Dignity and the *imago Dei*: A Rights-Based Argument for Environmental Justice

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IN THE SCIENTIFIC COMMUNITY, the pressing dangers of climate change are prevalent, as more and more studies reveal the damaging effects of industrialization to the world's balanced ecosystems. One such example of the effects of climate change is rising sea levels across the globe, which threaten the lives and livelihood of human beings. While one could argue for the need to take action to pursue environmental justice from a position of needing to care for the earth as God's good creation, the argument gains strength when factoring in the harm being done to human beings as a result of climate change. All humans are God's handiwork, made in His image; any failure to uphold this basic dignity for all individuals essentially denies the *imago Dei*.

The goal of this paper is the argue that as human beings created in the image of God and endowed with duties to care for marginalized communities, there is an obligation to pursue environmental justice for those whose rights are violated by rising sea levels. First, the scientific phenomenon of climate change will be discussed and correlated to rising sea levels. Next, the harmful effects of sea level rise on human habitation will be investigated. Then, these impacts will be linked to violations of basic human rights. Finally, the obligations to uphold environmental justice on moral and Christian bases will be outlined and potential actions proposed.

Contribution of Climate Change to Rising Sea Levels

The rise of industrialization, though tremendously important for the development of societies, has nevertheless left an array of tragedies in its wake. One impact of the rise in factories and fossil fuel burning is global climate change. Carbon dioxide (CO_2) is the byproduct of burning processes, including power generation, transportation, and burning of land (Ramanathan and Feng 2009). With the recent rise in these processes, the concentration of carbon dioxide in the atmosphere is rising to unprecedented levels. Currently, the concentration of CO_2 in the atmosphere is estimated to be 414 ppm; however, 430 ppm seems to be the point past which dangerous climate change cannot be avoided (Lindsey 2022a). Therefore, serious consideration must be given as to the consequences of these high concentrations, and actions taken to help remedy the phenomenon known as the greenhouse effect.

The phenomenon of the greenhouse effect results from the presence of greenhouse gases in the atmosphere. The surface of the earth absorbs incoming solar energy, becoming warmer, then consequently emits infrared (IR) radiation back toward space. CO_2 and other greenhouse gases (such as CH_4 and NO_2) trap emitted IR radiation as the atoms vibrate at frequencies equal to the frequencies of emitted radiation, and this absorbed energy becomes heat as the molecules in the air collide (Ramanathan and Feng 2009). As a result, the balance of incoming and outgoing energy into the

earth's system can be disrupted: too much energy can be inside the atmosphere with increasing greenhouse gas concentrations. To balance the system, Planck's black body radiation law comes into effect. The warmed earth emits more heat to get rid of the extra energy inside the system, leading to rise in global mean temperature and global climate change (Ramanathan and Feng 2009). The change in climate also creates a self-perpetuating cycle that accelerates the rates of global temperature rise, in part due to decrease in the albedo effect. The albedo effect is caused by light-colored surfaces (such as snow) reflecting solar radiation; however, global warming is causing melting of polar ice caps and mountain glaciers (California Academy of Science 2018). This decreases the white surface areas from which solar radiation can be reflected, causing the earth to absorb more energy and increase the rate of global temperature rise.

Rising temperatures due to human-induced climate change result in altered weather patterns and general ecological changes across the earth. One of these global changes is the rise of sea levels. There are two major physical contributions to global mean sea level (GMSL) rise. The first, accounting for approximately one-third of GMSL rise since 2005, is thermal expansion causing the ocean waters to slightly swell and increase in volume as they warm up (Wuebbles et al. 2017). Ninety percent of additional heat in the climate system due to excess greenhouse gases is absorbed by the oceans, increasing the ocean heat content (Fasullo and Gent 2017). The increase in ocean heat increases the kinetic energy of water molecules, which causes more movement and space between each molecule (Urone et al. 2016). Consequently, the volume of the oceans grows, resulting in sea level rise. Secondly, ice from mountain glaciers and polar ice sheets melts and increases water mass of the oceans, accounting for approximately two-thirds of GMSL rise since 2005 (Wuebbles et al. 2017). Overall, global mean temperatures are on the rise and encroaching on coastal regions, largely as a result of human increases in fossil fuel emissions.

Not only is sea level rising across the world, but the rate at which it is rising is increasing. On average, the GMSL has risen approximately 20-23 centimeters since 1880, and with a high greenhouse gas emissions model, GMSL rise could physically exceed 2.5 meters by 2100 (Wuebbles et al. 2017; Lindsey 2022b). Though this severity is improbable, these projections emphasize the urgency of reducing greenhouse gas emissions and mitigating climate change. Over the last 27 years, the average sea level rise has been measured at 3.4 mm/year; however, in the last 10 years, the average rate of sea level rise has been 4.8 mm/year (Griggs and Reguero 2021). Therefore, the rate of rise is increasing. Furthermore, isolated events of flooding are becoming more common, as there has been an increased frequency of annual and high-tide flooding. High-tide flooding is 300-900% more frequent than 50 years ago, and scientists are predicting a rise in annual floods and frequency of tidal flooding after observing a 5 to 10 fold increase in "nuisance floods" since the 1960s (Wuebbles et al. 2017; Lindsey 2022b). Sea level rise is not only a slow and constant phenomenon but has an impact on isolated events that can cause massive damages if unexpected. Finally, sea level rise varies geographically due to spatial patterns and regional climate change differences, indicating different populations are at greater or lesser risk of impeding sea levels (Wuebbles et al. 2017). This disproportionate impact begins to point toward concerns regarding environmental justice and the need to advocate for the rights of disadvantaged populations.

Detrimental Effects of Sea Level Rise

Before assessing the rights violations and moral obligations of privileged populations, it is important to address the detrimental effects of sea level rise and recognize where and how human rights might be violated due to climate change impacts. The most at-risk communities are those in "low-elevation coastal zones," and around 625 million people currently live in these areas worldwide (McLeman 2018). The large population involved places importance on understanding the issue at hand, and the alteration to human disbursement across the globe poses points of concern for the global population. Humans are intimately dependent on their ecosystems for life, and changes in these ecosystems (such as is occurring with climate change) impacts people's ways of life. This paper seeks to focus on the impact that rising sea levels have on how humans relate to and are affected by their environments, and the population patterns that shift due to changing sea levels. Overall, there are two main factors associated with sea level rise: land loss and damage due to intense weather events. Both factors result in two main effects of sea level rise: economic costs and population displacement.

To begin, land loss due to sea water inundation is a major factor that contributes to damages of climate change. One island that is particularly at risk of sea level rise is Viti Levu, Fiji, due to its low elevation and encompassing coastline. Researchers estimate between 20.5 and 29.9 square kilometers of Viti Levu will be inundated by 2100, with a compounded effect caused by storm surges (Sabūnas et al. 2020). Similarly, sea level rise is projected to account for 3-32% land loss due to inundation in the Southeast Asian and Pacific (SEAP) islands, with sea level rise models ranging from 1m to 6m (Wetzel et al. 2012). Sea waters encroaching on communities not only threatens their availability of inhabitable land but impacts agricultural systems as well. In the SEAP islands, 35% of urban and intensive agricultural land is being lost due to inundation of islands (Wetzel et al. 2012). In addition to surface area being lost from submergence as sea levels rise, saltwater intrusion, termed "salinization," deprives areas of freshwater, rendering some land unusable for agriculture (Griggs and Reguero 2021). Therefore, one important factor to address with regard to climate change and sea level rise is the land that is lost, either physically or functionally, and how this might affect the ecological relationships and dependencies of humans on nature.

The second major factor that contributes to the detriment of sea level rise is intense weather events, which cause pervasive damage. Typhoons and superstorms are expected to grow in size as sea levels rise and global temperatures increase (Griggs and Reguero 2021). Warmer temperatures result in increased wind speeds and more moisture held in the air, and sea level rise causes more severe storm flooding (Colbert 2022; Hurricanes … 2022). These factors together inflate the severity of tropical storms, as wind speeds, rainfall, and flooding all occur to greater degrees. Notably, the occurrence rates of storms is not predicted to change, but rather the strength of storms is on a rising trend. From 1979 to 2017, the number of major hurricanes increased, and the number of small hurricanes decreased, but the total number of hurricanes remained relatively consistent (Hurricanes … 2022). Damages from these storms can be very difficult to recover from especially in already-vulnerable locations. As with sea level rise in general, the intensity of severe storms is disproportionately increasing. The impact of

weather hazards and storm surges on communities is increased in locations where natural coastal protections have been destroyed (McLeman 2018). Therefore, a negative cycle begins to set in, necessitating discussions from more privileged communities regarding how to take action. Overall, the two main aspects of sea level rise—land loss and storm damages—are leading to two overarching effects of this climate disaster: economic cost and displacement.

The first detrimental effect of sea level rise is the cost to the economy. As land is lost and severe storms leave communities in tragic states of destruction, pressure builds on governments to find resources to sustain their people and help rebuild. In the year 2021, the US spent $67.4 billion on flooding and tropical cyclone damages (Smith 2020). Though the US may have been able to afford these damages and support the rebuilding of communities, many developing countries do not have this ability. Therefore, a catastrophic natural phenomenon could leave impoverished nations in dire states of need. Across the world, typhoons and superstorms have cost communities billions of dollars in damages and pose consequences for coastal risk and adaptation needs (Griggs and Reguero 2021). Without a stable economy that can support such damages, disadvantaged communities are at the mercy of neighbors who can assist. Nevertheless, though the economic dangers are concerning, even more concerning are the detrimental effects on the livelihoods of human beings threatened by sea level rise.

The second effect of GMSL rise is population displacement, as people are being forced from their homes in efforts to preserve their lives. The term "climate refugees" refers to people displaced either internally or externally due to certain climate change impacts on communities, such as rising sea levels (Sabūnas et al. 2020). It is projected that 15-27% of people living in coastal areas will become climate refugees due to sea level rise, greatly altering the density and dispersion of human populations around coastal areas (Wetzel et al. 2012). Both inundation of sea waters and damages due to intense weather events factor into these witnessed climate migrations, as evidenced by the following examples. In the Philippines, 1.9 million people were displaced after Typhoon Haiyan hit with the strongest recorded winds in history (Griggs and Reguero 2021). An estimated 70,700 people of the entire 740,000 people living in Viti Levu, Fiji, may be affected by sea level rise and storm surge, as they inhabit land close to inundated areas (Sabūnas et al. 2020). Finally, Bangladesh is experiencing high levels of internal environmental migration as people move away from areas destroyed by tropical storms and food unavailability (McLeman 2018). Though displacement and climate migration occur in an effort for communities to escape uninhabitable areas, the places to which they are migrating are little better than the homes they left. For instance, Dhaka, the city to where many people are migrating in Bangladesh, cannot meet basic human needs such as shelter, water, and sanitation (McLeman 2018). Further yet, evidence has indicated that people with limited access to quality living are forced to resort to living in hazardous locations (Walker 2012: 130). Thus, not only are the people in low-lying areas vulnerable to sea level rise, but many are also already in disadvantaged positions whereby they have limited access to resources to aid their situations. As will be described below, these experiences of climate migrants are violations of their basic human rights, and therefore those who are capable to assist have a moral obligation to do so.

Violation of Human Rights Due to Climate Change

To understand the violations of human rights relevant to the impacts of GMSL rise, it is necessary to define the foundation of basic human rights in order to assert their validity. Human dignity is the widely accepted foundation of human rights, as recognized from ontological and theological approaches. The concept of human dignity can be defined by a demanding duty of respect that is due to all human beings simply by nature of being human (Zylberman 2016). The existence of this pervasive dignity is widely supported by many philosophical approaches. First, ontology is the nature of being, whereby people have worth rooted in their metaphysical existence. According to Antonio Autiero, "...human dignity is nothing other than the fullness of being; the telos of the person that is already written within her, through natural law" (Autiero 2020). Essentially, dignity pours out of the full essence of what it means to be human. Secondly, a theological approach to the existence and vitality of dignity in establishing human rights comes from the concept of the *imago Dei*, or the image of God infused in every created human. At the creation of the world, God infused in both man and woman the image of himself: "So God created mankind in his own image, in the image of God he created them; male and female he created them" (Holy Bible: Gen 1:27). The International Theological Commission published a text to define the Roman Catholic understanding of the *imago Dei*. In this Communion and Stewardship, the authors state, "the *imago Dei* consists in man's fundamental orientation to God, which is the basis of human dignity and of the inalienable rights of the human person" (Petrusek 2017). This Roman Catholic perspective offers a clear picture of the relationship between the image of God and human dignity. Biblical texts also confirm that all people have an inherent connection to God, the creator of the universe, as He "breathed into [man's] nostrils the breath of life, and the man became a living being" (Holy Bible: Gen 2:7). God is the Sovereign Lord of the universe, making Him worthy of all honor. Thus, being created in that likeness grants humankind a uniqueness of being, or human dignity, that necessitates conservation of inalienable rights.

Leading from the establishment of dignity as the foundation for human rights, specific guidelines of fundamental rights can be defined. The United Nations has compiled the "Universal Declaration of Human Rights," which aims to give a general description of the rights that should be upheld for all human beings. Two articles are specifically relevant for the issues of environmental justice:

> Article 1: "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." (United Nations)
>
> Article 25.1: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." (United Nations)

In support of the United Nations' declaration, there is a biblical foundation for equality and rights of humankind. All people are equal under the divinity of the Lord, and that equality should be advocated for in the upholding of human rights. In Leviticus, the Lord gives Moses commands regarding justice and care for the oppressed:

> "You shall not oppress your neighbor or rob him. The wages of a hired worker shall not remain with you all night until the morning. You shall not curse the deaf or put a stumbling block before the blind, but you shall fear your God: I am the Lord.
> You shall do no injustice in court. You shall not be partial to the poor or defer to the great, but in righteousness shall you judge your neighbor. You shall not go around as a slanderer among your people, and you shall not stand up against the life of your neighbor: I am the Lord." (Holy Bible: Lev 19:13-16)

These laws honor the rights of all humans by advocating for equal pay, enabling capabilities, just order, and supporting the lives of humankind, all of which align with the "Universal Declaration of Human Rights." Furthermore, the New Testament emphasizes how Christ leveled the playing field for all human beings: "There is neither Jew nor Gentile, neither slave nor free, nor is there male and female, for you are all one in Christ Jesus" (Holy Bible: Gal 3:28). This reference affirms the equality claimed in Article 1 of the UN's declaration as well. Therefore, to deny certain inalienable rights of human beings, by failing to support vulnerable populations, denies the validity of God's image in all human beings and Christ's sacrifice for the world.

The violation of human rights is directly linked to sea level rise, as the previously described effects result in failure to uphold certain defined rights. In the above section outlining the impacts of sea level rise, it is evident that the rights outlined in Article 25.1 of the "Universal Declaration of Human Rights" are not being upheld for many populations, as living spaces and food sources are violated by encroaching sea levels. In addition, people are not being treated equally by allowing many groups to suffer while other groups thrive, especially since the advancement of developed countries is a contributing factor to climate change. In the US south, there is a negative correlation between percent population that is black and mean altitude of urban areas, meaning that communities with greater black populations are likely to live in lower-lying areas that are more vulnerable to flooding (Walker 2012: 132). Pervasive environmental injustice due to sea level rise disproportionately hinders the rights of disadvantaged people across the world, as equality and quality of life are not upheld. Therefore, there is a moral and Christian obligation to defend these disadvantaged communities.

Moral and Christian Obligations to Uphold Environmental Justice

In any instances of rights violations, the question arises as to who is responsible for the injustice, and who has the duty to pursue justice. Outside of the Christian realm, philosophers have debated the issues of morality and obligations when addressing disadvantaged populations. One perspective is utilitarianism, which is a form of consequentialism that argues actions are justified so long as they result in the greatest good for the majority of people. Peter Singer, a prominent utilitarian, claims if a person can prevent something bad from happening without sacrificing anything of comparable moral importance, they must act regardless of proximity or if others could do the same (Singer 1972). As long as the net benefit of aiding a group impacted by sea level rise outweighs the harm potentially incurred, and the greatest number of people are helped, nations in positions to help vulnerable communities have an obligation to do so. Furthermore, humans in general are inclined by the Rule of Rescue, which is "the moral impetus or knee jerk reaction to save identifiable people facing death"

(Hoffman et al. 2022). If people recognize the threats facing coastal communities around the world and find themselves in unique positions to offer aid, there should be a natural urge to act in such a way to uphold morals and rights. In the instances of sea level rise, nations surrounding vulnerable communities may find themselves in positions to help, and therefore have a moral obligation to do so.

Going off this philosophy, some argue that those on whom the blame can be placed have a heightened duty to mitigate the detriments of their actions since they are in unique positions of fault. Philosopher Thomas Pogge makes an argument that because the developed world is an active participant in poverty, by failing to uphold both the positive duty to support marginalized communities and negative duty to not harm other populations, there is a duty to actively participate to better the global condition (Pogge 2001). Hoffman and others agree with Pogge, arguing more duty may lie on those entities that are at fault. Since climate change can be correlated to the impacts of human industrialization, people or nations largely contributing to greenhouse gas emissions have a more burdensome ethical duty to aid in relief efforts (Hoffman et al. 2022). In the context of climate change causing sea level rise, industrialized nations with high greenhouse gas emissions may be more obligated to support displaced people groups and supplement economic costs. Overall, philosophical perspectives offer strong incentives to act against climate change on the basis of human rights and dignity; however, approaching the question of obligation from a Christian perspective strengthens the motivation to pursue equality and justice.

The Christian duty to pursue justice for those impacted by GMSL rise is founded on the concept of the *imago Dei* and the biblical commands of Christ. First, the *imago Dei* is closely intertwined with relationality, whereby the *imago Dei* is derived from a triune God who is in perfect relationship with Himself (Pilkington 2017). All human beings are intimately connected relationally through the *imago Dei*, and as with any relationship there is a need for general love and support between beings. Pulling from Pope Benedict XVI, "love is what guides the normative implications of appeals to dignity rooted in the *imago Dei*. Love informs our treatment of others and ourselves" (Pilkington 2017). The second greatest command Jesus gives, after loving God fully, is to "love your neighbor as yourself" (Holy Bible: Mark 12:31). Christians have a duty to love their neighbors because Christ chose to love the whole world and sacrifice himself so that all people were put on the same level by his grace. This love has no regard for time or distance but seeks the good of all people who have been and will be created in the image of God. As a response to the grace received by Christ, Christians must listen to the words of Christ, as he says, "truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me" (Holy Bible: Mt 25:40). In the context of inundation of sea water and population displacement, the "least of these" may become coastal communities suffering without the ability to save themselves, either now or in the future. In positions of privilege there exists greater obligation to "act justly and to love mercy and to walk humbly with your God," since there is both fault in the matter of global climate change and ability to provide needed resources (Holy Bible: Mic 6:8). In total, Christianity places even more duty to assist the vulnerable communities because all people are endowed with the same *imago Dei* and commanded by the words of Christ.

Thus far, it has been emphasized that land loss and storm damage due to GMSL rise is causing unwelcome economic costs and

population displacement of coastal communities around the world. Philosophy and theology both offer foundations for human dignity and fundamental rights due to that dignity, bestowing people in positions to help with a duty to do so. Therefore, the next step is assessing what people in positions of power can do to help those in positions of vulnerability and need. To begin, one way by which people can pursue love of neighbor is creation care efforts. The earth is intimately connected to the goodness of God, as it is a product of his creative work, whereby "the earth bows down to [God]; they sing praises to [him], they sing the praises of [his] name" (Holy Bible: Ps 66:4). Manifestations of this connection of God and creation should encourage Christians to advocate for good treatment of the land. One way this could be promoted is through use of clean energy, which reduces greenhouse gas emissions and make use of renewable resources. Examples of renewable energy include wind power, solar power, bioenergy, geothermal energy, and hydroelectric power (Renewable … 2022). Caring for the earth by adopting these forms of energy can help mitigate climate change and reduce harm done to vulnerable populations, therefore fulfilling in part the duty to care for marginalized communities.

Alternatively, people can act by advocating for and enforcing environmental justice. In his book Environmental Justice, Gordon Walker proposes a few different ways humanity can respond in this way. One proposed approach to pursing environmental justice could be "equalizing the capability to be resilient," which follows a capabilities-approach to human rights by "focusing justice on concepts of coping-capacity or resilience" (Walker 2012: 151). Martha Nussbaum defines the capabilities approach to global justice and human rights as having the capability to do something, with a positive emphasis that there must be active support of populations to ensure capabilities are upheld (Nussbaum 2003). This approach is also sensitive to cultural differences and leaves room for pluralism. As sea levels rise and impose threats on coastal communities, it will become necessary to prepare for these events and provide migration groups with the resources they need to sustain a sufficient quality of life, as is deserved via inalienable rights. For this to fully take effect, justice must be pursued at the levels of the state, communities, and the individual (participatory justice), thus "maintaining an inclusive and collective sense of process and participation" in enforcing procedural justice (Walker 2012: 153–154). Procedural justice maintains a cultural sensitivity regarding the contexts of people groups in need of rescue, listening to their needs and requests before imposing their own ethics on them (Hoffman et al. 2022). Displaced people groups only need to be helped so much as they perceive they need help, which is determined by remaining in conversation with the vulnerable. Finally, rescuing could also involve pursing adequate preparation in anticipation of migrating communities due to sea level rise and developing policies to enforce acceptance of climate refugees beforehand (Hoffman et al. 2022). These preparatory actions enforce justice by ensuring those in need have the capacity to migrate to safer locations or the ability to rebuild their lives and homes in the events of severe weather catastrophes. Overall, in response to recognition of the rights violation prevalent regarding sea level rise, nations with the capacity to aid impacted communities can do so by enforcing fundamental rights in a manner that respects cultural pluralism and maintains capabilities of vulnerable people.

In conclusion, humans have fundamental rights based on inherent dignity, as creatures made in the image of God, and these rights must be upheld specifically in the context of

environmental justice. As greenhouse gas concentrations in the atmosphere increase, the global climate has been shifting to warmer temperatures and higher sea levels. Consequently, land loss and severe weather damage have led to economic hardship and population displacement mainly for low-lying coastal communities. These effects put people in positions where their fundamental rights are being violated, and human beings—specifically Christians—have a duty to uphold those rights for all image-bearers. The fulfillment of this duty could look like pursuing participatory and procedural justice, whereby all people take actions to enact justice and provide equitable opportunities for those in need. The love of neighbor that Christ commands in Mark 12 does not stop at proximity, but rather extends to all people in all situations, especially for those whom God has positioned his Church to help.

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