

PHILOSOPHICAL INVESTIGATION OF STEPHEN GARDINER'S CLIMATE ETHICS AND ITS RELEVANCE TO THE CONTEMPORARY SOCIETY

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Abstract

Climate scientists and scholars have revealed the danger of an imminent catastrophic global climate change, heralded by global warming, environmental hazards, and the suspected risk of poverty, hunger, and starvation, as a result of increase in Greenhouse gas (GHG) emission. These peculiar features of the climate change problem pose substantial obstacles to our ability to make the hard choices necessary to address it. What are the right actions to take? To achieve this, the article made use of philosophical investigation. Thus, climate change involves the convergence of a set of global, intergenerational and theoretical problems. Hence, Gardiner identifies the challenge of climate change that leads to evasion of responsible action as a moral problem, and its global consequences that tend to justify inaction. He argues that an ideal theory needs to evolve to tackle global consequences, and posits that the pursuit of some tenets of what he calls ethic of the transition among which is the precautionary principle is a transitional approach. This study makes Stephen Gardiner's position on climate change and responses championed by the United Nations. The United Nations Environment Programme, UNEP, (through various conventions) has called for reduction of GHGs as the most important right action that can save humanity. Upon a final evaluation, this article agrees with Gardiner that climate change is a tremendous moral challenge and that precaution is a provisional viable option. It is in agreement with Kant's position, in the case of climate change, as in other cases, can be avoided by a constant critique of our reasoned act or less reasoned action.

Introduction

Nigeria and the world's climate has been changing, evident in: increase in temperature; variable rainfall; rise in sea level and flooding; drought and desertification; land degradation; more frequent extreme weather events; affected fresh water resources and loss of biodiversity. The durations and intensities of rainfall have increased, producing large runoffs and flooding in many places in Nigeria. It is projected that it will continue to increase. Precipitation in southern areas is expected to rise and rising sea levels are expected to exacerbate flooding and submersion of coastal lands. Droughts have also become a constant in Nigeria, and are expected to continue in Northern Nigeria, arising from a decline in precipitation and rise in temperature. Lake Chad and other lakes in the country are drying up and are at risk of disappearing. Temperature has risen significantly since the 1980s, according to Federal Ministry of Environment (2014). Climate projections for the

coming decades reveal a significant increase in temperature over all the ecological zones.

Hence, human activities have been implicated in the deleterious changes in the climate, and this has sparked off serious debates on human responsibility on the causation of, and the needed solution to the problem of climate change. According to Earth Scientists (Climatologists, Meteorologists, Astronomers, Geologists, etc), the earth's atmosphere contains gases which are both naturally occurring and anthropogenic (human-generated). These gases, especially Ozone (O₃), carbon dioxide (CO₂), and Methane (CH₄) at acceptable levels, have the essential function of supporting life by keeping the earth optimally warm. While the ozone has a sun-shade effect by shielding the earth from too much solar radiation, carbon dioxide and methane act much like an incubator by allowing the short-wave solar radiation of the sun to reach the earth surface, but prevent the resultant reflected long-wave radiation from escaping back into the upper atmosphere (or space).

Conceptual Clarification

Anthropogenic

According to Merriam-Webster dictionary, *anthropogenic can be defined as*, “relating to, or resulting from the influence of human beings on nature”. **Anthropogenic** may also refer to things or impact generated by humans. **Therefore, anthropogenic is** mainly pollution or environmental change originating from human activity; **activities made by humans to nature. It is caused or influenced by humans, i.e. air pollution. Hence,** anthropogenic carbon dioxide is that portion of carbon dioxide in the atmosphere that is produced directly by human activities, such as the burning of fossil fuels, rather than by such processes as respiration and decay.

Climate

Etymologically, climate is derived from Latin word *climat-*, *clima*, likewise from Greek *klimat-*, *klima* meaning inclination, latitude, and climate. **According to** Merriam-Webster dictionary, climate refers to “a region of the earth having specified climatic conditions”. **It is** the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity, and precipitation. While, Oxford advanced learner's dictionary, defines climate as “the regular pattern of weather conditions of a particular place”. Thus, climate is commonly defined as the weather averaged over a long period. The standard averaging period is 30 years, but other periods may be used depending on the purpose. Climate also includes statistics other than the average, such as the magnitudes of day-to-day or year-to-year variations. The Intergovernmental Panel on Climate Change (IPCC) 20017 glossary definition is as follows:

Climate in a narrow sense is usually defined as the “average weather,” or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organization (WMO). These quantities are

most often surface variables such as temperature, precipitation, and wind. Climate in a wider sense is the state, including a statistical description, of the climate system.

Greenhouse Gas

Greenhouse gas (GHG or GhG) is simply defined as a gas or gases that absorb and emit radiant energy within the thermal infrared range, causing the greenhouse effect. It is a gas that contributes to the greenhouse effect by absorbing infrared radiation. Carbon dioxide and chlorofluorocarbons are examples of greenhouse gases. The primary greenhouse gases in earth's atmosphere are as follows: water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). Human activities since the beginning of the Industrial Revolution (around 1750) have increased the atmospheric concentration of carbon dioxide by almost 50%, from 280 ppm in 1750 to 419 ppm in 2021. This increase has occurred despite the absorption of more than half of the emissions by various natural carbon sinks in the carbon cycle. At current greenhouse gas emission rates, temperatures could increase by 2 °C (3.6 °F), which the United Nations' Intergovernmental Panel on Climate Change (IPCC) says is the upper limit to avoid “dangerous” levels, by 2050.

Features of Stephen Gardiner's Climate Ethics

The Perfect Moral Storm

Perfect storm is an event constituted by an unusual convergence of independently harmful factors where this convergence is likely to result in substantial, and possibly catastrophic, negative outcomes. The term “the perfect storm” seems to have become prominent in popular culture from Sebastian Junger's book of that name, and the associated film. Junger's tale is based on the true story of the Andrea Gail, a fishing vessel caught at sea during a convergence of three particularly bad storms. The sense of the analogy is that climate change appears to be a perfect moral storm because it involves the convergence of a number of factors that threaten our ability to behave ethically. As climate change is a complex phenomenon, I cannot hope to identify all of the ways in which its features cause problems for ethical behavior. Instead, I will identify three especially salient problems – analogous to the three storms that hit the Andrea Gail – that converge in the climate change case. These three “storms” arise in the global, intergenerational, and theoretical dimensions, and I will argue that their interaction helps to exacerbate and obscure a lurking problem of moral corruption that may be of greater practical importance than any one of them.

The Global Storm

In global Storm, Gardiner sees climate change as possessing three basic characteristics that make response difficult. These characteristics are: dispersion of causes and effects, fragmentation of agency, and institutional inadequacy. The first one—*dispersion of causes and effects*—refers to the fact that the causes and effects of climate change are spatially dispersed. In other words, the activities and sources of climate change as well as the areas of its impact are numerous, spread across the globe, and are difficult to

determine. That means that emission of greenhouse gases from any place on earth affects climate globally. The effect of greenhouse gas emission is not realized solely at the place of its release, but disperses to other regions where the effects may be felt.

According to Gardiner (2010), the second, *fragmentation of agency*, points to the fact that emission of greenhouse gases is not done by only one set of people or agents, but by “a vast number of individuals and institutions (including economic, social, and political institutions) not unified by a comprehensive structure of agency”.(p.24) This problem, Gardiner thinks, arises from the current composition of the world by states, and the lack of effective global governance. And given this situation, he sees climate change as fitting the model Garrett Hardin describes as *Tragedy of Commons* in which all agents, driven by self-interest, engages in free riding on a common resource to the detriment of others, and the collective welfare of all. This seems to explain the fact that most nations find it difficult to respond to the problem of climate change because they regard the atmosphere as a common resource that can serve their self-interest even against global safety.

In the third characteristic, *institutional inadequacy*, Gardiner claims that the world currently lacks adequate institutions and global governance system to address climate change. This is because in spite of the fact that Hardin in the *Tragedy of Commons* provides for the resolution of a common problem through “mutual coercion mutually agreed”, the current global system, or lack of it, Gardiner says, makes the regulation of greenhouse gas emissions through the formulation of enforceable sanctions or enforcement mechanisms difficult, if not impossible.

Apart from the three basic traits of the global storm, Gardiner identifies other factors that exacerbate the problem such as: first, scientific uncertainty about the magnitude and distribution of impacts due to lack of trustworthy national data on cost and benefits. Second, the importance of the sources of greenhouse gases in the social life of present civilization. Third, the problem of skewed vulnerabilities which points to the fact that the richer and more powerful nations are responsible for historical and current emissions, and that according limited evidence on regional impacts, the poorer nations are most vulnerable to the impacts of climate change.

The Intergenerational Storm

The intergenerational storm, according to Gardiner, emanates from the temporal aspect of the three characteristics of the global storm namely, dispersion of causes and effects, fragmentation of agency, and institutional inadequacy. Thus, on the dispersion of causes and effects, Gardiner deduces from the report of the IPCC and David Archer on the long-lived nature of carbon dioxide which can stay thousands of years in the atmosphere, that climate change is “a severely lagged phenomenon”, which means that its effect takes incredibly long time to manifest itself.

For Gardiner, there are three important implications of the long-lived nature of carbon dioxide for climate change. First, is that climate change is a *resilient* phenomenon in that the difficulty of removing large quantities of carbon dioxide from the atmosphere makes “the upward trend in atmospheric concentration not easily reversible”. Therefore the quest to stabilize and reduce atmospheric carbon dioxide needs advance planning. Given this, periods of procrastination and vacillation have serious repercussions for our ability

to manage the problem. Second, the impacts of climate change are *seriously backloaded*. That means that the emissions are retroactive. Thus, the climate change that the earth is currently experiencing is the result of past emissions, rather than current emissions. Backloading implies that climate change poses serious epistemic difficulties, especially for normal political actors, making it hard to grasp the connection between causes and effects, with the added result of undermining the motivation to act; it also implies that the rate of change may take us unawares, undermining the ability to respond.

Third, climate change is a *substantially deferred* phenomenon. This implies that the full, cumulative effects of our current emissions will not be realized for some time in the future. This poses a major problem: whether the democratic political institutions, with their relatively short life span, determined by elections, can deal with the substantially deferred impacts. Moreover, the will to act is undermined by the fact that the benefits of emissions accrue to the present generation, while the bad effects fall on future generations.

On fragmentation of agency in the temporal dimension, in Gardiner's view, the issue is very difficult to resolve because the agents are separated by wide temporal gap without the possibility of overlap. This makes intergenerational cooperation impossible, unlike in the global storm where the commons problem can be resolved with mutual coercion mutually agreed. This is what Gardiner calls pure intergenerational problem (PIP) where successive generations do not overlap and therefore cannot cooperate. He notes that contrary to the proposal of Axelrod that the problem can be resolved when the future casts relevant shadow over the parties, and by invoking the principle of reciprocity, there is neither repeated interaction, nor mutual benefit between present and future generations. In the absence of generational overlap, there is no way present generations can benefit from future generations. This leads to the problem of buck-passing where the current generation refuses to take action, but passes the problem to a future generation. Therefore, Gardiner (2010) insists that when applied to climate change, the intergenerational analysis suggests that current populations may not be motivated to establish a fully adequate global regime. (p.38) Given the temporal dispersion of effects—and especially the substantial deferral and backloading of impacts—such a regime is probably neither in their interests nor responsive to their concerns. This is a significant moral problem. This is, according to him, what makes the intergenerational storm or temporal dispersion more problematic.

The Theoretical Storm

The Theoretical Storm is the final storm. This is the conception of what he calls the theoretical storm, Gardiner reasons that the existence of robust theories would help us “to resist the countervailing forces of the first two storms”, that is, the global and intergenerational storms. But according to him, such robust theories do not exist. Instead, as Gardiner (2010) writes:

Even our best moral and political theories are poorly placed to deal with many of the issue's characteristic of long-term global problems such as climate change. These include (but are not limited to) intergenerational equity, international justice, scientific uncertainty, persons whose

existence and preferences are contingent on the choices we make, and the human relationship to animals and the rest of nature. When such issues coincide they deliver the third component of the perfect moral storm, the theoretical storm.(p.41)

In advancing his theoretical storm argument, Gardiner borrows support from some strategic remarks on climate change made by Al Gore, John Houghton, and Connie Hedegaard respectively. First, Al Gore, the former Vice President of America said, “the minimum that is scientifically necessary (to combat global warming) far exceeds the maximum that is politically feasible”. Second, John Houghton former Head of the IPCC accused former US President, George W. Bush, and former British Prime Minister, Tony Blair, of “neglecting their fundamental political duty towards their citizens in an abdication of leadership of epic proportion” Third, Connie Hedegaard expressed a worry towards the Copenhagen Conference that, “if the whole world comes to Copenhagen and leaves without making the needed political agreement, Then it's the whole global democratic system not being able to deliver results in one of the defining challenges of our century. And that should not be a possibility”

In the opinion of Gardiner (2010), the above statements indicate the gross incompetence of existing institutions and theories to tackle the delicate problem of climate change. He argues that the complaint is that the inaction of our leaders merely reflects wider political realities. In short, the worry arises that the charge of fundamental failure can be leveled not just against particular leaders or administrations, but also more generally, against current social and political institutions, and the mainstream moral and political theories that support them. This claim of inadequacy of current institutions and theories seems to be vindicated by the observation of Marland *et al.* (2008) and Moore as commented by Gardiner that during the 1990-2008 global climate response strategy,

Progress on mitigation has been extremely small. Instead of stabilization or reduction, global emissions have risen dramatically, as have emissions in almost all major countries. Global emissions are up by more than 30%, and emissions for the United States (for example) are up more than 15%. Moreover, there has been no substantial progress on adaptation, and indeed efforts in this direction have been substantially thwarted by the richer nations.(p.230)

In accounting for reasons for theoretical inadequacies, Gardiner accuses current theories of being either *oblivious* when they ignore climate change in treating other issues, or *complacent* when they are only unduly reactive to climate issues, or *opaque* when they are blind to the issues of climate change, or *evasive* when they are unduly malleable, providing convenient labels for whatever issues that come up.

In the opinion of Gardiner, utilitarianism obviously embodies these vices as seen in its application in climate change debates, however, “the same problem arises for many rival political theories, including libertarianism, Rawlsian liberalism, and nationalist communitarianism.” Thus, against a seeming defense of utilitarianism, Dale Jamieson (2007), posits:

Utilitarianism has an important strength that is often ignored by its critics: it requires us to do what is best. This is why any objection that reduces to the claim that utilitarianism requires us to do what is not best, or even good, cannot be successful. Any act or policy that produces less than optimal consequences fails to satisfy the principle of utility. Any theory that commands us to perform such acts cannot be utilitarian. (p.164)

Gardiner insists that utilitarianism is prone to a lot of flaws for he argues that cost-benefit analysis (CBA), the most common utilitarian approach presented in climate debate cannot address the concerns because different economic assessments of climate change deliver very different answers, and the projection of costs and benefits into the far future is a difficult, and perhaps an impossible task. In other words, utilitarianism with its focus on happiness for the majority as against the individual, as Bernard Williams (in Driver 2001) said, is not suited to deal with such a temporally dispersed phenomenon as climate change with its complicated moral issues.

The Problem of Moral Corruption

The Problem of Moral Corruption brings us to the last problem this article wishes to identify. When the global, intergenerational and theoretical storms meet, they encourage a distinct problem for ethical action on climate change, the problem of moral corruption. This can be illustrated if we focus for a moment on the intergenerational storm. Acknowledging that one is engaging in intergenerational buck-passing is morally uncomfortable, especially when the consequences of such buck-passing may be severe, or even catastrophic, for the victims. Presumably, this is discomfort that we would like to avoid.

Gardiner's position on the problem of moral corruption was influenced by his belief in the idea that to be corrupt is to be "immoral or dishonest, especially as shown by the exploitation of a position of power or trust for personal gain", and his acceptance of the view of Dennis Thompson on corruption as "a disease of the body politic enfeebling the spirit of the laws and undermining the principles of the regime." Gardiner believes that generally there are many forms of corruption, and that not all forms of corruption are considered moral corruption, or all moral cases issues of corruption.

Citing instances on the manifestation of corruption, Gardiner (2010) asserts that paradigm cases of corruption exists "when individual politicians take bribes for personal gain, engage in outrageous nepotism, or are simply the unabashed agents of some special interest, rather than their constituents and the common good".(p.304) He asserts that the threats of corruption appear in climate policy as it also pervades political life in modern times. Thus, still referring to instances of corruption especially in climate policy, Gardiner(2010) held:

Some nations, industries, corporations, and unions will try to use climate policy as a tool through which to advance their own (typically short-term economic) agenda at the expense of others, and sometimes they will employ corrupt means for doing so. Moreover, the perfect moral storm can explain how such direct corruption can be extended to include global, intergenerational, and other forms of exploitation some social, political,

and economic elites will try to capture the framing of climate policy in various fora at the expense of the less well-funded and well-connected.(p.305)

Talking particularly about moral corruption, Gardiner refers to it as subtle forms of corruption— those which target our ways of *talking and thinking* about moral problems such as climate change at their basis, at the level of ethics itself. This is what I . . . refer to as distinctively moral corruption, since it strikes at our ability even to understand what is going wrong in moral terms, by subverting moral discourse to other (usually selfish) ends.

According to Gardiner *et al* (2010), moral corruption embodies some subtle strategies such as: “Distraction, complacency, unreasonable doubt, selective attention, delusion, pandering, false witness, hypocrisy”.(p.94) In other words, in any case of moral corruption some or all of these subtle strategies must be present. Thus, of the perfect moral storm, which presents a paradigm case of moral corruption in climate change, Gardiner (2010) asserts:

One might see the threat posed by the perfect moral storm as a “virus” that infects social and political systems, weakening their commitments to explicit and implicit moral norms. In the perfect moral storm, the threat is acute, even potentially fatal, because of the severe nature of some of the asymmetries of power and because those who are damaged by them—the poor, future generations, animals, and the rest of nature— are poorly placed to defend themselves against it.(p.304)

As Kant (2002) says that moral judgment cannot be left to common reason or innocence for it cannot protect itself very well and is easily seduced, Gardiner thinks that “everyday moral thinking is vulnerable to external manipulation”(pp.20-21) In his account of the human inclination to corruption, Kant says Reason commands its precepts unremittingly, without promising anything to inclinations. From this . . .arises a propensity to ratiocinate against those strict laws of duty and to bring into doubt their validity and, where possible, to make them better suited to our wishes and inclinations, to corrupt them and deprive them of their entire dignity

In other words, moral corruption issues from man's constant inclination to find seemingly justifiable reasons to play down the categorical and uncompromising moral demands, or what Kant calls the “strict laws of duty”. Such inclination seems to make moral corruption very subtle and hardly detectable. The result could be that an instance of moral corruption may unwittingly be taken as good morality. In the opinion of Gardiner (2010), the elusive nature of moral corruption could make wrong acts appear non-culpable. He states:

Many forms of moral corruption are subtle and indirect, and some are systematic. Under such circumstances, it can, from the external perspective, be difficult to find anyone to blame in the usual way. After all, those who offer bad arguments or mistaken values *may* act in good faith, as might many of those who accept their positions. And generally we hold people less morally liable (if liable at all) for such apparently (and “merely”) cognitive failures. . . .Part of the genius of some methods of moral corruption, and one reason for their enduring effectiveness and

popularity, is precisely their ability to obscure abuse. If one can twist or pervert otherwise plausible moral claims to a corrupt end, then one can both hoodwink some into thinking that they do right when they do wrong, and also provide moral cover for the more discerning. (p.307)

This subtle nature of moral corruption seems to give rise to fake or bogus morality, which Gardiner sees as a great weapon in the perfect moral storm. Thus, moral corruption, due to its elusiveness poses a major epistemic challenge. How can it be detected in spite of its elusive nature? Gardiner (2010) gives a clue. He thinks that there are paradigm cases of moral corruption in other areas that can be a guide to detect moral corruption in the perfect moral storm. Thus, he points out:

We have a general grasp of some of the constraints. Intuitively, there are at least some clear cases, and any correct theory of global, intergenerational, or environmental ethics must either accommodate these cases or else face a severe burden of proof in not doing so.... problems of moral corruption are not completely unfamiliar. Indeed, paradigm cases are common fodder in literature, history, and philosophy. So, there is some hope that making ourselves aware of the subtle mechanisms of moral corruption in other settings can help us when we face the perfect moral storm.(p.309)

In essence, the initial task, as Gardiner says, is to make ourselves aware of the subtle mechanisms of moral corruption before we can take the necessary action to supplant it. However, whatever action that can be taken must fall within the realm of ethics, for Gardiner insists that climate change is essentially a moral issue. Therefore, he suggests that while awaiting the emergence of an ideal theory, the tenets of what he calls “ethics of the transition” which are already advocated by other scholars for the formulation of good climate policy should be pursued.

Therefore, Gardiner recapitulates and rephrases the salient ethical foundations of the world climate treaty—the UNFCCC—which he also consider as constituting part of the ethics of the transition and have formed the subjects of climate debate among nations, and which have helped to reveal and accentuate the problem of moral corruption. Thus, Gardiner makes eight propositions to show what he considers as right action: Ethical concerns are already at the basis of international climate policy; Scientific uncertainty does not justify inaction; Precaution is theoretically respectable; Past emissions matter; The intergenerational burdens should fall predominantly on the developed countries; Specific intergenerational trajectories require ethical defense; The right to self-defense is important, but sharply limited rationale; Individuals bear some responsibility for humanity's failure.

As Dale Jamieson advocates the evolution of new moral system, Gardiner proposes that properly addressing these issues of ethics of transition will pave way for humanity to make the hard choices that will be delivered by the ideal theory to face the perfect moral storm. However, while awaiting the evolution of an ideal theory Gardiner thinks that precaution is an expedient option.

Therefore, Gardiner posits a version of the precautionary principle based on John Rawls's version of maximin principle which brings out three general criteria as sufficient

conditions for the application of the precautionary principle, namely: (a) That decision-makers lack, or have reasons to discount information about the probabilities of the possible outcomes of their action; (b) that decision-makers care relatively little for potential gains that might be made above the minimum guaranteed by the maximum principle; (c) that decision-makers face risky and unacceptable alternatives.

Based on the foregoing, Gardiner maintains that although the Rawlsian criteria do not exhaust all the conditions for core cases of precaution, they bring out sufficient conditions for the precautionary approach thereby making it defensible to the standard objections even in what are considered paradigm cases such as climate change. Gardiner sees the Rawlsian criteria as supporting what he called Core Precautionary Principle, since according to him they pick out certain instance where it seems clear that the precautionary principle applies and that the precautionary approach might not coincide with other kinds of maximim thinking outside of the domain constituted by the Rawlsian criteria. Such principle, according to Gardiner, can capture and explain our reasons to others by making them salient, and they can be useful when considering new cases by testing for salience. He thinks that it provides a favourable basis to discuss the future of precaution in environmental policy.

The Relevance of the work to the Nigerian Contemporary Society

Nigeria like other countries of the world has its own experience of climate change disasters like the one that struck years ago in the north-eastern region presently comprising Borno and Yobe states, the southern part of Lake Chad, the section of it that lies inside Nigerian territory dried up.

Some four decades ago, the Lake covered an area of over 40,000 square kilometers, whereas it now encompasses a mere 1,300 square kilometers, while the negative trend continues unabated, and as land is laid to waste by the rising temperature leading to the rapid southward expansion of the Sahara Desert. Farmlands and surrounding villages became barren and were swallowed up by advancing desertification, which led to massive migration of people in search of more fertile terrain from the north east towards the greener plateau and middle belt regions. Growing desertification forced thousands of Fulani herdsmen to move to the south and middle belt leading to clashes with crop farmers culminating in death of hundreds according to the reports of residents and activists.

Nigeria's Guinea Savannah region is not spared either. Logging and over dependence on firewood for cooking have stripped a greater part of this area of its vegetation cover. The situation is similarly replicated in the south, where the forest around Oyo has long been reduced to grassland. The south – eastern part of the country has been struck by a different ill. There, gulley-erosion has devastated many settlement areas and farmlands, leading to poverty among local populations. And, it does not stop there. Just as desertification is devastating vast areas of the north, rising sea levels are threatening Nigeria's coastal regions. Although a source of oil wealth, the Niger Delta's low-lying terrain and criss-cross of waterways make it extremely vulnerable to flooding, apart from being at the risk of rising sea level, it has fallen victim of extreme oil pollution.

Moreover, in Southern Nigeria, climate change is also reflected in the massive flood experienced in 2012, houses, farms, farm products, properties and even human beings

were swept away. Also the statistics released by the southwest zonal office of the National Emergency Management Agency (NEMA) about 2 years ago show that no fewer than 5000 persons were affected and 60 houses destroyed in a windstorm which occurred in four states in the south-west region. Negligence and a failure to tackle the issue of climate change by successive governments have also contributed to the rise of insurgency groups across the country. Against this backdrop, if appropriate, preventive action is not taken and adaptation measures are not implemented in time, the results could be catastrophic. No doubt, the need to preserve, protect and promote the environment constitutes a headache to many nations and dominate discussions and activities of government and non-government organizations across the globe. This is because the nature and prospects of the future are determined by the safety of the environment and this fact has increased the need for a healthy and functional plan to preserve and protect the environment.

It was in line with this, amongst several other factors, that two-day South-south regional intensive training workshop to strengthen stakeholders capacity towards mainstreaming climate change into state development plans was held in Calabar, Cross River state, recently. It was organized by Department of Climate Change under the Federal Ministry of Environment and the National Planning Commission (NPC) in collaboration with the United Nations Development Program (UNDP). After the overall plenary, a communiqué was issued as the collective minds of all the participants present. According to the communiqué, the climate change has become a threat to the environment and economy in ways that will affect and impact the various sector if left unchecked.

The communiqué stated that climate change is a development issue that should be mainstreamed into various sectors of national, regional and state development plans. That climate change has disastrous consequences which Nigeria has begun to experience especially in the southern Nigeria as reflected in the massive flood experienced in 2012. Indeed, television reports only recently showed vast areas of Niger and Kano states experiencing massive flood tending towards the type experienced in 2012.

Some of the solution proffered were the need to mainstream climate change into national, regional and state development plans, adapt policies needed to be an integral part of government initiatives, given the cross-cutting nature of the impact of climate change, as well as provide an important intersection between development and climate change adaptation and remediation in that they both aim to reduce the root causes of vulnerability.

Others include raising awareness on issues of climate change which is presently at low ebb especially amongst vulnerable groups like women, children, even at the grassroots, especially rural dwellers, as well as revive the tree planting programme by raising awareness for individuals to plant trees.

As part of the efforts to mainstream the climate change, the Federal government has proactively taken steps in addressing environmental problems. These include effective management of waste, flood and coastal erosion. It has also built up our advocacy programmes through workshops, seminars, public lectures, media campaign, climate change and waste water summits, tree planting land reclamation, landscaping and beautification, campaign against desertification through the desert warriors, and control of land, water, noise and air pollution.

Allied to this, the Great Green Wall of the Sahara and the Sahel Initiative is a planned project to plant a wall of trees across Africa at the southern edge of the Sahara desert as a means to prevent desertification. It is to be implemented in Nigeria in eleven frontline States of Adamawa, Bauchi, Gombe, Kebbi, Sokoto, Zamfara, Katsina, Kano, Jigawa, Yobe and Borno. It will cover 43 LGAs in the frontline states to be covered to rehabilitate the lands. It involves establishment of green wall or shelterbelt from Kebbi State to Borno State, a distance of 1,500 km and 15 km wide, Community Sensitization & Mobilization, Promotion of alternative sources of energy, promotion of alternative means of livelihoods, Promotion of dry land agricultural technology and promoting alternative water source for human, plant and animal use through solar powered boreholes. Apart from the suggestions encapsulated in the communiqué, and steps taken by government so far, there is also the need to adopt appropriate technologies to mitigate the scourge at all levels, while there should be strengthening of the weak human capacity and infrastructure for mainstreaming climate change in national development. Similarly, as part of the science of climate change the curriculum planners should ensure that they put in place core knowledge of, and information about, climate change as part of compulsory education for students at all levels. Students should learn about the potential impacts of unmanaged climate change, as well as options for adaptation and mitigation, in order to enable a complete and robust understanding. Additionally, University lecturers should be financially motivated to carry out research in various fields of knowledge related to climate change, so that innovative research can contribute to practical solutions.

Furthermore, policy makers, school administrators, teachers, parents, and students should embark on raising awareness of climate change in Nigeria. Also, appropriate technologies for adaptation and mitigation should be deployed at all levels, while there should be strengthening of the weak human capacity and infrastructure for mainstreaming climate change in national development. Hence, it is presently being argued that there is paucity of data for mainstreaming of climate change in development issues, and there is an urgent need to reverse this trend by generating abundant data and statistics that will enhance the application of key performance indicators for the purpose of effective monitoring and evaluation.

In order to help Member States and other stakeholders make appropriate decisions and effective policies for sustainable development, adaptation to climate change and the mitigation of its negative effects, UNESCO adopted a *Declaration of Ethical Principles in relation to Climate Change* in November 2017. The Declaration adopted by UNESCO is based on six ethical principles:

Prevention of harm: To better anticipate the consequences of climate change and implement responsible and effective policies to mitigate and adapt to climate change, including through low greenhouse gas emissions development and initiatives to foster climate resilience.

Precautionary approach: Do not postpone the adoption of measures to prevent or mitigate the adverse effects of climate change on the grounds of a lack of definitive scientific evidence.

Equity and justice: Respond to climate change in a way that benefits all, in a spirit of justice and equity. Allow those who are unjustly affected by climate change (due to insufficient measures or inadequate policies) to access judicial and administrative proceedings, including redress and remedy.

Sustainable development: Adopt new paths for development that make it possible to sustainably preserve our ecosystems, while building a more just and responsible society that is more resilient to climate change. Special attention must be paid to areas where the humanitarian consequences of climate change can be dramatic, such as food, energy, water insecurity, the oceans, desertification, land degradation and natural disasters.

Solidarity: Support, individually and collectively, the people and groups most vulnerable to climate change and natural disasters, particularly in the Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Strengthen timely co-operative action in various areas, including technology development and transfer, knowledge-sharing and capacity-building.

Scientific knowledge and integrity in decision-making: Strengthen the interface between science and policy to optimally aid decision-making and the implementation of relevant long-term strategies, including risk prediction. Promote the independence of science and widely disseminate its findings to as many people as possible, for the benefit of all.

It is positive and hopeful that with adherence to the solutions by UNESCO proffered and that of the two- day south-south regional intensive training workshop contained in the communiqué issued after the overall plenary that were discussed elsewhere in this feature, coupled with my personal suggestions in this story will go a long way in taming climate change disasters thereby enabling both government and the people to concentrate on programmes, policies, projects and activities that will eventually enhance our Nigerian society.

Conclusion

Philosophical investigation of Stephen Gardiner's climate ethics and its relevance to the contemporary society focuses on the "Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption," Despite the fact that definitive catastrophic global climate change is as Gardiner says, the IPCC already determined (occurred) climate harm strongly vindicates Gardiner's claim that climate change is a real moral problem. And since it constitutes harm to people and the environment, approaching it with John Stuart Mill's (1999) harm principle is a plausible enterprise. The harm principle states that,

The sole end for which mankind is warranted, individually or collectively, in interfering with the liberty of action of any of their number is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others.(p.9)

Even though this simple original version of the harm principle, as Mill conceived it, focuses on individual right, liberty, and civilized community, but since harm is the central issue here, the principle can be adapted to the global community in the treatment of climate change. Thus, as Harris prescribed shifting from international ethics to cosmopolitan ethics, the harm principle can be invoked to prevent harm to the 'global others', where others refer to the would-be victims of climate change scattered around the world, including nonhumans.

Perhaps, this could warrant the establishment and imposition of relevant coercive or penal measures like what Hardin calls "mutual coercion mutually agreed" as in the case of the tragedy of commons. Nevertheless, since this is not presently possible, as Gardiner has observed, due to institutional and theoretical inadequacies, and the absence of an ideal theory, precaution becomes the most viable temporary option.

Hence, the precautionary principle which is enshrined in the climate change treaty—the UNFCCC—can be invoked as a remedy against epistemic challenges or cognitive bias occasioned by the presence of scientific uncertainty. The traditional version of the precautionary principle as contained in Article 3, paragraph 3 of the treaty which states that:

The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.

'Serious or irreversible damage' refers to harm, but due to the emergence of various versions and interpretations of the precautionary principle, there are objections that the principle is vacuous (Jordan and O'Riordan) or indeterminate (Schutz and Wiedemann). These alterations and objections seem to reflect the attempt to evade the moral burden that the precautionary approach entails. It indicates the temptation to moral corruption which Gardiner describes as the immediate effect of the perfect moral storm. Gardiner's defense and subsequent remedy to the precautionary principle is therefore plausible.

By adopting the maximin principle of John Rawls in defense of the precautionary principle Gardiner seems to have established a formidable platform on which remedial action on climate change can be based, such that those who want to shirk their responsibility for positive action would be liable to moral criticism. Thus, the utilitarian theories and arguments such as international paretianism (Posner & Weisbach), cost-benefit analysis, and social discounting (Lomborg) which tend to undermine responsible action contribute to the problem of moral corruption.

Gardiner's (2010) description of the problem of moral corruption (in the case of climate change) with reference to Kant's description of the corruption of common reason or innocence is apt. The *perfect moral storm* evokes all kinds of arguments and rationalizations in those who should rather obey the *strict laws of duty* (as demanded by the reality of climate change) to avert harm to others. The complicated nature of climate change with the inherent uncertainties gives rise to temptation to moral corruption.

Therefore, in order to secure a solution to the problem, we should, in addition to “[...] making ourselves aware of the subtle mechanisms of moral corruption”, heed the advice of Sagoff that in seeking solutions to climate change, economic considerations should give way to ethical reasoning grounded on responsibility, decency, compassion, and justice. And as Francis said: strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the underprivileged, and at the same time protecting nature.

It seems therefore that the moral problem of climate change can only be fully tackled with the emergence of the ideal theory, according to Gardiner, which will embody sound ethical principles delivered by philosophy. Such principle will be in place, when as Kant (2002) says, common practical reason seeks help in philosophy because it “[...] will find no more tranquility...anywhere except in a complete critique of our reason”.(p.21) In other words, the complete critique of our reason would rid us of the inclinations that lead to moral corruption, and this critique, as Kant rightly says, is the function of philosophy.

Therefore, in order to reduce harm, preserve of nature and environment and avoid inflicting of pains subsequently, there is need for both Global North and Global South Regions to come in one accord to reduce excess burning of fossils and fumes, and seek for adaptation, restoration, conservation, preservation and management of land, forestation, afforestation and agricultural reform.

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