Philosophical Analysis of Moral and Existential Implications of Climate Change

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DOI: https://dx.doi.org/10.47772/IJRISS.2024.8080275

Received: 14 August 2024; Accepted: 26 August 2024; Published: 19 September 2024

ABSTRACT

Besides other challenges such as the economic crunch and the threat of possible World War III orchestrated by conflict between Russia and Ukraine and the war in the Middle East, climate change appears as a major challenge facing our world today. This phenomenon tends to shape the global narrative and influences many government policies as well as dominating most global organizations' debates. There is a consensus among scientists that climate change is largely anthropogenic, that is, it is largely caused by human activities that emit enormous greenhouse gases in the atmosphere leading to austere heating of the earth's surface. This being the case, we realize that climate change raises both existential as well as moral concerns. A critical peek on the various UN and WHO reports on the extent and reality of climate change, backed by evidence of extreme and unpredictable weather patterns witnessed across the globe such as heavy floods in various parts of the world and/or extreme temperatures in many parts of Europe point to a situation that threatens not only the very existence of man and other organisms through death and extinction but also a disturbance to societal moral values, prompted by such questions of climate justice and responsibility of the contemporary generation for future generations. This situation unsettles any critical mind not only to be conscious of the reality and severity of disasters caused by climate change but also to think of possible ways to formulate a framework that addresses the need for mitigation and adaptation but also to preserve the world for future generations. It is the view of this write-up that as a problem that needs a solution, and enlightened by the philosophical problem-solving skills, climate change catastrophe needs a clear and precise definition, hence the need to explicate the real existential as well as moral crises it raises. This paper therefore becomes richly informative and brings to the consciousness of everyone the great risks we are faced with today due to climate change.

INTRODUCTION

The climate change phenomenon is very diverse but real with very real consequences that are authoritatively verified by science. The authority of science cannot be overstated concerning the question of the reality of climate change. Owing to this reality, we recognize that climate change is not only a threat to our ecosystem but to our ethical foundation as well. Ethics or morality is at the very core of every human action and plays a fundamental role in determining and controlling human behavior. In this regard, it is worth pointing out that there are significant moral consequences that are raised by the phenomenon of climate change. Feltz, (2019) argues that to address climate change, there is a need to diversify beyond politics and science.

This thinking influenced UNESCO to adopt an ethical principles declaration related to climate change in 2017 that outlined the following principles. First, UNESCO sought to emphatically advance the principle of prevention of harm. This is to guide the actions that aim at anticipating and preventing climate change consequences and develop policies for mitigation and adaptation of climate change. Secondly, the precautionary approach or principle aims at cautioning against the postponement of actions due to the purported absence of scientific evidence. Thirdly, this declaration sought to advocate for the principle of equality and justice in all forms of response to climate change to grant equal and just opportunities to all climate change victims, which will enable

them to access remedy and redress through judicial processes. Fourth, the principle of sustainable development emphasizes the adoption of policies that will ensure development that ensures the preservation of our ecosystem and build a society that is just responsible and resilient to climate change. This stressed the need to focus on areas of food security, energy, oceans, land degradation, and natural disasters. Fifth, the declaration also sought to promote solidarity to ensure individual and collective support of populations in least-developed countries. The aim of this is to enhance cooperative actions such as development of technology, transfer and sharing of knowledge as well as capacity building. Finally, the declaration emphasized the need to have a strong nexus between science and policy to facilitate risk prediction, decision-making, and long-term strategy implementation (Feltz, 2019).

Ethics as a core branch of philosophy seeks to study and establish fundamental principles and or guidelines for human action. Applied ethics as one of the approaches to ethics or morality is fundamental in guiding and passing value judgement on human actions today. This approach thus provides a platform for our examination of human actions, their consequences and man's moral responsibility to himself, to natural environment and to his fellow humans. Through these lenses, ethics then evaluates human actions to determine how these actions have contributed to ecological disaster and his responsibility towards mitigation of this disaster.

A great number of scholars concur that climate change is a moral issue. 2007 Nobel Peace Prize winner Al Gore argued in his speech after jointly, with IPCC, receiving the peace prize that climate change is not simply a political issue, but a moral issue (Gore, 2007). In his documentary titled *An Inconvenient Truth,* Al Gore highlights the causes and impacts of climate change in underscoring the morality of the climate change phenomenon. Gore argues that taking action on climate change is a moral duty. However, it is important to note that the duty he outlines here is not the duty to care for the victims of climate change, rather, it is the duty to prevent the human activities that orchestrate climate change. His justification is that we have a moral imperative to inform people that prevention of the actions that cause climate change is less costly compared to dealing with the consequences. As such, people must take responsibility and prevent environmental degradation.

Not all ethical issues require sophisticated philosophical criteria to respond to. Some ethical questions are *prima facie* safe to say that they simply need our common sense to deliberate upon. It is a consensus that climate change is real and largely caused by human action. Now this fact raises an ethical question and imperative, knowable by intuition, and also based on the principle of non-maleficence that we should not knowingly cause harm to others. Most of the human actions that have exacerbated climate change were committed to benefit man. Climate change is causing harm. Storms, floods, heatwaves, and storms are killing people. According to Broome, (2008), Tropical diseases will increase and increase their toll on man. Changing rainfall patterns of rainfall leads to food insecurity and drinking water shortage. Human migration is due to a rise in sea levels and other climate issues. Broome argues that the elementary moral principle holds that one should not do anything to benefit himself but harm another person.

However, in as much as sometimes we may hurt others accidentally, whenever we cause harm, we ought to compensate them (Broome, 2008). This elementary moral principle also admonishes us to stop doing that which will oblige us to compensate. According to this principle, the question of what we should do should not be viewed entirely from the perspective of benefits and cost in economic terms, rather, we must look at the benefit and cost analysis from the ethical perspective. From this angle, most current human actions especially those taken for economic value have benefits to the current generation but costly to the future generations. This view raises an ethical conundrum on whether we there is justification for the current generation to sacrifice its benefits for the enrichment of the future generations.

The question of moral responsibility for climate change alleviation

The centrality of the ethical or moral perspective to climate change pivots on the general premise by most scholars and scientists that human actions have contributed to the transformation of the earth in a manner that is not only detrimental to other life forms, the future human generations as well as most of man's contemporaries. As such, the moral question that arises is what should man do in mitigating the threats he is created or has already created. The knowledge of applied ethics thus becomes significant in answering this multipronged ethical question. Such questions as What actions are considered wrong or right with regards to climate change? What

duties do we have? How are these duties related to the rights of others to be shielded against climate change? And who should bear responsibility for mitigating or adapting to climate change impacts? Some of these questions regard justice in the present while others concern responsibility for the future. The question about responsibility is based on who should do what. This what is centered on the two elements of mitigation and adaptation. On this, the intent of this study is to make the determination on the point about the "who". On this question of "who" should shoulder the responsibility, the attention has predominantly been on the nations and corporations with most opinion holders advocating for the burden of responsibility to be shouldered by the nations or countries that have historically been responsible for large scale emission of greenhouse gases. This is anchored on the *polluter pays* principle (Hayward, 2012).

There are however, some arguments against this principle that questions the legality of this principle on the account that why should the current generations take responsibility for the actions of the past generations who pelleted the environment, and perhaps without being aware of the mistake they were making. However, scholars argue that to rid of the possible resistance to the principle of polluter pays, it should be amended so as to include the component that requires us to, while accepting the benefits of what the past generations did, we should also be ready to accept the liability for their mistakes. In that light, the current generation will be able to shoulder the responsibility of reducing emissions. This position affiliates with the *Beneficiary pays* principle which requires that the beneficiaries of the past actions that caused harm to others should take responsibility to alleviate the said harms (Arnold, 2011). Looking at the ethical issue from the perspective of the so-called Brazilian proposal in the Kyoto Protocol, the most developed countries have an ecological debt to pay since much of their development is a result of the past massive emissions (Simms, 2005).

Climate change and Human rights

The question of rights prominently features in the ethical concerns of climate change. The rights issue essentially takes two forms. First, the argument that the consumption or utilization of carbon is essential and every human has a right to this utilization, and the second argument claims that the harm caused to the environment by the utilization of carbon tends to harm the necessary resources whose protection every human has a right to. This issue is however under debate with various philosophers arguing from different points of view. Some scholars have argued that allowing for the emission of greenhouse gases as a right poses a risk of over-emission. Hayward, (2007) argues that humans can achieve economic development without necessarily relying on carbon-emitting sources of energy such as fossil fuels. It can be argued that the current reality supports this argument for the denial of the emission of carbon as a human right. The fact that a lot of engines are now being run using other sources of energy like electricity or solar energy is a testament to the possibility of man achieving development without necessarily relying on the use of fossil fuel.

With the right to carbon emission argument being annihilated as being a perilous trajectory, the only rights argument that remains tenable is the argument on the rights to interests that are otherwise harmed by climate change. Bell, (2011) argues that anthropogenic climate change significantly violates human rights while according to Caney, (2009), not being exposed to the danger of climate change is a human right. It is however argued by some scholars that the mere existence of interests does not suffice to become a right. This however does not entirely obliterate the argument on human rights with regards to climate change, as there is still the advocacy for environmental human rights and the rights of the future generations. This concern for future generations is anchored on the point that the deterioration of the environment is detrimental to future generations. This conception of our obligation to the future generations however raises a myriad of puzzles.

First, Parfit (1986) formulates the non-identity problem puzzle. In this, he argues that an individual's identity is contextual; our identity is dependent on the time of our conception. As such, we cannot be said to have harmed future generations by our actions on the climate today. This argument attempts manner of speaking to exonerate the current generation that is causing harm to the environment from the moral responsibility for their climate-unfriendly actions. Some philosophers nevertheless argue that even though the future is uncertain, we still must make the right decisions now. This view is advanced by the cohort that advocates for the stewardship principle or approach to environmental ethics, conceiving that we hold this universe as trustees and it is imperative for us to not leave it worse for future generations than we found it (Northcott, 1996). This argument finds its reflection in the sustainable development concept which equally advocates for the mechanisms that would ensure the

realization of the present development needs without compromising the capacity for the realization of the development needs of the future generations.

Gardiner (2011) raises a very significant moral conversation concerning climate change. Gardiner argues that the emissions remain in the atmosphere for years thus endangering the future generations because, while the current generations benefit now, the cost is spread to the future. In this case, the question that lingers is to what extent should we be obliged to be considerate of the future generations. The moral dilemma here is that first, reducing emissions of greenhouse gases today would benefit future generations but will disadvantage the current generation. Secondly, in the light of the concept of intergenerational justice, we are prompted to wonder whether the past actions of harm should impose on us the obligation to undertake reparative actions or initiatives for sake of the future generations.

Understandably, governments are perceived, and many scholars argue so too, to have the obligation to initiate actions for mitigating climate change. However, there arises a moral question regarding our responsibilities (Armstrong, 2010). What moral obligations do we have to act where governments or societies have failed to act? Furthermore, in the face of failure and irresponsibility on the part of the governments, how can we develop normatively powerful action guiding principles that guide individual decision making? Moreover, it is argued by some scholars that there is intrinsic moral value in nature such that, even if humans to cease to exist, the remaining components of nature would still have moral value. However, this argument raises some conundrums. First, what criteria can we use to adjudicate or when there is a human verses non-human conflict of interests? Secondly, while the non-human nature has instrumental value to humans who depend on it for medicine and food and are thus necessary for human ends, what moral value accrues from the non-human nature?

Further moral implications that arise from climate change emanate from the fact of unfair distribution of the harms of climate change. Studies show that the already disadvantaged populations or countries are bearing the brunt of the harms of climate change, and these are the populations that are even lacking economic progress and sufficient means of adapting to the harms of climate change. This makes the question of justice central as we consider the division of benefits and burdens of climate change, the distribution of burdens and benefits of adaptation and mitigation policies as well the distribution of responsibilities to address climate change. This conundrum exposes the current point of contention which is the question of loss and damages of climate change, which points to the fact that the world is already incurring losses and damages due to climate change especially in the areas of health and heavily on world economies. These losses and damages are falling severely on the countries that are economically and socially vulnerable and have no means of adapting, mitigating, or minimizing them (UNFCC, 2013).

Concerning justice, climate justice just takes two forms. These are; procedural justice and distributive justice. Procedural justice deals with the quest for fairness in the process of decision making which entails an inclusive and transparent decision-making process. Distributive justice on the other hand deals with the question of fair apportionment of goods, entitlements, and services. Climate justice is hence hinged on questions of inequalities on who has contributed to climate change, who bears the heavier brunt of the harms of climate change, and the opportunities for climate action for mitigating climate change or addressing the climate injustices (Foster, 2020).

Consensus on the major ethical concerns of climate change notwithstanding, an ethical theory (theories) is necessary to address the questions raised. However, as Gardiner, (2011) observes, there are yet no robust theories sufficient to address the multifaceted phenomenon that touches on a myriad of spheres such as intergenerational ethics, justice, human-nature relationship, and scientific uncertainty, since there is a lot of resistance against any arguments advanced to defend actions that seek to protect future generations from the harms of climate change. Brown, (2018) argues that ethicists have failed to exert influence on environmental policies. The over dominance of scientists and economists, most of who lack knowledge in ethics, in the policy-making process, undermines the inclusion of environmental ethics in the policies. This reality thus leads to the development of policies lacking ethical ingredients.

Kantian categorical imperative as a principle of climate action

When faced with the prior analyzed moral implications of climate change, the human mind seeks a moral

framework upon which to ground any moral actions to address climate change. One significant reason for any moral action is that climate change is anthropogenic. The fact that it is human actions that have catalyzed global warming, then it provides us with an advantage since it will call for evaluation of our actions to address climate change. In this regard, evaluation of our actions becomes extremely valuable in addressing climate change. But against what moral yardstick would we evaluate our actions to ensure our actions are safe for Mother Nature?

Kantian ethical theory then becomes critical at this point. This study views that Kantian categorical imperative, which is the hinge of Kantian deontological ethical theory, provides a significant framework for the evaluation of actions on two major accounts. First, Kantian categorical imperative advocates for moral agents' consciousness of their action and rational analysis of the said actions to ascertain their universalizability. Kantian categorical imperative's first maxim that one should act as to will that the maxim of their actions would become a universal law (Kant, 1785). Before doing anything, one has to ask themselves whether they would will and be comfortable with that action being implemented as the command for all people to follow as the universal law. If this law can be implemented to become the universal command for all rational beings, then it is a right action. In this regard then, the right action is one that can be universalized.

This Kantian model provides us with a very important moral scale against which we can evaluate our actions toward the environment. Before taking any action that may impact the climate, one ought to evaluate if the planet would be safe were everyone to take a similar action. When we drive to work and emit carbon gases in the air, one needs to ask themselves, if everyone on the planet were to drive and emit these gases into the atmosphere, would they be comfortable? Any rational being would thus desist from an action whose universal application would harm the planet. One would therefore opt for actions that are sustainable since they can comfortably be universalized. The right action about the environment would be practiced by everyone in the world and would still ensure healthy and sustainable equilibrium. To some extent then, when we evaluate an action of driving a fossil-fueled car against this Kantian theory, it would seem to be a wrong action. In this case, one would argue that this theory is based since it prohibits them from driving to work. However, this argument falls into disrepute since it is anchored on the assumption that there are no alternative means of transport that would not emit carbon such as cycling.

Opting to ride a bike that leaves no carbon footprints would be considered a right action since if universalized and everyone on the planet abstains from driving, we would have a safe planet. Cycling would not only be a sustainable action for the planet but also beneficial to the rider's health. If everyone chose to ride a bicycle, carpool, or use bus transport to work rather than everyone driving a car, it would significantly reduce carbon emissions thus ensuring a healthy climate. Choosing ecologically friendly alternatives for transport in the light of Kantian categorical imperative would ensure that not only the current but also the future generations would preserve the environment. This imperative is not simply limited to the current generation but the future generations as well due to the component of universalizability. This ensures intergenerational environmental sustainability.

Moral issues being subjective as they are, one would argue that what is the justification for the current generation to sacrifice its 'well-being' for the sake of the future generations since by the time the situation gets really bad, the current generation would be long dead. This essentially implies that the future generations will inherit a completely destroyed earth. But why should the current generation care about the future generations? Kantian categorical imperative offers us a significant response. Kantian moral principles do not just concern individual well-being, rather it concerns all people at all times. The universalizability of Kantian moral thought compels the current generation to think about the future. This implies that when we are concerned about our actions affecting the other humans, then we have to take into consideration the fact that humans will not cease to exist with the current generation. Humans will continue to exist in the future thus, the universalizability component prompts the current generation to intend future humanity as well. This being the case, the first formulation of the categorical imperative and its inspiration on choosing the right climate actions is complemented by the second formulation that entails Kantian admonition against treating other people as means to an end. In this formulation, Kant argues that moral agents must act as to treat humanity in their person as in every other person always at the same time as an end and never as a means (Kant, 1785).

This principle prohibits treating other people as instruments to one's ends. This is not limited to the current

human population, but also the future humanity. If we continue with practices that harm the environment, the it implies that we are acting purely on self-interest with disregards for the future generations. This is tantamount to treating the rest of humanity including the future generations as means to our ends. In response to the moral questions of why should we sacrifice our well-being today for the sake of future generations, Kantian conception that all creatures whether living today or in future deserve to be treated with respect stands sufficient. This implies that it is morally obligatory or imperative that we not only focus our actions on the current generation but the future generations as well whenever we undertake any actions that can potentially impact on the environment (Kant, 1797).

Kantian conception of moral obligations to non-rational reality.

It is essential to understand that Kantian ethics is not only limited to human's welfare. Although Kant's ethics is anthropocentric and is a reserve for beings with rational capacity, that is, humans, it does not limit itself to the care of humans only but for non-humans as well. It is safe to say that Kantian ethics advocates for the well-being of entire nature, including humans and non-humans. In his *Groundwork of the metaphysics of Morals*, Kant (1789) propounds two essential components in understanding morality. These are the "will" and "end". While acknowledging that all things in nature work according to laws, only rational beings, humans, have the capacity to comprehend and discern the principles of the law. In other words, only rational beings have the will (Kant, 1785). The *will* according to Kant is the capacity to generate practical results from the promptings of reason. Reason is fundamental in discerning the laws and acting according to them. Plants and animals lack reason since animals simply follow their instincts and plants have a slow response to stimuli. These two entities lack reason. All rational beings tend to be united by the law that each of them should treat each other as ends and never as means to an end. This leads to a union of rational beings bound by universal laws leading to what Kant calls the kingdom of ends. In this kingdom, everyone has dignity. This compels moral agents or the rational beings in this case with dignity.

Kant states that there is a distinction between our duties as moral agents. The fundamental division of duties is between duties to ourselves and duties towards others. The former entails the duties necessary for upholding the intrinsic value of humans. Respecting the humanity in one's person is achieved by promoting the end of their moral and natural perfection. Duties towards others are necessary for the promotion of the end of their happiness. When we promote the ends set by rational beings which compose the idea of their happiness, we respect the humanity in them. Kant further distinguishes between duties of love and duties of respect. Kant asserts that we have direct and indirect duties regarding nature. To nonhuman entities, we have indirect duties. These are duties that man has about nonhuman entities based on the relationship these entities have with human rights and interests (Kant, 1797).

Kant, (1789) advocates for appreciation of the inanimate nature's beauty as a moral necessity. Furthermore, he argues that it is against man's duty to himself to orchestrate the destruction of inanimate nature's beauty. Appreciation of the aesthetic value in the inanimate beings disposes one to potentially fulfill their duties to human beings. The inference here is that Kant tends to state that the care for the non-human nature potentially influences humanity to care for others. Destruction of nature infers Kant, could potentially compromise the disposition that makes one sensitive promotes morality, and enhances one's disposition to love something even without the intention to use it. This implies the potential to develop unconditional or materialistic love for something. Kant further emphasizes that moral agents have a duty not to destroy non-animal entities in nature. Therefore, it is against human duty to himself not to care about the destruction of the beauty of the inanimate nature. Humans have a moral duty to not destroy natural entities. It is therefore worth stating that we not only have a moral duty to take environmentally sustainable actions but to avoid the destruction of the beauty of the natural world. This then implies that inaction against forces of environmental destruction is in itself immoral. As can be deduced from Kantian thought, the destruction of the environment is itself the destruction of the self.

With regards to nature, being moral in the Kantian perspective selflessly entails regarding oneself and nature. Appreciating the beauty in nature without a self-serving attitude enhances one's moral perfection. In understanding Kantian ethics, Allen Wood (1998) argues that Kant views the preservation of natural beauty for its own sake as part of achieving moral perfection (Wood, 1998). Kant's acknowledgment of the existence of inherent worth in natural beauty for its own sake conforms with his call to moral agents to treat each other as

ends in themselves and not merely means to an end, and treat each other with respect. It is safe to argue that an analysis of Kantian moral thought envisaged in the categorical imperative provides an essential ethical theory upon which actions can be evaluated concerning their impact on climate change.

Utilitarianism and climate action

Ethical theories provide us with a framework against which we can analyze and evaluate our actions, to determine their rightness. Utilitarian theory is one of the major ethical theories that are fundamental in the analysis of any actions to determine their rightness or wrongness. This consequentialist theory in its simple formulation appears simple due to its face-value claim that one should always do what produces the best consequences (Bentham, 1789). The proponents of this theory believe that the main function of morality is to increase happiness and or pleasure. Simple as it may appear, this theory raises more questions and controversies than answers, especially in such controversial issues as climate change. The importance of utilitarian theory in climate change debate cannot be understated. However, there are fundamental components of this theory that are worth critical analysis before the theory's application in addressing the climate change phenomenon. When we talk of the function of morality being to increase happiness or to produce best consequences, then three major questions beg. What sort of things will be considered good? Secondly, whose good is to be considered? And thirdly, should we determine the actual or the possible consequences of whatever actions, methods or policies adopted.

As has been discussed earlier in this chapter, central to the moral implications of climate change are the concerns about human rights and climate justice. Applying utilitarian theory to determine the human rights in the context of climate change is a critical contention. Scholars argue that actions taken must take into consideration the well-being of the future generations. In this case, it would be a hefty task utilitarian theory to determine whose rights should be given preference between the current generation and the future generations. Certain actions for mitigation of climate change would disadvantage the current generation with the assumption that they would benefit or safeguard the interests of the future generations. Even if we are to consider the future generations, we would still be confronted with the burden of proof of the potential benefit to the future generations, since we have no way to measure the actual amount of happiness that will be experienced by the future generations.

Bentham's response to the question about what sort of things are considered good takes the epicurean perspective of hedonism, focusing on the pleasure produced by the actions (Troyer, 2003). However, pleasure here may be controversial, since certain pleasures result in pain. Essentially, Utilitarians identify the good with "well-being". The centrality of the utilitarian theory is the belief that a morally right action diminishes ill-being and promotes well-being (Brandt,1992). At this point, we find another question that seeks analysis and determination. What would be the objective measure of people's well-being? and whose well-being is to be taken as the threshold, especially in the case of climate change. It is factual that certain actions such as the purchase of ultra-modern vehicles and flying on state-of-the-art jets tend to promote people's well-being, but the action has a potential harm to the planet's climate due to carbon gas emissions which endanger the well-being of the future generations. Again, if the current generation were to abolish the use of vehicles and other fossil fuel-run machines, they would safeguard the well-being of future generations, but they would significantly disadvantage them. This case raises a kind of conflict of inter-generational interests. Ultimately it becomes challenging to balance these competing interests. This poses the potential risk of ethical egoism creeping in to influence one's judgment.

To safeguard against potential partiality in decision-making, Utilitarians hold that a morally right action produces the greatest happiness for the greatest number of people (Bentham, 1789). According to Bentham's conception then, it is imperative to consider what will enhance the well-being of the highest number of people without being compromised by self-interest. This calls for moral agents to choose an action that will produce the greatest happiness to the greatest number of people even if the person making the choice is in the minority who would be disadvantaged by that action. Bentham and other Utilitarians then adopt a methodology of determining the well-being of a group by finding the sum of the potential losses and benefits to the group in question. This criterion however does not yet fully address the conundrum of which group to be considered between the current generation and the future generation in the case of climate change mitigation. Peter Singer's *equal consideration of interests* presents a possible remedy to the conundrum by stating that whenever people are making decisions on laws and policies, they ought to do so from an impartial perspective (Singer, 2000).

The utilitarian theory again runs into another predicament concerning what consequences to consider when determining the rightness or wrongness of an action. Should one consider the actual consequences or the foreseeable consequences? Utilitarians effectively are divided between those who advocate for actual consequences to be used to determine the rightness of an action and those who advocate for the foreseeable consequences (Brandt, 1992). The point of controversy here is the fact that sometimes, we may not be able to know the possible foreseeable consequences or their probability of occurring may be low. As such, the decision may have to be based on the actual consequences. The risk posed by the actual consequences criterion on climate action is real. If humanity is to make choices based on the actual consequences, then it could take many actions that produce desirable actual consequences at present, but ones that may have devastating effects on future generations since the probability of harm to future generations would be brought to question. However, this study views that it is still possible to rely on the utilitarian theory to guide climate actions when we draw our inference from logical deductions based on the current climate conditions and the actions of the past generations.

Since there is a consensus among scientists that the current climate change situation is caused by human activities, especially during the industrialization period, then we can deduce that our actions at the moment would also affect future generations just as the current generations are victims of the problems caused by the past generations. However, the current negative consequences may have been unknown to the past generations when they took the actions they took at the time. One would wonder, however, whether ignorance relieves one from moral culpability. In this state then this study views that the intention or the motive may be the yardstick upon which we may judge the particular action committed with ignorance of the possible consequences. Unfortunately, utilitarianism suffers one fundamental flaw by its blindness towards the motive of an action as a measure of the rightness or wrongness of an action.

Nevertheless, this study views that humanity can still rely on utilitarian theory to justify the actions committed to safeguard the many generations in the future even if the current generation is to bear some amount of discomfort for the well-being of the greatest number of many generations to come. Therefore, it is morally imperative for the current generations to act in such a way as to produce the greatest amount of happiness for the greatest number of people in the future. It is safe to say that there is a theoretical collaboration between the Kantian deontological theory anchored on his categorical imperative and the utilitarian theory. Both offer a firm and significantly rational justification for climate actions. Consequently, this generation morally owes it to future generations to safeguard the planet's climate from destruction.

Existential risks of climate change

Climate change, besides ethical issues, raises serious existential concerns. This is based on the fact of existential risks that are posed by climate change. This study deems it fit to explore the existential concerns alongside the ethical issues due to their interconnectedness and existence of more convergence than divergence areas. This paper holds a conception that climate change is an existential risk. However, for proper interrogation and exposition of the existential risks posed by climate change, it is imperative to clarify what constitutes an existential risk. Although this concept is defined by various scholars differently, various similarities underlie every definition. Bostrom, (2013) defines existential risk as any risk that threatens the existence of humanity and the potential of intelligent life on Earth. This risk poses the threat of extinction of human life. An existential risk is also considered a catastrophe that threatens the destruction of the entire population of humanity and its civilization (Baum and Barret, 2018). The National Academy of Science (2015) defines existential risk as the threat of premature human extinction or the threat of abrupt and permanent destruction of human future development potential.

As pointed out earlier, the common underlying element in various definitions, different as they may be, of existential risk is the element of placement of a significant portion or entire humanity at the danger of death. To underscore the perception of climate change as an existential threat, we must outline the nature of risks and be able to elucidate what qualifies as an existential risk. This will then grant us the yardstick against which we will measure and justify climate change as an existential risk. Three things determine the seriousness of a risk. First, we look at the scope of risk. The scope seeks to understand how many people can potentially be affected by the risk. Secondly, we examine the severity of a risk. Here, the question is just how bad or to what extent will the people be affected by the risk under investigation? Third, we look at the probability of the occurrence of the risk.

This seeks to answer the question, "How likely is the risk to occur?" (Morrow, 2014).

From the perspective of climate change, existential risk entails a threat to the individual, a state, a community, or the entire humankind. This definition captures a wide scale ranging from local to global spheres. Huggel et al (2018) propound three levels of existential risks caused by climate change. These constitute the physical threat posed by climate change to humans, the threat to man's needs such as food, water, shelter, and health, and thirdly, the threats that undermine the structures that support the well-being of man and enhance acceptable living standards. It is important to note that what is considered acceptable differs from person to person or from community to community and in different contexts.

The three levels discussed above are determinants of how people or subjects are put at risk. The threat to physical life poses the highest existential risk. The threat of climate change on basic needs also poses an existential risk as it threatens the existence of humans. The subject's potential risk depends on its vulnerability and exposure to the hazard. The extent of risk differs from person to person, region to region, and community to community. The question of risk to the existence of man concerning climate change also unfolds through the undermining of the habitability of the world. According to IPCC (2019), habitability entails the capacity of a given area to support human life provide necessary conditions that guard human survival from threats of annihilation, and provide basic needs such as food, water, and sufficient space. Climate change impacts on habitability of places or locations through factors like excess heat, rise in sea levels, floods, and storms. It is thus safe to say that with these factors in place, human survival is threatened hence qualifying climate change as an existential crisis or risk. Mach and Sider, (2021) quip that there are many locations that such factors as the rise in sea level have led to decisions to migrate either y choice or by involuntary procedures like buy-out. This demonstrates the existential dimension of climate change to the inhabitants of these places.

Extreme heat is argued to be a major factor that threatens human survival in the context of climate change as an existential risk (Orb, 2020). These threaten the conditions for human well-being obliterate basic needs and also prompt conditions to whose exposure coupled with vulnerability harms or threatens human life. Various studies point to a danger of the extreme heat, if not controlled, affecting millions of people who are exposed to the warming of 1.5 to 2^{o}C above the levels during the period before the industrial revolution, coupled with the heat in urban centers (Marcotullio et al, 2021). Climate change further affects basic needs and human well-being in a myriad of ways. According to IPCC, (2022), climate change is causing scarcity of water, hampering food production, influencing the emergence and spread of infectious diseases, causing loss of identities, and tearing apart social and communal cohesion through migration. Once again, this scenario demonstrates that climate change is permeating all previously discussed levels of severity that is characteristic of an existential risk. As highlighted earlier, climate change affects basic needs such as food whose lack threatens the life of man. Climate change also affects human well-being by causing mental health issues such as traumas that result from climate disasters, as well as the fact of disrupting daily practices of human life.

For purposes of clarity and specificity of existential risk in the context of climate change, there is a need to classify the risks into further dimensions. These are; the mechanisms and processes involved in the risk, the systems that get affected by the threat or risk, the threat's magnitude, how probable is the threat to occur, the timing and the speed at which the processes are moving, and the scale. Concerning mechanisms and processes of a threat, it is a fact that climate risks originate from climate-weather-related processes that spread to other systems such as social and biophysical (Huggel et al, 2019). Climate-related existential risks originate from both slow and sudden processes which constitute coastal erosion, floods, extreme heat, loss of snow, and landslides. Simpson et al, (2021) argue that for proper identification of the existential threat, we trace the processes from their sources to affected people. This gives us a glimpse into the extent and the way the first two severity levels are affected, that is the threat to human life and the threat to the basic survival needs. Some processes like storms, floods and extreme heat have direct impact on the human life, these are physical impacts. However, they can also have indirect impact when they permeate other systems.

Examining systems that are affected by the existential threat, we first emphasize that existential threat affects man adversely through the two severity levels of human life and basic needs. This in turn affects other systems such as food production, infrastructural systems, water supply, energy supply, availability of arable land, and ecological systems. This happens because systems are interconnected and so a threat will automatically affect

different systems (Reichstein et al, 2022). This can be practically illustrated when we observe that once there is a threat in availability of food will impact people's lives directly but also orchestrate a threat to health services and other infrastructure and in turn affect the lives of other people and their basic needs upon the collapse of health systems. Moreover, other impacts of climate change have been reported to threaten other people's cultural identities and traditions. Such climatic impacts like the loss of glaciers have been reported to threaten the identities of communities like the Himalayas and threaten the existence of the indigenous people in the Andes (Jurt, et al, 2015: Diemberger et al, 2015).

In further analysis of climatic existential risk, examination of the threat magnitude is essential. In most cases, this dimension of existential risk is measured using ordinary metrics such as the physical measure of the area that has become inhabitable due to flooding, the temperature, the amount of water available, and the drought indices. These findings have a direct physical impact on human lives and are relevant to existential risk. High temperature for instance is dangerous to physical life and in the case of a lower-than-expected amount of water threatens the basic needs of man. These measuring metrics give a clear definition of existential risk since they give thresholds that would define a factor as an existential threat.

Current climatic condition

The current floods in East Africa, Gulf countries like Dubai, Brazil, and most parts of the United States have claimed the lives of many people and caused massive destruction of property, extreme heat waves in Europe last year, and devastating heatwaves in the USA and Canada in 2021 with the temperature approaching 50^{o}C are classic examples of the magnitude of factors that qualify these climate change as an existential threat. Other measures of magnitudes relate to the number of people affected and the area affected in terms of geographic or administrative regions like, say, a nation, or a province, or a county/ state (Hirabayashi et al, 2021). These measures are relevant in the analysis of the existential risk. However, as much as these metrics help in the definition of existential risks, the scale of the damage may be an important aspect in the definition of the existential threat. For instance, the risk related to the climate that affects some individuals or a community may not necessarily be counted as an existential threat to the entire nation or the entire humankind.

Another dimension of the existential threat is the probability of occurrence. The component of probability is essential in analysis of the risk. However, this dimension is seldom included in the analysis perhaps due to the challenge of assessing the probability of occurrence of some types of events. This is evident, especially in the modern time characterized by verily unpredictable weather patterns. Most events such as flooding and storms seem to evade the meteorological experts' predictions. Some of these events in recent times caught the world by surprise. The unpredictability of the weather patterns makes it very challenging to make a proper analysis of the possibility of certain threats occurring.

Regarding the dimension of time and speed of the process, scholars observe that certain events occur in an instant and have devastating effects over a long period. However, existential risks related to climate change may not occur instantly and even the consequences may not be realized immediately but unfolds over decades or centuries. One such event that may occur over a wider period is the rise in sea level (Tol et al, 2006). History shows that there is evidence of the decline of certain societies over a long period. Globalization and interconnection in the systems hasten the speed and the propagation of the risks across. Timing is of the essence concerning events that are repeated. Populations may opt to relocate if the occurrence of some risks like floods becomes repetitive (Haasnoot et al, 2019). This repetition makes this event an existential crisis which may strain the ability of the population pushing them to the limits (Melcher, 2020).

The scale of the risk pertains to what is affected or the extent to which the risk is felt. This ranges from individual, community, or nation to the global level. The scale provides a very significant dimension for discussing the existential crisis or risk. The term existential is often used to refer to events that have occurred or affected an enormous geographical area. For instance, the 2017 El Nino that affected large areas of west South America (Rodriguez-Morata et al, 2019), the heat and drought that affected Europe in 2015 and 2018 and the wildfires in 2019 and 2020, floods in Europe in 2021 and USA heatwave of 2021 (Van Oldenborgh, 2021), the heat wave in Europe in 2023, the fires in Greece in 2023 and the 2024 floods in Dubai, East Africa and Brazil are classic examples of existential risks for the number of people or the communities affected and not global threat. It is

however important to note that the definition of existential risk concerning climate change from the perspective of this study is not limited or confined to a specific scale or number, rather, this definition encompasses all scales from the level of individual, and community to entire humanity.

The explication of the scale of existential risk here does not entail the definition of existential risk. Rather, it is only an indication of the existential risk level. A threat becomes an existential risk due to its meeting the threshold stated earlier. However, an existential risk to an individual may be considered a low-level risk compared to an existential risk to a nation. For classification of the extent of the existential risk, IPCC uses various criteria to demonstrate what we have examined under scale as a dimension, such as widespread, severity, and significance.

World Meteorological Organization's report depicting climate change conditions for the period running from 2023 to 2027 presents a worrying set of predictions. Its predictions are based on observations of the current state of affairs, factoring in the rate of change in recent years compared to different historical climatic periods. The organization predicts that global temperatures are likely to reach the highest levels for the period running from 2023 to 2027 and exceed the level observed from 1991 to 2020. It is also predicted that the annual mean global near-surface temperature within this period (2023-2027) will be between 1.1^{o}C and 1.8^{o}C. This is a mean higher than that of the period running from 1850 to 1900. The difference between the study period (2023-2027) and the period 1991-2020 is likely to be 0.88Oc. This implies that the likelihood of at least one year within the 2023 to 2027 period having a higher mean than 1991 to 2020 is 66%. More so, there is 98% likelihood that at least one year within the period 2023 to 2027 will exceed the warmest year on record, that is 2016. There is also a 98% probability that the mean for the period 2022 to 2026 will exceed the mean for the past five years (WMO-GADCU, 2023).

Scientists project that if business continues as usual, it will be even impossible to go outside due to heat waves by the end of the century in the Middle East as well as South Asia. It is expected that droughts will capture areas of Central America, Southern Africa, and the Mediterranean. Many low-lying areas such as Bangladesh and Texas island nations are likely to be overtaken by rising sea levels. Climate change may also bring about warming and extended growing effect in the Midwestern countries such as Canada and Nordic countries like Russia. The melting of ice in the far north would however affect infrastructure and affect the traditions of the indigenous people in those regions (WMO-GADCU, 2023).

If the climate change goes unchecked, it will most likely aggravate inequalities in existence. Most poor nations will be hard hit even though their contribution to greenhouse emissions has been so insignificant. These countries are majorly found in the tropics and these are the areas where climate change may occasion intolerable conditions for both humans and crops. These poor nations are more vulnerable such as the existence of large populations and people who live under very deplorable housing conditions which are easily destroyed by storms. These countries and people have fewer resources that enable them to adapt. These conditions will necessitate high investments to redesign the cities, change agricultural methods, and reorganize the coastlines (IPCC-AR6-SYR, 2023).

Studies reveal that from 1961 to 2000, shows that climate change has already affected poor countries' economies while benefiting the rich countries that are responsible for the problem. Thus, the global wealth gap has widened to the level of 25 percent higher than it would have been. It was also found that most poor countries including Haiti, Nepal, and Myanmar appear to be more affected by the extreme weather conditions for the period running from 1999 to 2018 by the global climate risk index. Hash conditions occasioned by climate change have occasioned increased human migration; a phenomenon that is predicted to increase in the future (IPCC, 2021).

Within the wealthy countries themselves, the poor and marginalized populations are more vulnerable and prone to suffer the most. This is because wealthy people have sufficient resources that help them manage the diverse effects of climate change like the capacity to afford air-conditioners that will help them cool their houses in hot seasons. They can quickly evacuate their residences in the event of disasters and easily recover after. The poor members of the society are vulnerable in so many ways. They live in hot areas and work outside where they bear the brunt of the heat waves occasioned by climate change.

The inequalities mentioned play out at the regional level, community and individual levels. It is projected that

even those considered winners in the whole climate fiasco won't be safe entirely from the effects of climate change. This is because all the places that will be desirable will experience an influx of migration of people. From the experience of the coronavirus, it is evident that the economic ripple effects of disasters spread so quickly through the globe. Scientists predict that climate change may increase the odds of widespread failure of crops in different parts of the world at the same time which will plunge the world into a devastating food crisis (IPCC, 2021; IPCC, AR6-SYR, 2023).

As of 2021, 2.3 billion people were faced with food insecurity. 924 million experienced severe food shortages. In 2021, it is estimated that 767.9 million people (9.8% of the global population) will be faced with undernourishment. One-third of this population was in Africa while half in Asia (WMO, 2022). The catastrophic impacts of drought on farming and pastoral livelihood and hunger caused about 1.2 million people to be internally displaced in Somalia in 2022. 60000 of this population crossed to Ethiopia and Kenya. At the same time, Somalia was home to 35000 refugees in drought-stricken areas. Ethiopia also recorded another total of 512000 internally displaced people due to drought (WMO, 2022).

Pakistan experienced a record-breaking rain from July to August 2022 leading to massive flooding. This caused the death of over 1700 people as 33 million people were affected and 8 million were displaced. The economic assessment found the total losses amounting to US $30 billion. July 2022 experienced 181% above normal rain as August recorded 243% above the normal. Moreover, the 2022 pre-monsoon heatwaves in India and Pakistan occasioned a decline in agricultural produce. India restricted rice exports and banned wheat exports. This phenomenon in combination with the start of the Ukraine war impacted global food availability, stability, and access in the global food markets thus posing a high risk to many people already suffering from a shortage of staple food (WMO, 2022; IPCC, 2023).

Europe recorded record-breaking heatwaves during summer accompanied by extremely dry conditions. In 2022, deaths associated with Europe heat surpassed 15000 in Spain, the UK, Germany, Portugal, and France. China experienced long-lasting and extensive as the national records rose beginning mid-June to the end of August. This resulted in the record-hottest summer surpassing the normal margin by 0.5°C (WMO, 2022).

Euro news agency reports that Europe is experiencing very high heat conditions this July. According to the British Met Office, 2023 is expected to record higher temperatures in Europe compared to 2022. Edwards, (2023) states that 2023 January was the hottest in at least eight countries in Europe. In June this year, the European Environmental Agency cautioned that schools and hospitals were facing a big risk due to increased temperatures (Abnet, 2023).

Warm weather is also enhancing the spread of vectors that cause infectious diseases such as mosquitoes and ticks. Various researchers have also identified the correlation between interpersonal conflicts and rising temperatures and climate change is viewed as the factor that will multiply this threat by increasing the odds of greater conflicts within and between nations. From this, it is evident that climate change is likely to prompt changes that may not be stoppable by any amount of money. This then necessitates taking action to limit the rate of warming. Various initiatives are expected to be undertaken under the Paris Agreement. These are initiatives that are to be undertaken by nations that are signatories.

Several media channels; BBC, DW, CNN, WION, and CBS among others are reporting about devastating rising temperatures due to surging heat waves across Europe, the US, and parts of Asia this month of July. According to Reuters, the intensifying heat waves in the US and Europe are causing health risks. The city of Phoenix on the 18th of July recorded the 19th consecutive day of high temperatures in which each day saw a record temperature of 43º Celsius. Experts even project that the average temperatures may stand at 48º Celsius for a considerable time unless there occurs some rain and storms to cool things down (Salgado, 2023). In Europe, the World Meteorological Organization approximates close to 61000 people may have died last year alone due to heat waves and it warns that the temperature rise is likely to intensify (WMO, 2023). This statistic can be corroborated by another study by Ballester et al, (2023) which found that Europe experienced 61000 deaths during Summer between May, 30th and September 4th. This is a worrying trend indeed. This study also found that the most affected facets of the population are women, children, individuals with cardiovascular diseases, the socially isolated and economically and socially disadvantaged individuals.

A red alert was issued by the EU emergency response unit over the projected worsening of the temperature situations in most parts of Italy, Serbia, Croatia, Spain, Montenegro, Herzegovina, and southern Bosnia. According to the EU's Copernicus climate change service, Europe experienced the highest temperatures in the summer of the years 2022 and 2021. The highest recorded temperature in Europe was 48.8C recorded in Sicily in 2021. Scientists have warned that the heat waves will get more severe due to climate change caused by the emission of gases emanating from burning fossil fuels. Summer this year, Death Valley in California recorded a temperature of 120F (53C) while Northwest China recorded a temperature of 52C which coincided with Greece's Swiss Alps wildfires and catastrophic flooding in South Korea and India (Salgado, 2023)

The whole world is immersed in the horrific reality of appalling global warming thanks to enormous amounts of carbon dioxide gasses emitted into the atmosphere. According to NASA findings, the CO_2 level in our planet today is at its highest in 2 million years. NASA reports that the concentration of CO_2 was 280 parts per million before the industrial period. In the year 2023, it is approaching 420 parts per million. World Meteorological Organization State of the Global Climate Reports of 2022 found that there is a continued global increase in greenhouse gases in 2022. The three main gases that showed record increases were Carbon Dioxide CO_2, Methane (CH_4), and Nitrous Oxide (N_2O). Carbon dioxide which is measured in parts per million (ppm) showed a record increase of 149%, equivalent to 415.7 ±0.2 about its pre-industrial concentration. Methane which is measured in parts per billion (ppb) recorded a record increase of 262%, equivalent to 1908±2, from the pre-industrial levels; while Nitrous Oxide, also measured in parts per billion had a record concentration of 334.5 ±0.1 ppb converting to 124% concerning its pre-industrial levels. Methane gas recorded the largest annual increase on record of 18 ppb from 2020 to 2022 (WMO, 2022).

The entire world is in anxiety due to what may at times be termed as the furry of mother nature ranging from massive floods, hurricanes, tornadoes, winter storms, devastating droughts, and tsunamis among other natural disasters (Rosen, 2021). Millions of people across the globe are suffering from the effects of these diverse climatic conditions caused by global warming. High rates of desertification are witnessed in different parts of the world, thousands of rivers across the world are drying up, and some lakes are swelling up while some are drying up. There is a massive loss of animal and vegetative life occasioned by severe droughts and regular forest fires destroying millions of hectares of vegetation cover and water catchment areas (Abbot et al, 2015).

Concerning glaciers, WMO (2023) reports that in a period between October 2021 and October 2022, observations experienced an average change in glacial thickness of more than 1.3 meters. Since 1970, the cumulative loss in glacial thickness amounts to 30 meters. The Intrusion of Saharan dust combined with little winter snow saw a record glacial melt in the European Alps. 6% of glacier ice volume was lost in Switzerland between 2021 and 2022. IPCC noted that the global glacial ice mass lost between 1993 to 2019 amounts to more than 6000 gigatonnes (Gt). This is an equivalent of 75 lakes of Lake Geneva's size which is the largest lake in Western Europe. Antarctica Sea ice dropped to 1.92 million km^2 by 25th February 2022. This was the record lowest level which was 1 million km^2 below the 1991 to 2020 mean. The rest of the year experienced continuous below-average levels with the lowest level being in June and July 2022.

The year 2022 also witnessed the record highest ocean heat content. Understandably, 90% of the energy trapped by greenhouse gases is absorbed into the oceans. The warming rates in the oceans have been very high in the past two decades. During 2022, 58% of the ocean surface experienced at least a marine heatwave. This poses a significant threat to marine life. The average global sea level experienced a continuous rise in 2022 realizing a new record for the 1993-2022 satellite altimeter record. The average sea level rise rate doubled between the 1993-2002 satellite record of 2.27mm/yr to a record of 4.62 mm/yr in the period of 2013 to 2022. From the year 2005 to 2019, the melting glaciers from Greenland and Antarctica contributed to 36% of the rise in global mean sea level. The IPCC also found out that there is high confidence that the pH of the ocean surface has shown a considerable decrease and is now the lowest in 26 thousand years. This is occasioned by the process of acidification which is the result of CO2 reacting with seawater thus decreasing the pH level. This process poses a threat to organisms and the ocean ecosystem at large.

CONCLUSION

This chapter has highlighted massive information on the moral as well as existential implications of climate

change. It is worth pointing out that moral issues are controversial and there is not one moral compass agreed upon by every human being. However, despite the fluidity of moral conceptions, it is still worth affirming that the issues of justice have a rather universal outlook and it can be agreed that climate change bring with it serious moral issues and they are worth giving attention. The chapter also paints a sad picture from the data adduced which shows the magnitude and severity of climate change. This picture then necessitates actions due to urgency demonstrated by the data provided.

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