich's dichotomies are underscored by other scholars from the historical and anthropological schools of thought. These scholars stressed that any study of law is incomplete without reference to the society within which it emanates. This is based on the understanding that law is an expression of a society's peculiar culture, values and norms.[3]

The 'law in books' can be understood to be formal law. It emanates from the state and is formulated by the different legislative bodies.[4] Notably, the law in books is not the only ordering force in society. 'Living law,' which can be referred to as informal law, cannot be ignored.[5] Though expressed and enforced in different ways, it is just as influential as the formal law.[6] Echoing Kameri-Mbote, colouring norms as formal or informal may change the way these norms are perceived, but not their influence in society.[7]

---

1 Roscoe Pound found issue with the legal gap that existed between the 'law in books' vis a vis 'the law in action.' Law in books here referred to the legal writing, old established principles and regulatory statutes found in lawyers' books, while 'law in action' referred to the law administered by the courts. According to Pound, it was the latter that preserved 'an appearance of life in legal theory.' See Puaschunder J, 'Behavioural international law: Law-in-books vs. law-in-action resembling the neoclassical economics vs. behavioural economics debate' 28th Research Association for Interdisciplinary Studies Conference, Washington, 26-27 June 2022, 30; Halperin J, 'Law in books and law in action: The problem of legal change' 64(1) *Maine Law Review*, 2011, 46; Pound R, 'Law in books and law in action' 44(12) *American Law Review*, 1910, 16-22.

2 Ehrlich's legal philosophy presented the 'law in books'- 'living law' dichotomy, stressing that the core of legal development lies in society itself, not legislation or judicial decision. Based on this, his formulation of law in books not only included statutory enactments but also the law in casebooks. Living law was perceived to exist outside the law in books and accurately reflect the interactions of man and man. See Singh S, 'Eugen Ehrlich's 'Living Law' and its Legacy for Legal Pluralism' Social Science Research Network, 2010, 3; O'Day J, 'Ehrlich's living law revisited- further vindication for a prophet without honour' 18(1) *Case Western Reserve Law Review*, 1966, 213.

3 Wacks R, *Understanding jurisprudence: An introduction to legal theory*, 6ed, Oxford University Press, Oxford, 2021, 196.

4 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, University of Nairobi School of Law, Nairobi, 2021, 12.

5 Halperin J, 'Law in books and law in action: The power of legal change', 52.

6 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 12.

7 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 12.

It is under the umbrella of informal law that ethics, beliefs and value systems, in addition to the notorious customary and religious norms fall.[8] These informal laws emerge from social practice and acquire legitimacy over time, specifying the acceptable behaviour in the social contexts from which they are formulated.[9] Adherence to these informal laws is not based on coercion but on fear of disapproval, censure, shaming, loss of face, reputation or consequences beyond life.[10] This has been largely expounded on in Moore's work, which developed the idea of semi-autonomous social fields. These semi-autonomous social fields are defined by their normgenerating and complianceinducing capacities.[11]

Due to the existence of these informal laws, and their often-understated influence in society, the effectiveness of formal law is limited. Space is created for people to adhere to other norms/laws that they believe are better suited for them.[12] Formal law is particularly limited where: 1) there is more than one legal order in a social field and 2) there exist legal orders that have a greater appeal than the formal one. In such instances, formal law can be pushed aside (whether legally or illegally) to give way to the informal laws.[13] This is the context in which the calls for 'beyond formal law' are situated.

This limitation of formal law is particularly witnessed in the realm of international environmental law, policy and governance, which is 'undergoing a complex transition from youth to middle age.'[14] The international environmental regime is becoming increasingly democratised, untraditional, multi-layered and deformalized, with non-state actors such as NGOs, corporate bodies, citizens and indigenous communities becoming more relevant and influential.[15] This paradigm shift can be attributed to the growth of environmental governance,[16]

---

8 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 15.

9 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 125.

10 Ambani J and Ahaya O, 'The wretched African traditionalist in Kenya: The challenges and prospects of customary law in the new constitutional order' 1(1) *Strathmore Law Journal*, 2015, 43.

11 Moore S, 'Law and social change: The semi-autonomous social field as an appropriate subject of study' 7(4) *Law and Society Review*, 1973, 722.

12 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 12.

13 Kameri- Mbote P, *Contending norms in a plural legal system: The limits of formal law*, 5.

14 Bodansky D and Asselt H, *The art and craft of international environmental law*, 1st ed, Harvard University Press, Cambridge, 2010, 35.

15 Cassotta S, The development of environmental law within a changing environmental governance context: Towards a new paradigm shift in the Anthropocene era' 30(1) *Yearbook of International Environmental Law*, 2019, 60.

16 Environmental governance refers to the sum total of rules, practices, policies and institutions that shape how individuals interact with their environment. See Cassotta S, The development of environmental law within a changing environmental governance context', 59-60.

coupled with the transboundary status environmental concerns are beginning to acquire.[17] Environmental law itself is simply playing catch up, with environmental governance being much broader than the law.[18] This change justifies the need to investigate the strength of other informal norms that could be just as (if not more) influential and effective than formal norms.[19]

In this non-state centric, pluralistic and modern era of environmental law, for the purposes of effectiveness, all actors that impact the environment should be taken into consideration in shaping the informal norms that have started to play a more important role in environmental governance. This includes children and the youth, who are persons that fall below the age of 24 years.[20]

Unlike any other demographic, children and the youth have notable concerns and responsibilities towards the environment given that: 1) they are the most vulnerable and 2) they will inherit the consequences of current actions or inactions.[21]

This translates to the area of plastics pollution, particularly in Africa, where the continued unregulated dumping of single use plastics has created a variety of public health challenges for children and the youth. These range from water-borne diseases, harmful gases generated from plastic incineration and microplastics released during the plastic life cycle that pervade food chains.[22] To go beyond formal laws effectively in plastics governance, children and youth ought to be involved. It has been noted that the involvement of children and

[17] Ben-David M, 'Review: Defining international environmental law' 38(2) *Ecology Law Quarterly*, 2011, 555; Cassotta S, The development of environmental law within a changing environmental governance context', 60.

[18] Cassotta S, The development of environmental law within a changing environmental governance context', 60.

[19] Ben-David M, 'Review: Defining international environmental law' ,558-559; Bodansky D and Asselt H, *The art and craft of international environmental law*, 106.

[20] The United Nations Convention on the Rights of the Child defines a child to be any person below the age of 18 years. This definition can be considered to be somewhat universal, unlike that of the youth age group. There is no universally agreed definition of the youth age group. However, as per the World Youth Report, they are considered to be the persons between the ages of 15-24. See United Nations Department of Economic and Social Affairs, *World youth report: Youth and the 2030 agenda for sustainable development*, 2018, 12; Article 1, *United Nations Convention on the Rights of the Child*, 20 November 1989, 1577 UNTS 3.

[21] Benkenstein A et al, *Youth climate advocacy*, South African Institute of International Affairs, 2020, 42-43.

[22] Dasgupta S, Sarraf M and Wheeler D, 'Child health implications of plastic waste reduction in West Africa' 13(1) *Journal of Management and Sustainability*, 2023, 139-140.

young people in climate projects is crucial in Africa, and they should be treated as 'active stakeholders or agents of change'.[23]

Based on the foregoing, this study seeks to investigate the role children play in shaping ethics beliefs and customs for plastic governance in Africa. The study makes the argument that children and the youth in Africa have the capacity to frame persuasive narratives which could mould ethics beliefs and customs to the advantage of plastics governance in Africa. This is based on the understanding that: 1) narratives are an important aspect of human communication, and 2) due to this importance, narratives have the capacity to impact the attitudes, beliefs and behaviours of individuals.[24]

The study proceeds as follows: The second part of this article, with the first one being this introduction, establishes the theoretical framework that will guide the study. The section will particularly outline the content of the framework and demonstrate how it will be employed in the study. Building on the prior discussion, the third part of this article will elaborate on the possible form and potential of narratives framed by children and the youth, with a particular focus on African children and youth. This will be followed by the fourth part, which will outline the interests of African children and the youth in conversations concerning plastics governance and how they can employ narratives to shape ethical beliefs and value systems in line with these interests. The final section will end the study with concluding remarks in light of the study's findings.

II. Introducing the Narrative Policy Framework

Policy scholars have long insisted on the importance of stories in influencing public opinion, and resultantly shaping public policy. This led to the development of the Narrative Policy Framework (NPF), aimed at empirically testing the relationship between narratives, public opinion and public policy.[25]

NPF is essentially the science of stories. It studies the different ways in which stories are narrated and how those 'ways' could convey different understandings

[23] The United Nations Children's Fund, *Time to Act: African Children in the Climate Change Spotlight*, 2023, 4.

[24] Bullock O, Shulman H and Huskey R, 'Narratives are persuasive because they are easier to understand: Examining processing fluency as a mechanism of narrative persuasion' *Frontiers in Communication*, 2021, 1 -<https://www.frontiersin.org/articles/10.3389/fcomm.2021.719615/full#B32 > on 20 November 2023.

[25] Jones M, 'Communicating climate change: Are stories better than "just the facts"?' 42(4) *Policy Studies Journal*, 2014, 644.

of reality, eventually shaping different opinions and actions.[26] It is particularly concerned with policy narratives, which are those political stories framed in both formal and informal forums that inform what governments do. NPF stresses the power of these narratives in shaping public policy.[27]

There are five underlying assumptions of NPF. The first is the 'social construction of policy realities'. Essentially, NPF adopts a Kantian logic. It assumes that human beings do not perceive reality objectively. They do so subjectively, through social constructions that they use to interpret their world. NPF thus places focus on what individuals believe something *means*, rather than what it *is*. The second assumption is 'bounded reality'. NPF assumes that there are limits to the number of interpretations that individuals can make of the objective reality. This is attributed to the fact that there are limited social constructions that individuals can use to interpret. The third assumption is that narratives have 'generalizable components'. In as much as narratives could take different forms, NPF assumes that there is a common structure that they adopt. Furthermore, NPF assumes that this common structure can be broken down into component parts which can be individually analysed.[28]

The fourth assumption is that there are three levels of narrative inquiries, which can be scaled upwards or downwards. The first level, the micro, examines the influence of a narrative on an individual. The second level, the meso, examines the influence of narratives on groups while the final level, the macro, broadly examines the influence of narratives on cultures and institutions.[29] The final assumption, referred to as '*homo narrans*', basically presumes that humans are not exclusively creatures of reason. It posits that humans are also creatures of emotion and that this emotion precedes reason. This serves the role of making a narrative, which is likely to be emotive, the preferred primary heuristic (mental shortcut) in human cognition, communication and decision making.[30]

Based on these assumptions, NPF further divides the study of policy narratives into two conceptual literary categories. These are form and content.[31]

---

[26] Jones M, 'Advancing the Narrative Policy Framework? The musings of a potentially unreliable narrator' 46(4) *Policy Studies Journal*, 2018, 726.

[27] Shanahan E et al, 'The Narrative Policy Framework' in Shanahan E et al (eds) *Theories of the policy process*, 4th ed, Routledge, Oxfordshire, 2018, 173.

[28] Jones M, 'Advancing the Narrative Policy Framework?' 727.

[29] Jones M and Radaelli C, 'The Narrative Policy Framework: Child or monster?' 9(3) *Critical Policy Studies*, 2015, 345.

[30] Velsekova M, 'Narrative Policy Framework: Narrative as heuristics in the policy process' 27(1) *Human Affairs*, 2017, 181.

[31] Jones M, 'Advancing the Narrative Policy Framework?' 728.

Concerning form (related to the third assumption), NPF defines policy narratives as consisting of those components common to the study of literature. These are: 1) the setting which foregrounds the narrative, 2) the characters consisting of at least one victim, villain and hero, 3) the plot which links the setting and the characters and 4) the moral/ message which is the point of the policy narrative. It could take the form of a call to action or a policy solution. Content refers to those unique elements that are related to the specific context of the story.[32] For instance, a story about refugees in Kenya, though having a similar structure, is undisputedly different in content from a story in Congo about child labour.

A possible critique that may be levied against NPF is narrative relativity. This principle posits that, despite form and content, there may be other factors, some of which are unique to the host of the story such as ideology, that may influence how a narrative is interpreted. In some cases, these interpretations may be unexpected, by the 'policy formulator' despite the assumption of bounded relativity. This has the potential of undermining the persuasive power of the narrative.[33] In response to this, NPF also studies other potential drivers that would strengthen the causal relationship between narrative and opinion.[34] The ones of relevance to this study are narrative transportation, congruence and incongruence and narrator trust.

Narrative transportation refers to the ability of a story to export its audience from engagement with the real world to the setting of the story itself. This can be likened to the idiom 'fall into a story'.[35] How this creates a stronger causal relationship between the narrative and opinion, as the audience becomes more immersed in a story, they become less aware of the real-life facts that may contradict some assertions made in the narrative. They may experience strong emotions, motivations and possible belief change, even though the events of the story are not real. Transportation essentially makes a narrative more persuasive and is hypothesised to invoke belief change.[36]

Turning to congruence and incongruence, the causal relationship between a narrative and opinion is likely to strengthen if the elements of the narrative correspond or alternatively fail to correspond with the recipients' cultural

[32] Jones M and Radaelli C, 'The Narrative Policy Framework', 341.

[33] Jones M, 'Advancing the Narrative Policy Framework?' 728.

[34] Jones M, 'Communicating climate change', 647.

[35] Jones M, 'Communicating climate change', 648.

[36] Green M and Brock T, 'The role of transportation in the persuasion of public narratives' 79(5) *Journal of Personality and Social Psychology*, 2000, 702.

worldviews.[37] If the narratives are congruent with one's worldview, it could strengthen their beliefs towards a particular object. On the contrary, in the event the narrative is incongruent, it could play a key role in shifting beliefs away from a particular object.

Finally, narrator trust relates to the narrator's trustworthiness, expertise, accuracy and objectivity, likeability and ideology. Scholarship suggests that factors such as these are likely to influence a recipient's willingness to accept the message of a narrative. The factors all point to aspects that may influence the plausibility of a story beyond the knowledge of the recipient.[38]

Bringing the discussion closer home, it is important to note that the concepts advanced in NPF are not exclusive to policy narratives. The idea of a link between narratives and public opinion is not novel. The professional media has historically exploited this link to spin and control stories.[39] Additionally, rhetoric, the close cousin of NPF, has been studied with famous orators such as Winston Churchill.[40] It has also been acknowledged that social media has now presented individuals with readymade avenues to shape stories of their own.[41] The concepts advanced in NPF can be employed in any field really, and this includes environmental governance.

This theoretical framework demonstrates the potential of narratives in shaping public opinion and beliefs in the generation and implementation of public policy. It will be employed in this study to demonstrate the potential of narratives framed by children and the youth in Africa, with a particular emphasis on their ability to influence beliefs, ethics and value systems.

III. The form and potential of Narratives Framed by African children and youth

Narratives have conventionally been understood to play a central role in how we communicate with each other and how we understand our world.[42]

---

37 Jones M, 'Heroes and villains: Cultural narratives, mass opinions and climate change' Published, University of Oklahoma Graduate College, Oklahoma, 2010, 90-91.

38 Jones M, 'Heroes and villains: Cultural narratives, mass opinions and climate change' Published, University of Oklahoma Graduate College, Oklahoma, 2010, 91-92.

39 Jones M, 'Communicating climate change', 645.

40 Shanahan E et al, 'The Narrative Policy Framework' 174.

41 Jones M, 'Communicating climate change', 645.

42 Tuwe K, 'The African oral tradition paradigm of storytelling as a methodological framework: Employment experiences for African communities in New Zealand' 38th African Studies Association of Australasia and the Pacific Conference, Melbourne, 28-30 October 2015, 2.

This is especially true in Africa, where our traditions are rooted in oral culture. Storytelling has been a way of passing on 'traditions, codes, values of acceptable behaviour as well as upholding and preserving good social order'.[43] In fact, it has been acknowledged that African storytelling is unique due to the twofold role it plays; entertainment and moral education.[44] This section aims to demonstrate that African children and the youth can play this role of storytelling, historically played by the elderly in society, in shaping ethics, beliefs and value systems. To this end, this section examines the possible media in which a narrative can be presented and the potential of narratives framed by African children and youth.

i) Form of narratives

A narrative can be presented in any media[45] so long as it adheres to the generalizable structure of setting, characters, plot and message. These narratives could be presented in physical, digital permanent or temporary media. They could also be written, oral or even in other forms that do not fit squarely within the oral and written categories.

Turning to the physical means, a narrative can be presented as a novel, article, magazine, short story, pamphlet, booklet, comic, poem, to mention a few.[46] Furthermore, a narrative could be presented verbally through speeches, songs, stage plays, poetry and storytelling. Due to the use of words in these media, it becomes rather obvious that a narrative can be presented in these forms. Narrativity has frequently been associated with verbal discourse, be it oral or written.[47] Such media can conventionally adopt the structure of setting, character, plot and message. It is important to note that these media could also be represented in digital form.

A narrative could also take the physical form of a poster, banner, painting, photograph, drawing, impression, artwork or any other form that may not exactly

---

[43] Tuwe K, 'The African oral tradition paradigm of storytelling as a methodological framework: Employment experiences for African communities in New Zealand' 38th African Studies Association of Australasia and the Pacific Conference, Melbourne, 28-30 October 2015, 3.

[44] Tuwe K, 'The African oral tradition paradigm of storytelling as a methodological framework: Employment experiences for African communities in New Zealand' 38th African Studies Association of Australasia and the Pacific Conference, Melbourne, 28-30 October 2015, 3.

[45] Media here refers to means of communication. It shall be used in this study as the plural of 'medium'.

[46] Spacey J, '14 examples of print media' Simplicable, 21 June 2020 -<https://simplicable.com/en/print-media> on 15 October 2023.

[47] Ranta M, *How pictures tell stories: Essays on pictorial narrativity*, Cambridge Scholars Publishing, Newcastle, 2022, 1.

use words but does possess the elements of setting, character, plot and message. For illustration, the author will discuss how these forms can adopt the structure of a narrative.

Ranta elaborates on the narrativity in pictures, which she defines as 'depictions of objects, persons, landscapes or states of affairs'.[48] Based on this definition the term 'picture' could include drawings, paintings, photographs, impressions, sculptures or other artwork. In defending the narrativity in pictures, Ranta gives historical examples of pictures that have played a narrative function. The first example she gives is of static pictures that form part of a series with a chronological order, resembling modernday comics. Among these is the Bronze doors from St. Mary's Cathedral in Hildesheim, which depict Bible stories. These are the creation of Adam and Eve and their expulsion from the Garden of Eden on one side and the birth and passion of Jesus Christ on the other.[49]

However, Ranta does acknowledge that some static pictures play less of a straightforward narrative function, with a single arrested/'pregnant' moment. The example of the sculpture group 'Laocoön and his Two Sons' is proffered. The particular sculpture depicts the 'pregnant moment' of a fight against Laocoön and his two sons with two snakes sent by Athena as punishment. An observer with some background knowledge of Laocoön and Athena is likely to understand the narrative that the sculpture depicts.[50]

Today, it has become a common expression that 'a picture is worth a thousand words'. Williams and Susan note that pictures can be used as an alternative to written descriptions, being used as a primary storytelling tool.[51] They also note the possibility of adding captions under photographs to assist the observer in comprehending the event captured further.[52]

With regard to digital media, pictures, in addition to the media mentioned earlier, could be translated into digital form. Moreover, there are particular narrative media that can only be disseminated in digital form such as movies, short films, audio-recordings, television shows, documentaries and radio shows.[53] Furthermore, due to social media, individuals have been able to craft

---

48 Ranta M, *How pictures tell stories: Essays on pictorial narrativity*, 1.

49 Ranta M, *How pictures tell stories: Essays on pictorial narrativity*, 9-10.

50 Ranta M, *How pictures tell stories: Essays on pictorial narrativity*, 15-16.

51 Thompson S and Williams K, 'Using photography to tell a story' 20(3) *Social Studies and the Young Learner*, 2008, 18.

52 Thompson S and Williams K, 'Using photography to tell a story', 19.

53 Schiller C, 'It depends: Choosing the medium – how you tell your story has consequences' Script, 10 January 2019 -<https://scriptmag.com/features/it-depends-choosing-the-medium-how-you-tell-

stories of their own at low costs.[54] Options range from tweeting to sharing photos and posting short videos in the form of reels or tik tocks.

Additionally, it is the position of this author that narratives can be generated indirectly and be disseminated by the means described above. For instance, narratives could be generated through public interest litigation. An example is the *Minors Oposa v Factorian* case decided in the Supreme Court of Philippines. Here, a group of minors filed a petition against the Secretary of the Department of Natural Resources to cancel all existing timber licences in the Philippines and to desist from processing and granting new ones. The petition was based on the right to a balanced and healthy ecology, which the petitioners associated with intergenerational responsibility and justice.[55] The minors were successful in their petition, generating the narrative that each generation has a responsibility to the next to preserve the environment, and children can sue to enforce that right on behalf of the environment, their generation and future generations. This can be evidenced by some headlines the case attracted such as 'to save the Philippines' forests, he sued for future generations'[56] and 'innovative legal actions to make peace with nature'.[57]

Tied to the prior point, innovations have the potential to generate narratives. For example, in 2019, schools in Ivory Coast built classrooms out of plastic bricks utilising a recycling process developed by a Colombian social enterprise.[58] This created the narrative that it is possible to use recycled plastic for construction. This initiative attracted headlines such as 'classrooms made from recycled plastic waste come to Ivory Coast' and 'from classrooms made of recycled plastics to green initiatives'. It appears the former possibly inspired further environmentally friendly practices in schools in Ivory Coast.[59]

---

your-story-has-consequences> on 6 November 2023.

54 Rizvi J, 'Storytelling and the power of social media' Forbes, 29 September 2021 -<https://www.forbes.com/sites/jiawertz/2021/09/29/storytelling-and-the-power-of-social-media/?sh=627843e56da3> on 6 November 2023.

55 *Minors Oposa v Factorian* (1993) Supreme Court of the Philippines.

56 Rieger J and Young T, 'To save the Philippines' forests, he sued for future generations' The Asia Foundation, 26 July 2023 -< https://asiafoundation.org/2023/07/26/to-save-the-philippines-forests-he-sued-for-future-generations/#:~:text=In%201993%2C%20a%20young%20attorney,of%20generations%20as%20yet%20unborn> on 16 November 2023.

57 Pace University Faculty of Law, 'Innovative legal actions to make peace with nature' -< https://law.pace.edu/news-and-events/events/%E2%80%9Cinnovative-legal-actions-make-peace-nature%E2%80%9D> on 15 November 2023.

58 Hersey F, 'Classrooms made from recycled plastic waste come to Ivory Coast' France24, 26 September 2019 -< https://law.pace.edu/news-and-events/events/%E2%80%9Cinnovative-legal-actions-make-peace-nature%E2%80%9D> on 15 November 2023.

59 Trazié C, 'From classrooms made of recycled plastics to green initiatives' UNICEF, 8 March 2021 -<

In summary, this subsection has explored the variations narratives could adopt. These can be utilised by children and the youth in disseminating their narratives. Furthermore, with the use of social media, dissemination of information has become virtually cost-free. Cost will therefore not operate as a barrier for African children and youth to tell their stories. It is important to note that the media discussed in this subsection are not exhaustive. There is a possibility that there may be other means that narratives could adopt.

ii) Potential of narratives framed by African children and youth

African children and youth could leverage the potential of narratives discussed in the second section, employing stories to influence ethics, beliefs and value systems. They are particularly placed in an advantageous position to do so due to some unique characteristics they possess. Some of these align with narrative transportation, congruence and incongruence and narrator trust.

Generally, children and youth are considered to be a vulnerable demographic due to their young age.[60] For this reason, adults tend to sympathise more with them. Recent research has confirmed that the mere presence of children elicits prosocial behaviour in adults, such as helpfulness and responsibility, across different settings and demographic variables.[61] The cause of this could be examined from an evolutionary perspective, which suggests that adult humans played a caretaker role to facilitate the survival of their offspring, and resultantly the species.[62] Furthermore, children in particular are considered innocent due to their lack of knowledge and assumed 'purity'. Essentially, children are perceived by adults to be uncorrupted by 'mundane affairs'.[63]

Based on the foregoing, children and the youth can frame persuasive narratives, which can shape ethics, beliefs and value systems. First, their characteristics strengthen the narrator's trust and hence are likely to influence

---

https://www.unicef.org/cotedivoire/en/stories/classrooms-made-recycled-plastic-bricks-green-initiatives> on 15 November 2023.

60 Buhler-Niederberger D, 'Innocence and childhood' Oxford Bibliographies, 28 July 2015 -< https://www.oxfordbibliographies.com/display/document/obo-9780199791231/obo-9780199791231-0161.xml> on 28 October 2023.

61 Wolf L et al, 'The salience in children increases adult prosocial values' 13(1) *Social Psychological and Personality Science*, 2022, 165.

62 Hrdy S, 'Evolutionary context of human development: The cooperative breeding model' in Ahnert C et al (eds) *Attachment and bonding: A breeding synthesis*, MIT Press, Cambridge, 2004, 6.

63 Buhler-Niederberger D, 'Innocence and childhood' Oxford Bibliographies, 28 July 2015 -< https://www.oxfordbibliographies.com/display/document/obo-9780199791231/obo-9780199791231-0161.xml> on 28 October 2023.

adults to accept the message of their narratives. Second, their characteristics have the capacity to make their narratives elicit strong emotions and motivations, especially when it comes to harm, hence enhancing narrative transportation. It therefore comes as no surprise that organisations that lobby for the poor and vulnerable have continued to put children at the front and centre of their campaigns to generate adult support.[64] An illustration could be derived from the case of Aylan Kurdi, who was a child refugee who died en route to Europe. A study carried out by Smith et al suggests that the circulation of the photo of his body on Twitter 'increased expressions of solidarity with refugees over time'.[65]

It is the position in this study that African children and youth are likely to elicit even more emotion, motivation, belief change and action with their narratives. This is because they are more vulnerable compared to their Western counterparts. It has been reported that children in Africa continue to have limited access to quality health and nutrition services, safe water, sanitation and hygiene and quality education. Furthermore, children in Africa are highly exposed to poverty.[66] These points of vulnerability are likely to be exacerbated by climate change, with a UNICEF report highlighting that 39 out of the 49 African countries assessed are at a *high or extremely high risk* of the impacts of climate change, which will disparately affect children.[67]

Regarding congruence and incongruence, African children and youth, by virtue of their 'African-ness', are likely to frame narratives that align with African cultural worldviews. Their narratives are likely to be more relatable, hence more persuasive compared to those emanating from the West. For instance, Greta Thunberg's speech calling the European Parliament to forget Brexit and focus

---

64 Wolf et al, 'Adults are more generous in the presence of children- new research' The Conversation, 5 May 2021 -< https://theconversation.com/adults-are-more-generous-in-the-presence-of-children-new-research-160311> on 2 November 2023.

65 See generally Smith L, McGarty C and Thomas F, 'After Aylan Kurdi: How tweeting about death, threat and harm predict increased solidarity with refugees over time' 29(4) *Psychological Science*, 2018.

66 UNICEF, Children in 98 percent of African countries at high or extremely high risk of the impacts of climate change: UNICEF' 1 September 2023 -<https://www.unicef.org/press-releases/children-98-cent-african-countries-high-or-extremely-high-risk-impacts-climate#:~:text=Despite%20substantial%20progress%20made%20by,and%20hygiene%2C%20limited%20access%20to > on 24 October 2023.

67 The United Nations Children's Fund, *Time to Act: African Children in the Climate Change Spotlight*, 2023, 3. The risk was measured using the Children's Climate Risk Index (CCRI) developed by UNICEF which provides a measure of the risks faced by children as a result of climate change. It measures immediate susceptibility and long-term resilience incorporating indicators from two pillars. These are exposure to environmental hazards and vulnerability to the hazards.

on climate change[68] is unlikely to turn heads in Africa compared to Natalie Silantoi's address at the close of the African Youth Climate Assembly in 2023. She commented on 'Africa's narrative on climate change', moving the audience by stating that 'Africa is dying'.[69]

It is worth noting that African children and youth are very many. Today's youth are estimated to be 1.2 billion, comprising 16% of the world's population.[70] Children aging 0-18 amount to a total of about 2.3 billion[71] which accounts for about a quarter of the world's population. In total, children and youth combined amount to about 3.5 billion, comprising about 40% of the world's population. Africa hosts a majority of this number.[72] Additionally, as per a UNICEF report, it is estimated that by 2050, 1 in 3 children in the world will live in Africa.[73] By utilising their numerical majority status, African children and youth can take a page out of the book of their seniors, such as the African group in multilateral negotiations.[74] With the use of the power of numbers, that can employ narratives to further convince adults to rethink their moral, value and belief based positions.

This section of the essay has demonstrated that African children possess the tools and influence to shape ethics, values and beliefs, alluding to their capacity to do so in environmental governance spaces. The next section examines the interests of children regarding plastics governance in Africa and outlines how exactly African children and youth can employ narratives to shape ethics, beliefs and value systems in line with these interests.

---

68 Rankin J, 'Forget Brexit and focus on climate change, Greta Thunberg tells EU' The Guardian, 16 April 2019 -< https://www.theguardian.com/environment/2019/apr/16/greta-thunberg-urges-eu-leaders-wake-up-climate-change-school-strike-movement> on 15 November 2023.

69 Chironda M, 'We want more than just empty promises- African Youth Climate Assembly' Gale, 4 September 2023 -< https://go.gale.com/ps/i.do?p=EAIM&u=anon~90e915a5&id=GALE|A763264631&v=2.1&it=r&sid=sitemap&asid=9ca3bf4d> on 5 November 2023.

70 United Nations, 'Global Issues: Youth' -< https://www.un.org/en/global-issues/youth#:~:text=Today%2C%20there%20are%201.2%20billion,cent%2C%20to%20nearly%201.3%20billion.> on 15 October 2023.

71 UNICEF Data, 'How many children are there in the world?' -< https://data.unicef.org/how-many/how-many-children-under-18-are-in-the-world/> on 15 October 2023.

72 UNICEF, *Children in Africa: Key statistics on child survival and population*, 2017, 1.

73 UNICEF, *Children in Africa: Key statistics on child survival, protection and development*, 2015, 1.

74 Gupta J, 'Explained: The negotiating blocs that will steer COP26' China Dialogue, 1 November 2021 -< https://chinadialogue.net/en/climate/explained-the-negotiating-blocs-that-will-steer-cop26/> on 1 November 2023.

IV. Interests of African children and youth in plastics governance and the framing of narratives

Children and youth have notable concerns and responsibilities towards the environment, partly attributed to the fact that they will face the future consequences of current actions or inactions regarding environmental protection. Some studies have shown that younger generations, such as the Gen Zs and the Millennials recognize environmental concerns and care more about addressing environmental concerns compared to older generations such as the baby boomers.[75] This phenomenon can be extrapolated to the realm of plastics governance in Africa.

It can be concluded that African children and youth have two particular interests or concerns with regard to plastics governance. These interests stem from the challenges plastics pollution pose to them currently and in the future. With regard to the present, children and the youth in Africa continue to deal with water-borne diseases, harmful gases generated from plastic incineration and microplastics released during the plastic life cycle that pervade food chains. This can be attributed to the uncontrolled use and disposal of plastic in African countries.[76] These challenges not only present short-term effects but also long-term ones. Evidence has shown that the entry of microplastics into the food chain can contribute to various cancers and birth complications.[77] Additionally, gases produced from incinerations not only contribute to climate change but also have the potential to contribute to long-term chronic illnesses such as various cancers.[78]

Turning to the future, if plastic pollution is not put to an end, it is likely that the effects stated in the prior paragraph will worsen. It has been reported that in the absence of ambitious and coordinated global policy action, there will be a 70% increase in annual plastics use and disposal in 2040 compared to 2020. This could lead to higher plastic waste mismanagement, despite the possible growth in recycling. With regard to terrestrial leakage of plastics, which more so affects

---

75 Milfont T, 'Ten-year panel data confirm generational gap but climate beliefs increase at similar rates across ages' 12(1) Nature Communications, 2021, 2; Ballew M et al, 'Do younger generations care more about global warming' Yale Program on Climate Change Communication, 11 June 2019 -<https://climatecommunication.yale.edu/publications/do-younger-generations-care-more-about-global-warming/> on 10 October 2023.

76 Dasgupta S, Sarraf M and Wheeler D, 'Child health implications of plastic waste reduction in West Africa' 139-140.

77 UNEP, *From pollution to solution: A global assessment of marine litter and plastic pollution*, 2021, 35-37.

78 See generally Verma S et al, 'Toxic pollutants from plastic waste- A review' 35(1) *Procedia Environmental Sciences*, 2016.

children and youth in Africa, it is estimated to increase from 20 metric tons to 30 metric tons between 2020 and 2040.[79] Furthermore, Africa is expected to account for the largest global share of plastics pollution by 2060.[80]

The first interest African children and youth in plastics pollution, related to the present state of affairs, is ending plastics pollution as soon as reasonably possible. This is reflected in the 2022 resolution of the United Nations Environment Resolution to end plastics pollution by 2040.[81] Furthermore, it is of interest to African children and youth that this 'ban' of plastics pollution should go beyond waste management and address the full life cycle of plastics, including: 1) extraction of raw materials for the manufacture of plastics (extraction phase), 2) the production of the chemical components required in the manufacture of plastics (chemical phase), and 3) the actual manufacturing, distribution and consumption of the plastics (material phase).[82]

The second interest, concerning the future, is that any action taken against plastics pollution should be sustainable. That is, the consumption, production, disposal, product design and other factors that find themselves in the plastics life cycle should be environmentally sound[83] and take into consideration future generations.

Proceeding to how African children and the youth can use narratives to influence plastic governance in Africa, this part of the study will address the content and subsequently the form their narratives should take. With respect to the content, the general *message* of the narratives framed by African children and youth should be intentionally themed around the two interests. In other words, the two interests should form the guiding criteria in formulating the specific messages narratives of African children and youth will adopt. Additionally, in selecting the other elements of the narrative such as the setting and the plot, children and the youth should remember that the idea is not to influence multilateral negotiations, but to persuasively shape beliefs, ethics and value systems in manners supportive

---

79 OECD, *Towards eliminating plastic pollution by 2020: A policy scenario analysis interim findings*, 2023, 5-6.

80 Dasgupta S, Sarraf M and Wheeler D, 'Child health implications of plastic waste reduction in West Africa' 40.

81 UNEP, 'Historic day in the campaign to beat plastic pollution: Nations commit to develop a legally binding agreement' 2 March 2022 -<https://www.unep.org/news-and-stories/press-release/historic-day-campaign-beat-plastic-pollution-nations-commit-develop> on 10 October 2023.

82 Secretariat of the Basil, Rotterdam and Stockholm Conventions, *Global governance of plastics and associated chemicals*, 2023, 10.

83 Secretariat of the Basil, Rotterdam and Stockholm Conventions, *Global governance of plastics and associated chemicals*, 2023, 8; Paragraph 3(b), *Resolution adopted by the United Nations Environmental Assembly on 2 March 2022*, UNEP/EA.5/Res.14, 7 March 2022.

of their interests. They should place key emphasis on narrative transportation, congruence and incongruence and narrator trust.

With regard to the form or media that Africans and children use to disseminate their narrative, the world is their oyster. However, it should be noted that the media chosen forms a large part of the narrative. Different narratives require different media, depending on 1) the different components of the narrative the narrator wishes to emphasise and 2) the audience the narrator is aiming to reach.[84] For instance, if one would like to tell a story about a child who has grown up in a landfill, a photograph is unlikely to suffice. It may become important to use a written medium such as a blog post accompanied by a photo. Similarly, if the narrator would like to communicate their story to an artistic community, it would make more sense to use a song or picture rather than a written article.

African children and youth should not formulate and disseminate narratives sporadically and unthinkingly. To tap into the persuasive nature of narratives and their capacity to influence beliefs, value systems and ethics for plastics governance in Africa, the factors which have been outlined in this section ought to be taken into consideration.

V. Conclusion

In spaces where young people and adults interact, it is not uncommon to hear the phrases 'children are the future' and 'youth are the leaders of tomorrow.' This study has challenged these ideas, demonstrating that children and youth are valuable resources in today's world. This is especially true with regard to shaping ethics, beliefs and value systems for plastics governance in Africa.

This article set out to investigate the role children and the youth play in shaping ethics, beliefs and customs for plastic governance in Africa. From the lens of NPF, it first explored the form and potential of narratives framed by African children and youth. Here it was concluded that children and youth in Africa have the capacity to frame persuasive narratives which could mould ethics beliefs and customs. Additionally, it was alluded that this could be employed in the realm of environmental governance.

[84] Schiller C, 'It depends: Choosing the medium – how you tell your story has consequences' Script, 10 January 2019 -<https://scriptmag.com/features/it-depends-choosing-the-medium-how-you-tell-your-story-has-consequences> on 6 November 2023.

Thereafter, the study went on to examine the interests of African children and youth with regard to plastic governance. It also outlined the way African children and youth can frame their narratives to the advantage of plastic governance. It was particularly demonstrated here that it is possible and practical for children and youth to employ their storytelling potential in the realm of plastics governance in Africa.

This study confirmed that children and youth in Africa have the capacity to frame persuasive narratives which could shape ethics, beliefs and value systems to the advantage of plastics governance in Africa. Remembering the importance informal norms play in society, the ball is now in their court to utilise their numbers, influence and tools to effectively and sustainably bring an end to plastic pollution. The time has come for African children and youth to acknowledge their power and tell their stories.

Towards Environmental Restoration and Sustainability: Embracing the African Ubuntu Philosophy

*James Kamwachale Khomba**

Abstract

Cultural beliefs and philosophies are foundational and fundamental in shaping a society and its natural environment. Lately, there have been various discussions about the values of the African Ubuntu philosophy in many aspects as it relates to issues of environmental degradation and restoration, human relationships, business ethics and corporate governance. As a governing philosophy, Ubuntu is inclusive in nature as it considers all members of society as one entity aiming at achieving one purpose. Within the same context, this paper discusses the importance of cultural beliefs and philosophies in shaping society and the natural environment, with a focus on the African Ubuntu philosophy. The paper aims to explore how Ubuntu's principles can offer insights for mitigating environmental degradation, achieving ecological balance, and ensuring a sustainable future. It highlights that while legal frameworks like the Plastics Treaty are essential, cultural norms and beliefs rooted in African heritage can play a crucial role in environmental restoration. The paper argues that in addition to formal legal instruments, non-formal norms, customs, ethics, and beliefs that are deeply rooted in African cultures can play a crucial role in environmental restoration and sustainability. It explores how the Ubuntu philosophy, which emphasizes interconnectedness among people, nature, and the cosmos, can inform efforts to mitigate environmental degradation and promote ecological balance. The paper aims to inspire a global dialogue on how Ubuntu philosophy can transcend geographical and cultural boundaries to address the plastic pollution crisis and foster a sustainable future for our generations to come.

Keywords: African Ubuntu philosophy, community, plastic pollution, environmental restoration, interconnectedness

* PhD, Professor of Finance & Corporate Strategy, Malawi University of Science & Technology (Lilongwe, Malawi)

I. Introduction

i) Background

Humanity is currently confronted with an environmental crisis of unprecedented proportions. Plastic pollution has emerged as one of the most insidious and pervasive threats to our planet.[1] The widespread use and mismanagement of plastics have led to catastrophic consequences for our ecosystems, biodiversity, and the overall well-being of human civilization.

The year 2022 marked a pivotal juncture in our struggle to address one of the most pressing global challenges – plastic pollution. As the world grapples with the devastating effects of plastics on our environment, we were invited to convene at the United Nations Environment Programme (UNEP) in Nairobi for the third session of the Intergovernmental Negotiating Committee (INC). The goal of this gathering was to craft a new legally binding instrument to combat plastic pollution, known as the plastics treaty, by the end of 2024.

ii) The significance of non-formal norms

While the plastics treaty and subsequent national laws will undoubtedly play a pivotal role in this fight, it is essential to recognize that the battle against plastic pollution goes beyond formal laws and treaties. Beyond these legal frameworks, a rich tapestry of non-formal norms, customs, ethics, and beliefs influences how societies address this crisis.

A complex mosaic of values, traditions, and practices deeply ingrained in African cultures contributes to our understanding of how societies interact with their environment. In particular, the African *Ubuntu* philosophy, often referred to as "I am because we are," embodies a profound interconnectedness among people, nature, and the cosmos.[2] This philosophy emphasizes the importance of community, empathy, and a holistic understanding of nature.

---

1 Lautensach A, & Lautensach S, 'Our War Against Nature: Letters from the Front. Human Security in World Affairs: Problems and Opportunities' 2nd Ed, Pressbooks, 17, 2023. Magdoff, F, Williams C, 'Creating an ecological society: toward a revolutionary transformation' NYU Press, 7-13, 2017. Reid A, Carlson A, Creed I, Eliason E, Gell P, Johnson P, & Cooke J, 94(3) 'Emerging threats and persistent conservation challenges for freshwater biodiversity', *Biological Reviews*, 2018, 849-873.

2 Khomba J, Kangaude-Ulaya E, Indigenisation of corporate strategies in Africa: Lessons from the African Ubuntu Philosophy, 12(7) China-USA Business Review, 2013, 672-689. Lutz, D, 'African Ubuntu philosophy and global management', 84(Suppl 3) *Journal of business ethics*, 84(Suppl 3), 2009, 313-328. Mangaliso M, 'Building competitive advantage from Ubuntu: Management lessons from South Africa', 15(3), *Academy of Management Executive,* 2001, 23–33. Mutwarasibo F, Iken A, 'I am because we are-the contribution of the Ubuntu philosophy to intercultural management thinking', 18(32) *Interculture Journal: Online-Zeitschrift für interkulturelle Studien*, 2019, 15-32.

iii) Rationale

The rationale for focusing on plastic pollution is clear: it is a crisis that touches every corner of the Earth and every aspect of our daily lives. Plastics are ubiquitous in our modern world, found in everything from single-use packaging to life-saving medical devices.[3] Yet, the convenience and versatility of plastics have come at an enormous cost. The reckless production, consumption, and disposal of plastics have led to an environmental calamity that transcends national boundaries and affects the entire global community.

iv) The role of Ubuntu philosophy

In this context, *Ubuntu* philosophy offers valuable insights for mitigating environmental degradation, fostering ecological balance, and nurturing a sustainable future. By embracing the principles of *Ubuntu*, we cannot only address plastic pollution but also reimagine our relationship with the environment. This paper explores the potential of *Ubuntu* philosophy as a guiding framework for addressing environmental restoration and sustainability, particularly in the context of plastic pollution.

In the following sections, a detailed discussion will focus on the African Ubuntu philosophy and its relevance to combating plastic pollution (Section 2), understanding the Ubale Conceptual Framework within the African Ubuntu context (Section 3), explore the potential of Ubuntu in addressing the plastic problem and restoring environmental balance (Section 4), and discuss how Ubuntu can guide sustainable practices to reduce plastic pollution's impact (Section 5). Additionally, there will also be coverage on interdisciplinary approaches and contributions (Section 6), acknowledgement of challenges and limitations (Section 7), outline of future directions (Section 8) and offer practical recommendations (Section 9) and conclusion (Section 10).

[3] Clift R, Baumann, H, Murphy R, Stahel R, 'Managing plastics: Uses, losses and disposal', Law Env't & Dev. J., 15, 2019, 93. George S, 'Plastics we cannot live without. In Plastic Waste and Recycling' *Academic Press*, 2020, 449-466. Moad G, Solomon D, 'The critical importance of adopting whole-of-life strategies for polymers and plastics. Sustainability' 13(15) *MDPI*, 2021, 8218. Geyer R, Jambeck J, Law K, 'Production, use, and fate of all plastics ever made' 3(7), *Science advances*, 2017, 170-782.

II. Understanding the African *Ubuntu* philosophy

i) Origins and historical context

The word Ubuntu is derived from a Nguni (isiZulu) aphorism: *Umuntu Ngumuntu Ngabantu*, which can be translated as "**a person is a person because of or through others**".[4] *Ubuntu* can be described as the capacity in African culture to express compassion, reciprocity, dignity, humanity and mutuality in the interest of building and maintaining communities with justice and mutual caring.[5]

Ubuntu is deeply rooted in the history of various African societies. Its origins can be traced to numerous regions, including Southern Africa, where it is most commonly associated with the Nguni Bantu-speaking peoples. The *Ubuntu*'s historical development is complex and diverse, shaped by various indigenous cultures and their interactions. Its origins are pre-colonial, with a strong presence in traditional African oral narratives, rituals, and practices.

The impact of colonialism in Africa led to significant disruptions in traditional practices, including the *Ubuntu* philosophy.[6] However, *Ubuntu*'s resilience allowed it to endure as a cultural and philosophical foundation for many African communities.

The *Ubuntu* application is pervasive in almost all parts of the African continent. Hence, the *Ubuntu* philosophy is integrated into all aspects of day-to-day life throughout Africa and is a concept shared by all tribes in Southern, Central, West and East Africa amongst people of Bantu origin.[7] Although the Bantu languages have evolved since the concept was first formulated, the meanings and principles of *Ubuntu* are the same in all these languages. Examples of the derivatives of the term in the Bantu languages are summarised in Table 1, below.

Ubuntu Derivative	Bantu Language	Source
Abantu	Uganda	Broodryk (2005)

[4] Mbigi L, Maree J, 'Ubuntu: the spirit of African transformation management. Johannesburg: Knowledge Resources, 235-236, 2005. Moloketi G, 'Towards a common understanding of corruption in Africa', 24(3), *Public Policy and Administration*, 2009, 331–338.

[5] Khoza R, 'Let Africa lead: African transformational leadership for 21st century business'. Johannesburg: Vezubuntu. Mandela, N, Foreword. In: Khoza, R.J. (ed.) Let Africa lead: African transformational leadership for 21st century business, 2006, 6.

[6] Battle M, 'Reconciliation: The Ubuntu Theory of Bishop Desmond Tutu', Pilgrim's Press, Cleveland, OH, 1997, 39-43.

[7] Rwelamila P, Talukhaba A, Ngowi A 'Tracing the African project failure syndrome: the significance of 'Ubuntu'. Engineering, Construction and Architectural Management, 1999, 335-346.

Ubuntu Derivative	Bantu Language	Source
Botho or Motho	Sesotho	Broodryk (2005)
Bunhu	Xitsonga	Broodryk (2005)
Numunhu or Munhu	Shangaan	Broodryk (2005)
Ubuntu, Umtu or Umuntu	isiZulu and isiXhosa	Broodryk (2005)
uMunthu	isiNgoni, Chichewa, Chinyanja and Chibemba (Malawi, Zambia, Mozambique, and Zimbabwe)	Khomba (2011)
Utu	Swahili (Tanzania, Kenya and Uganda)	Broodryk (2005); Khomba (2011)
Vhuntu or Muntu	Tshivenda	Broodryk (2005)

Table 1: Derivatives of *Ubuntu* in Bantu languages. Source: Adapted from Broodryk (2005); Khomba (2011)[8]

The application of the *Ubuntu* philosophy optimises the indigenous setting of an African organisation. The *Ubuntu* philosophy believes in group solidarity, which is central to the survival of African communities.[9] An African is not a rugged individual, but a person living within a community. In a hostile environment, it is only through such community solidarity that hunger, isolation, deprivation, poverty and any emerging challenges can be survived, because of the community's brotherly and sisterly concern, cooperation, care, and sharing.

Nobel Prize winner and former president of the Republic of South Africa, Nelson Mandela, describes *Ubuntu* as a philosophy constituting a universal truth, a way of life, which underpins an open society.[10] Practising the *Ubuntu* philosophy unlocks the capacity of an African culture in which individuals express compassion, reciprocity, dignity, humanity and mutuality in the interest of building and maintaining communities with justice and communality.[11]

---

8 Broodryk J, 'Ubuntu management philosophy: exporting ancient African wisdom into the global world', Johannesburg: Knowles, 235-236,2005. Khomba J, 'Redesigning the Balanced Scorecard model: an African perspective', PhD thesis, University of Pretoria, Pretoria, 2011, 128.

9 Dia, M 'Indigenous management practices: lessons for African management in the 1990's. Proceedings: Conference on Culture and Development in Africa. World Bank, 165-192, 1992.

10 Mandela, N, Foreword. In: Khoza, R.J. (ed.) Let Africa lead: African transformational leadership for 21st century business, *Johannesburg: Vezubuntu*, 2006, 6.

11 Mabovula N, The erosion of African communal values: A reappraisal of the African Ubuntu philosophy. Inkanyiso, 3(1), *Journal of Humanities and Social Sciences*, 3(1), 2001, 38-47.
Poovan, N, Du Toit M, Engelbrecht, A, The effect of the social values of Ubuntu on team effectiveness' 37(3), South African Journal of Business Management, 2006, 17-27.

Respect and love amongst the community members and nature play an important role in an African framework. The Ubuntu is the basis of African communal cultural life and it embodies the interconnectedness, common humanity and the responsibility of individuals to each other.[12]

The above descriptions of the *Ubuntu* philosophy bring to light that an African society is, in general, humanist, community-based and socialist in nature. The *Ubuntu* philosophy therefore underpins any grouping within an African society. Such groupings include formal organisations that operate within local communities. Thus, the African *Ubuntu* philosophy can play a significant role in the preservation and restoration of the natural environment; general corporate planning and performance management systems of different institutions as it influences the internal operations of any organisation that operates in an African environment.

ii) The core Ubuntu principles and the natural environment

The core *Ubuntu* principles are central tenets of the African philosophy of *Ubuntu*. These principles underpin the philosophy's approach to human relationships, community, and interconnectedness.[13] While the specific articulation of *Ubuntu* principles may vary across different African cultures and languages, there are common themes that are generally recognized.

Incorporating the core principles of Ubuntu into the context of environmental protection and restoration, with a specific emphasis on combating plastic pollution, can be outlined as follows:

1. **Interconnectedness**: This principle emphasizes the deep interdependence between humans, nature, and the cosmos. It underscores the notion that the health of our environment, particularly in the context of plastic pollution, is intrinsically linked to human well-being. Actions that harm the environment ultimately affect us all, necessitating a collective effort towards sustainability and pollution reduction.

---

[12] Koster J, "Managing the transformation", In Citizen Participation in Local Government, Bekker (ed), *J. L van Schaik, Pretoria*, 1996, 99-118.
Nussbaum B, 'Ubuntu: reflections of a South African on our common humanity', 4(4), *Reflections*, 2003, 21-26.
Venter E, 'The notion of ubuntu and communalism in African educational discourse. Studies in philosophy and education', 2004, 149-160.

[13] Lutz D, 'African Ubuntu philosophy and global management', 84(Suppl 3), Journal of business ethics, 2009, 313-328. Mangaliso, M, 'Building competitive advantage from Ubuntu: Management lessons from South

2. **Humanity and Respect**: Extending humanity and respect to the natural world is crucial. This principle encourages us to see the natural environment not as a resource to be exploited, but as a community member that deserves respect and care. It calls for a shift in perspective, where the natural world is treated with dignity, leading to more respectful environmental practices that minimize harm, such as reducing plastic waste.

3. **Compassion and Empathy**: By fostering compassion and empathy towards the environment, this principle motivates us to understand and alleviate the suffering caused by plastic pollution. It inspires actions aimed at protecting wildlife and restoring natural habitats affected by plastic debris, promoting a more empathetic approach to environmental stewardship.

4. **Community and Shared Responsibility**: Recognizing that environmental issues like plastic pollution require collective action, this principle highlights the importance of community involvement and shared responsibility. It encourages communities to come together for clean-up efforts, waste reduction initiatives, and to foster sustainable practices that address the root causes of plastic pollution.

5. **Harmony and Balance**: This principle advocates for maintaining equilibrium in our interactions with the environment, seeking solutions that allow for human development while preserving natural resources. It inspires efforts to find sustainable alternatives to plastic that do not disrupt ecological balance, promoting a harmonious relationship between human activities and the environment.

6. **Reconciliation and Restorative Justice**: Applying this principle to environmental protection involves addressing past harms through actions that restore and rejuvenate the natural world. It encompasses cleanup efforts, rehabilitation of ecosystems damaged by plastic pollution, and the implementation of practices that prevent future harm, aligning with a restorative approach to environmental justice.

7. **Caring for Others**: Emphasizing care for the well-being of both the human and non-human inhabitants of our planet, this principle extends the ethos of Ubuntu to include the environment. It underscores the importance of protecting natural habitats from plastic pollution to ensure the health and survival of all species.

8. **Collective Well-being**: This principle places the well-being of the entire community, including the natural environment, at the forefront. It calls for actions that ensure the long-term sustainability of ecosystems, advocating for a reduction in plastic usage and the promotion of practices that support the collective flourishing of all life forms.

Together, these principles form a comprehensive framework for environmental ethics, inspired by *Ubuntu*, that can guide efforts to combat plastic pollution and foster a sustainable, respectful, and compassionate relationship with the natural world. These *Ubuntu*'s core principles provide a rich ethical tapestry for addressing the environmental crisis of plastic pollution. By fostering interconnectedness, respect for nature, communal responsibility, and a commitment to harmony and restoration, *Ubuntu* philosophy guides a transformative approach to environmental stewardship, advocating for a world where human activities are in balance with the natural environment's capacity to sustain life.

III. The *Ubale* conceptual framework in an African *Ubuntu* environmental context

Ubale means relationship. To enhance comprehension of the dynamics within the African environmental sector, the visual representation of the conceptual framework of stakeholder relationships and networks is reflected in Figure 1. This framework is foundational in elucidating the intricate web of interactions among various entities that collectively contribute to the success and sustainability of organizations within the African context.[14]

At its core, the revised framework underscores the essence of interconnectedness and mutual dependencies not just among corporate activities and stakeholders but also across broader ecological and community networks. It articulates how these myriad interactions, underpinned by the *Ubuntu* philosophy, coalesce to drive organizational progress and environmental stewardship.

[14] Khomba JK. Redesigning the Balanced Scorecard model: an African perspective, PhD thesis, University of Pretoria, Pretoria, 2011, 7-9.

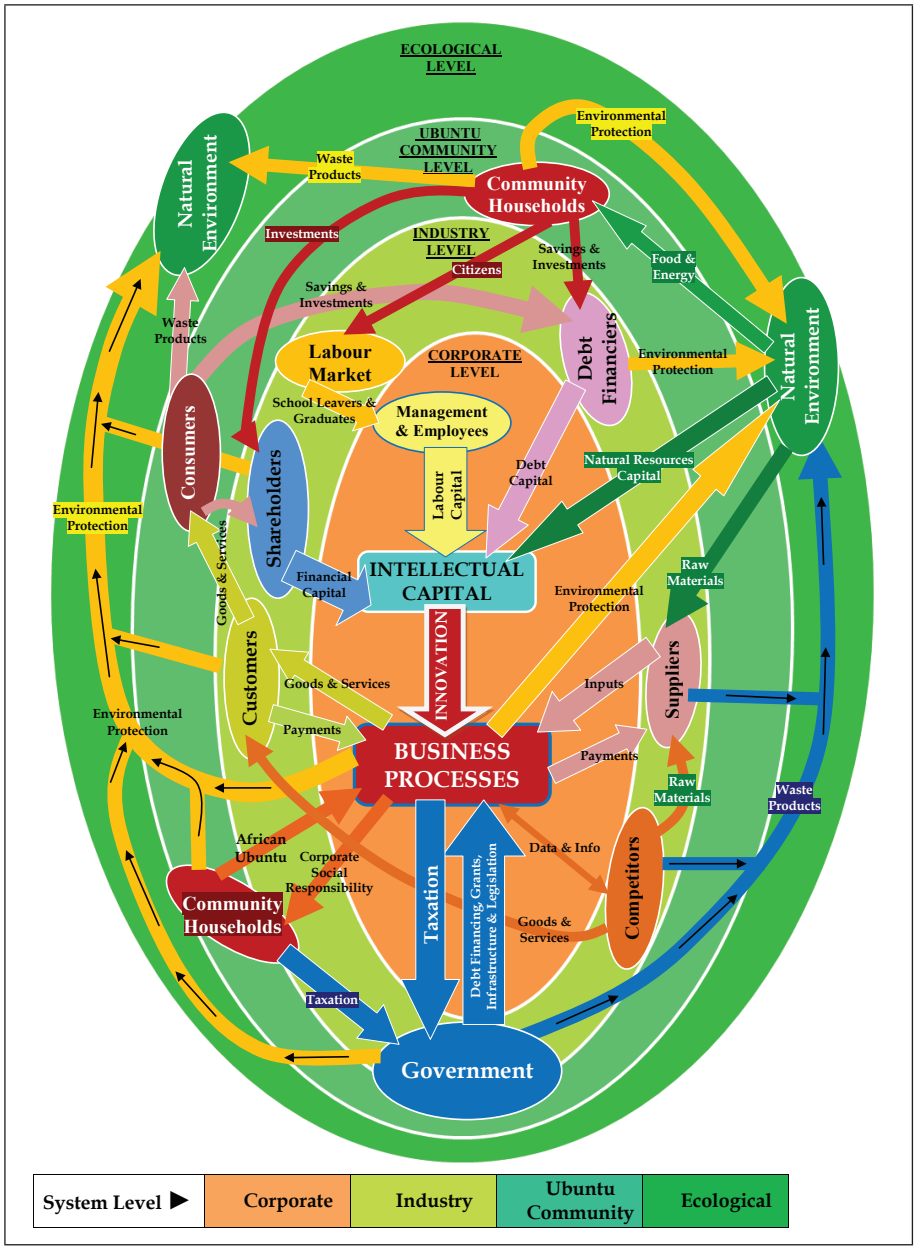

Figure 1: The Ubale Conceptual Framework of Stakeholder Relationships and Networks

Source: Own observation

The framework delineates four distinct systemic layers where these interactions manifest, each playing a pivotal role in the organizational and environmental ecosystem. These layers are:

1. **Corporate Level**: Encompassing the internal operations and direct business transactions that drive organizational goals.
2. **Industry Level**: Highlighting the broader industry dynamics, including competitive positioning and collaborative initiatives.
3. **Ubuntu/Community Level**: Reflecting the cultural ethos of *Ubuntu*, this layer emphasizes community engagement, stakeholder welfare, and the shared responsibility towards societal and environmental well-being.
4. **Ecological Level**: Acknowledging the critical importance of the natural environment, this layer focuses on sustainable practices and the impact of business activities on ecological systems. This is the largest layer that houses all other inner levels of the ecosystem.

In reimagining the intricate web of stakeholder relationships and networks within the African environmental sphere, a particular focus has been placed on the paramount issue of environmental protection, with a spotlight on the escalating challenge of plastic pollution. This narrative champions an integrative approach to understanding and navigating the multifaceted interactions that underpin both organizational success and environmental stewardship.

At the heart of the conceptual framework is the acknowledgement of a profound interconnectedness that spans across various levels of operation and influence, from individual **corporate-level** actions to broader community and ecological impacts. This interconnectedness is not merely a backdrop but a central theme that guides the strategies and actions necessary for tackling plastic pollution head-on, weaving the principles of *Ubuntu* throughout the narrative. Within the corporate realm, the framework underscores a shift towards environmental accountability, urging businesses to adopt and champion practices that significantly reduce plastic consumption and enhance recycling efforts. This level calls for a reevaluation of corporate ethics and practices, aligning them more closely with environmental sustainability goals.

Expanding outwards to the **industry level**, the emphasis is on collective action and innovation aimed at reducing the plastic footprint. This includes fostering collaboration across sectors to develop sustainable materials and to standardize practices that minimize environmental harm, demonstrating an industry-wide commitment to combating plastic pollution.

At the heart of the framework is the **Ubuntu/Community level**, which celebrates the power of collective community action in environmental conservation efforts. This layer highlights the critical role of communities in spearheading initiatives such as cleanup campaigns, educational programs on sustainable living, and advocacy for impactful policy changes. It is here that the spirit of Ubuntu—emphasizing mutual care and responsibility—manifests most vividly, driving a communal approach to environmental protection.

The **ecological layer** places a spotlight on the ultimate goal of restoring and preserving natural environments compromised by plastic pollution. It advocates for sustainable interactions with our natural world, promoting practices that protect ecosystems and biodiversity from the detrimental effects of plastic waste.

Stakeholder interactions, within this framework, are pivotal to the environmental mission. Governmental bodies are recognized for their indispensable role in enacting and enforcing regulations that curb plastic production and waste, alongside incentivizing research into sustainable alternatives. Consumers, too, are called upon to exercise their influence through sustainable consumption patterns and support for eco-friendly products.

This narrative also redefines the concept of capital to include ecological considerations, encouraging investments in green technologies and innovations. It advocates for the cultivation of a workforce that is not only skilled but deeply committed to environmental principles, and for the sustainable management of natural resources to ensure their preservation for future generations.

Figure 1, thus, becomes more than a diagram; it is a manifesto for integrated environmental stewardship, guided by the ethos of *Ubuntu*. It encapsulates a vision for a future where every stakeholder actively contributes to a sustainable, plastic-free environment, highlighting the interdependence of our actions and the health of our planet. This enhanced framework serves not only as a roadmap for organizational and environmental strategy but as a call to action for all, to foster a world where economic success and ecological sustainability are inextricably linked.

IV. Relevance of *Ubuntu* towards environmental ethics

The Ubuntu philosophy, with its deep roots in African tradition, brings a fresh and profound perspective to environmental ethics. At the heart of Ubuntu is an unwavering respect for nature, emphasizing the interconnectedness of humans and the environment. This philosophy rejects the notion of humans as

separate from nature, advocating instead for a symbiotic relationship where the protection of the environment is seen as essential for the survival and well-being of present and future generations.

Moving beyond mere respect, Ubuntu embodies the principles of conservation and stewardship. It positions humans as guardians of the Earth, responsible for its care and preservation. This view aligns closely with contemporary environmental ethics, which call for sustainable management practices that ensure the longevity of our planet's resources.

Moreover, Ubuntu promotes a philosophy of shared responsibility, where the challenges of environmental degradation are not shouldered by individuals or isolated communities but are addressed collectively. This collective action, grounded in the belief that everyone's well-being is intertwined with the health of the natural world, encourages communities to come together to protect and restore their environment.

The holistic approach advocated by Ubuntu extends this interconnectedness to include environmental, social, and ethical issues. This comprehensive perspective underscores the necessity of addressing environmental challenges through integrated solutions that consider the full spectrum of interconnected factors.

V. Sustainability in *Ubuntu* philosophy

Embedded within the Ubuntu philosophy are principles inherently supportive of environmental ethics, advocating for a harmonious relationship between humans and nature. This alignment with sustainability is not coincidental but a reflection of the deep ecological wisdom that Ubuntu imparts. It emphasizes the sustainability of ecosystems, advocating for practices that ensure the health and well-being of all elements within the natural world.

Sustainability, from an Ubuntu perspective, is envisioned as a community-centered endeavour. It views the sustainable use of resources as a collective effort, vital for the well-being of the community and its environment. This approach acknowledges the deep interdependency between community health and environmental sustainability, urging a communal route to sustainable living.

Ubuntu's holistic approach to sustainability encompasses not only environmental considerations but also social and ethical dimensions. It recognizes that true sustainability requires a balance between ecological systems, human

communities, and cultural practices. This inclusive view of sustainability reflects Ubuntu's comprehensive understanding of the interconnectedness of life.

Case studies from African regions, including rural South Africa, Zambia, Malawi, and Tanzania, highlight Ubuntu-inspired initiatives in sustainable agriculture, renewable energy, and waste management. These community-driven projects embody Ubuntu's principles, emphasizing the well-being of both people and the environment. Similarly, in Namibia, conservation efforts influenced by Ubuntu have led to collaborative wildlife protection programs, and in Kenya, sustainable agricultural practices are promoted through community-based decision-making.

VI. Ubuntu's interdisciplinary contributions

Ubuntu's philosophy offers invaluable insights across various disciplines, enriching environmental science, social sciences, and policy and governance with its unique perspectives on human-nature relationships.

In environmental science, Ubuntu stresses the intrinsic connection between humans and nature, advocating for a holistic approach to environmental stewardship. This perspective encourages a comprehensive view of ecosystems, emphasizing the interdependence of all living beings and their environment. It inspires conservation efforts that engage local communities, adopting sustainable management practices that align with Ubuntu principles. Furthermore, Ubuntu influences environmental research paradigms, promoting investigations that consider ecological, social, and cultural dimensions to achieve sustainable solutions.

Within the social sciences, Ubuntu offers a lens to examine human behavior, societal structures, and the communal nature of society. It provides a foundation for social justice initiatives, aiming to reduce inequalities and foster inclusivity. Ubuntu's emphasis on community dynamics, social cohesion, and conflict resolution offers valuable insights for research in these areas. It also impacts psychological well-being research, highlighting the importance of community and connectedness for mental health.

In the realm of policy and governance, Ubuntu can profoundly influence policy development and governance structures, advocating for equity, inclusivity, and shared responsibility. It supports participatory governance models that empower citizens in decision-making processes and applies to conflict resolution

and local governance, promoting community participation and sustainable decision-making. Ubuntu-informed environmental policies prioritize ecosystem protection, fostering sustainable coexistence with the natural world.

Ubuntu's interdisciplinary contributions demonstrate its potential to inform and enrich various fields, promoting a holistic and sustainable approach to addressing both environmental and societal challenges.

VII. Challenges and limitations of *Ubuntu* philosophy regarding environmental restoration and sustainability

i) Cultural sensitivity

There is so much diversity in the socio-cultural underpinnings and interpretations. *Ubuntu* philosophy varies in its interpretation across different African cultures and regions. While the core principle of interconnectedness remains consistent, the specific cultural nuances can create challenges in its application and acceptance. What may be considered respectful in one culture might not be the same in another. Because of these differences in cross-cultural understanding, the adoption of *Ubuntu* philosophy in non-African contexts may lead to misinterpretations or superficial applications.

Ensuring a deep understanding of *Ubuntu* values and their cultural contexts can be a challenge, especially when attempting to implement them in diverse and multicultural societies. Additionally. there is also a risk of cultural appropriation when non-African individuals or entities attempt to incorporate *Ubuntu* into their practices without proper respect for its origins. This can be perceived as disingenuous and insensitive to the cultural significance of *Ubuntu*.

ii) Implementation challenges

The *Ubuntu* philosophy often emphasizes local community values and decision-making. Implementing *Ubuntu*-inspired sustainability initiatives may face challenges in balancing local community priorities with global environmental concerns, such as climate change, which require coordinated actions at a larger scale.

Ensuring meaningful community engagement and empowerment in environmental projects can be challenging. Balancing top-down policy and project implementation with the participatory ideals of *Ubuntu* can require innovative and context-specific approaches.

iii) Resource allocation

Allocating resources for *Ubuntu*-inspired environmental projects, especially in regions with limited financial and material resources, can be a substantial hurdle. Finding sustainable funding and support for these projects can be a limitation to their effectiveness.

iv) Measuring impact

Measuring the impact of *Ubuntu*-inspired initiatives and policies is complex. Traditional quantitative metrics may not fully capture the holistic, community-centred values of *Ubuntu*, making it challenging to demonstrate the philosophy's effectiveness in environmental restoration and sustainability.

Addressing these challenges and limitations is crucial for successfully integrating *Ubuntu* philosophy into environmental restoration and sustainability efforts. It requires a deep understanding of cultural sensitivities, cross-cultural communication, and innovative approaches to implementation that respect the core principles of *Ubuntu* while addressing the unique complexities of each context.

VIII Future directions of *Ubuntu* on environmental restoration and sustainability

i) Research and collaboration opportunities

Future research efforts should focus on interdisciplinary studies that explore the intersection of *Ubuntu* philosophy with environmental restoration and sustainability. This involves collaborations between environmental scientists, social scientists, cultural experts, and indigenous knowledge holders to deepen our understanding of *Ubuntu's* potential and limitations. Emphasis should be placed on community-driven research, with active involvement from local communities. This approach can yield valuable insights into the practical application of *Ubuntu* philosophy in specific environmental contexts.

Future research should extend beyond short-term project assessments and instead focus on long-term impact evaluations. Understanding how *Ubuntu*-inspired initiatives affect ecosystems, community well-being, and sustainability over time is crucial. Establish global research networks and partnerships to facilitate knowledge exchange and collaboration. This will enable the integration

of *Ubuntu* philosophy into diverse cultural and environmental settings, fostering a broader and more comprehensive approach to environmental restoration and sustainability.

ii) Global application of Ubuntu philosophy

The global application of *Ubuntu* Philosophy can manifest itself where international collaboration based on *Ubuntu*-inspired initiatives is encouraged. This involves partnerships between governments, non-governmental organizations, and local communities to implement sustainable practices that align with *Ubuntu* principles. There should also be an integration of *Ubuntu* values into international policies and agreements related to environmental restoration and sustainability. This can include discussions at the United Nations and other global forums to incorporate *Ubuntu* philosophy into broader strategies for addressing environmental challenges.

Finally, there must be an alignment of the principles of *Ubuntu* with the United Nations Sustainable Development Goals (SDGs). By recognizing the interconnectedness of people, nature, and well-being, Ubuntu can offer a unique perspective for achieving these global goals.

The future of *Ubuntu* in environmental restoration and sustainability lies in expanding research efforts, fostering cross-cultural understanding, and promoting global collaboration. By embracing *Ubuntu* philosophy on a global scale, we can create a more harmonious and sustainable relationship with the environment, transcending geographical and cultural boundaries to address pressing environmental challenges.

IX. Practical recommendations of *Ubuntu* on environmental restoration and sustainability

i) Integrate Ubuntu philosophy into environmental education

There is need to integrate *Ubuntu* philosophy into environmental education curricula at all levels, from primary schools to universities. This should include lessons on interconnectedness, community values, and the relationship between humans and the environment. There should also be teacher training which provides training to educators to incorporate *Ubuntu* principles into their teaching methods. This will ensure that students receive a holistic environmental education that aligns with the philosophy.

Within the integration of the *Ubuntu* philosophy, encourage experiential learning by organizing field trips and community engagement activities. These activities should emphasize the practical application of *Ubuntu* values in environmental conservation efforts.

ii) Embark on the Ubuntu-inspired Eco-Community projects

Fostering community-led eco-projects that align with *Ubuntu* values is critical. These projects can include tree planting, waste management, and sustainable agriculture initiatives. Communities should be actively involved in planning, implementing, and benefiting from these projects. Encourage collaboration among different communities to exchange knowledge and resources. *Ubuntu* promotes collective responsibility, and cross-community projects can address larger environmental challenges more effectively. Celebrate the successes of eco-community projects through cultural events and ceremonies that honor the collective efforts of communities. This recognition can inspire further environmentally conscious actions.

iii) Consider new policy implications

Encourage the integration of *Ubuntu* principles and values into environmental policies and legislation at national, regional and global levels is an essential. These policies should prioritize sustainable practices, community involvement, and the well-being of both people and the environment. Promote policies that ensure meaningful community participation in decision-making processes related to environmental issues. Policies should require consultation with local communities when making decisions that may impact their environment and well-being.

To be effective, develop policies that address environmental justice issues using *Ubuntu* as a guiding philosophy. Ensure equitable access to natural resources and environmental benefits for all, with a focus on marginalized and vulnerable populations. Also, develop sustainability metrics that measure not only environmental outcomes but also social well-being. These metrics should incorporate *Ubuntu* values, emphasizing the interconnectedness of ecological and human well-being.

By implementing these practical recommendations, we can embrace the *Ubuntu* philosophy as a guiding framework for environmental restoration and sustainability. This approach encourages a harmonious coexistence with the environment, emphasizes the importance of community, and promotes the well-being of all, ultimately contributing to a more sustainable and balanced future for our planet.

X. Conclusion

The African *Ubuntu* philosophy stands as a cultural treasure offering profound insights and principles that are pivotal in addressing the pressing global issue of plastic pollution and advancing environmental restoration and sustainability. *Ubuntu*'s core principles of interconnectedness among individuals, nature, and the cosmos offer insightful guidance and a framework for mitigating environmental degradation and promoting sustainability.

The pressing issue of plastic pollution, as discussed at the UNEP Conference in Nairobi, calls for not only formal legal instruments but also the incorporation of these non-formal norms, customs, ethics, and beliefs that are deeply rooted in African cultures. In moving forward, this paper urges interdisciplinary collaboration, real-world case studies, and practical recommendations to collectively initiate global initiatives inspired by *Ubuntu* philosophy, fostering solutions to the pervasive plastic problem while striving for a sustainable future that benefits us all.

This paper has highlighted the need for a global dialogue on how *Ubuntu* philosophy can transcend geographical and cultural boundaries to inspire solutions to the pervasive plastic problem. By drawing on interdisciplinary perspectives and worldviews with real-world case studies, we can collectively initiate a broader conversation that recognizes the potential of *Ubuntu* as a guiding philosophy for addressing environmental challenges.

Embracing *Ubuntu*'s principles holds the potential not only to address the plastic pollution crisis but also to nurture ecological balance and ensure a sustainable future for all humanity. It emphasizes the need for a holistic, collective and inclusive approach to harmonize our interconnected relationship with the natural environment.

In a world where environmental challenges demand a comprehensive and interconnected approach, *Ubuntu* philosophy encourages us to rethink and reevaluate our relationship with nature and one another. By acknowledging our profound interconnectedness, we can work towards mitigating environmental degradation, promoting ecological equilibrium, and securing a sustainable future for everyone. This paper calls for a global dialogue, inviting individuals and organizations from diverse backgrounds to explore the potential of *Ubuntu* philosophy in our contemporary environmental discourse. By doing so, we collectively take a significant step towards a more harmonious and sustainable coexistence with the natural world.