

THE IMPACT OF CLIMATE CHANGE ON AFRICAN AMERICAN COMMUNITIES

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF POLITICAL SCIENCE

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

DEPARTMENT OF HISTORY & POLITICAL SCIENCE

TEXAS WOMAN'S UNIVERSITY

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DENTON, TEXAS

DECEMBER, 2020

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ACKNOWLEDGMENTS

This has been a dream and a journey that has been realized. I would not have made it this far without the encouragement from my parents, Mrs. Mallinee Smith-Diggs and Rev. Noah Francis Diggs. They instilled in me at an early age the belief that all my dreams could come true if I cultivated them. Thank you for letting me know that, through prayer and persistence, all things are possible. Thank you for being there to listen, vent, and encourage my journey.

To my special friends, who knew what I was trying to do, I appreciate your support and willingness to listen even when my thoughts were unclear. Thank you very much.

To Ms. Arlene Youngblood, thank you for your countless hours of guidance and patience as you helped me to work through the tough issues of this work. Your insights raised questions that encouraged me to research more and elaborate more, and therefore, helped me to create an even better dissertation.

To Dr. Hoye and the department, I know it has been a long journey. I greatly appreciate the support you all gave me that helped make this possible. Dr. Hoye, thank you for being persistent with me and for sending encouraging words, which were given at the right time and, whether you knew it or not, were highly motivating. Thank you, I greatly appreciate it.

To the reader of this dissertation, I appreciate your reading this work. It is my desire that you are inspired to want to do further research to find even more positive solutions to improve the conditions in which people are currently living in this world. We still have a lot of work to do to help our people, communities, cities, states, nations, and the world.

ABSTRACT

MALLAYA J DIGGS

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DECEMBER, 2020

African American communities are experiencing the serious effects of climate change on a nationwide level. The researcher examines in detail the hardships which have been endured by the African American communities, including the degradation of their environment, health, economic stability, and general well-being. These concerns remain an ongoing issue because African Americans are without a voice on the national stage. This study aims to verify that climate change, whether caused by natural or human means, has had a significant impact on African American communities. Change is required to promote environmental equality for all who have suffered from, and continue to be affected by, the aftermath of natural disasters. This thesis will identify what climate change is and how it originated in order to understand the effects it has had on society, particularly African Americans. This study will identify the criticisms of climate change that disregard climate change is part of the problem. The study will research other global experiences with addressing climate change of regions that have similar problems to those of African American communities in the United States. The purpose of the researcher's stance is to understand what the United States can extract, gain, and lose. The study will argue that the focus of the United States government is not on climate change or its effects on minority communities. On the contrary, the effects of climate

change in the communities are downplayed by the media, not taken seriously, or not addressed to the extent they should be. At present, the struggle for addressing this problem remains the responsibility of local communities that still need more political and governmental support.

To test this hypothesis, due to the COVID-19 quarantine, an online survey was taken from a national poll of one thousand African Americans to capture their responses regarding the effects of climate change. The researcher also used graphs and research studies conducted by other institutes to support the hypothesis that African American communities are disproportionately affected by climate change.

These results suggest that climate change does impact the African American communities, and that without the United States government enacting effective climate change policy, the problems are likely to persist. African American communities can only rely on non-profit organizations to help their communities deal with the consequences of climate change and to promote change and equality when disaster strikes.

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CHAPTER I

WHAT IS CLIMATE CHANGE AND HOW DID IT ORIGINATE?

As defined by the United Nations:

Climate Change is the defining issue of our time and we are at a defining moment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly. (United Nations 2017, 1)

"In 2016, Kira Johnson" (Wang 2020, 1) an African American mother, passed away due to birth complications. Prior to Johnson's death, she urgently told the doctors that she was having "severe abdominal pain" (Wang 2020, 1). According to the claims of Johnson's family, "doctors at Cedars-Sinai Medical Center in Los Angeles" (Wang 2020, 1) informed the family that Johnson's pain was not of any importance (Wang 2020, 1). Due to the doctor's not assisting Johnson sooner, Johnson passed the next day during "an emergency surgery" (Wang 2020, 1). Rep. Robin Kelly of Illinois, the representative of the family's district, discovered that Johnson passed due to "childbirth complications" (Wang 2020, 1).

Black women are three to four times more likely to die in childbirth than white women. In Kelly's home state, the disparity is even worse: Black

women are six times more likely to die. The underlying causes are complex, rooted in the foundation of the American healthcare system, but one finding reveals that climate change plays a surprisingly influential role in these pregnancies. (Wang 2020, 4)

This implies that African Americans are still being "left out of the conversation around climate and the transition to a clean energy economy" (Third Way 2020, 3) in such a way that will be harmful to their communities. Until recently, with the movements' and protest in the wake of George Floyd's death in May of 2020, the African American communities were not considered to have mattered enough to be part of the conversations in society. There have not been many studies on the impact of climate change on the African American communities on a grand level, other than from their own people. There "are proportionally far fewer people who work in this space, minimizing visibility and making inclusive solutions harder to implement" (Third Way 2020, 3). To understand how climate change affects communities, one must first see what climate change is, the history, and from where it originated. It is necessary for all of society to understand the effects of climate change on African American communities, to help bring it all to an end (Third Way 2020, 4). When examined through by history, the changing of the weather can be difficult to understand and can even seem mysterious at times.

In the mid-1700s, the first reliable temperature scales were created by the German scientist Daniel Gabriel Fahrenheit, who constructed the mercury-based thermometer for the first time with a boiling point and freezing point of water established at 212 degrees and 32 degrees, respectively. Swedish astronomer Andre Celsius followed with a far

neater proposal, assigning a boiling point of 100 degrees as the difference between the two key temperatures. After his death, the scientific world adopted Celsius as the universal temperature scale, used today nearly everywhere in the world. In 1686, Edmond Halley was famous for his reputation as Astronomer Royal, and is known today for being the creator of the first meteorological map. Halley also published a paper that explained the trade winds that was very close to the description of the engine of the global weather system. "He suggested that the flow of the winds was created by the sun heating air at the Equator that were later called the doldrums which are the trade winds and how they operate" (Lynch 2002, 38-39). Figure 1 below are illustrations of the scientists from left to right, of portraits from that period (Lynch 2002, 25).



Fig. 1. List of 16th Century Scientists. From left to right: German scientist Daniel Gabriel Fahrenheit, Andre Celsius, Galileo Galilei, and Edmond Halley (Photographs from Lynch 2002, 25)

What is Climate Change?

Climate change is considered, "a set of physical phenomena and a public policy issue, sometimes also referred to as global warming" (Weber & Stern 2011, 315).

The definition of climate is a set of weather conditions prevailing over a region for a period of time. That period of time may be defined as averaging

at least three decades which is roughly one human generation. By contrast, weather is the instantaneous state of the atmosphere; it is the statistical ensemble of the weather that is used to quantify the state of the climate. (MacCarcken 2019, 12-22)

According to the United Nations Framework Convention on Climate Change (UNFCCC), "climate change refers to a change of climate that is attributed directly or indirectly to human activity, that alters the composition of the global atmosphere, and is, in addition to natural climate variability, observed over comparable time periods" (UNFCCC 2011, 2). This simply declares that the UNFCCC on climate change addresses changes in climate caused by humankind. To be clear, this does not imply that human activity controls the weather conditions, but that human actions affect climate through the everyday activities that people engage in. Many people are unaware that greenhouse gases mainly come from everyday structures of life, including driving cars, using electricity in the home, heating, and that most fossil fuels from plants that go into the atmosphere that is threatening to the environment. "The main objective goal of the climate change legal framework is to guarantee to attain stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Ruppel et al. 2013, 243). We now have a clear understanding of what climate change is and a brief history lesson of how it started. The research continues by examining the process of how climate change connects with the weather and its impact on society, in particular, that of the African American communities.

Understanding the Process of Weather

This research recognizes the prime variables that support the argument for the existence of climate change and the ordinance of weather. Therefore, it is important to discuss what climate change is and how it has developed to fully understand how it impacts society and humanity.

The weather conditions in the US are constantly changing (Douglas 2005, 7). It is becoming increasingly unpredictable and more serious in the current century. "Tornadoes are crossing farmlands and now are found in cities, hurricanes are growing more potent with more frequent, floods frequently remove people from homes, and summer droughts and paralyzing winters are in the news with alarming frequency" (Douglas 2005, 8). The study will start with the origins of the weather. Collier and Webb (2002) provide a detailed description of the weather, which they identify as being frightening and volatile, regardless of whether on a large or small scale, or on a short or long basis (20):

Small disturbances, such as a storm or hot spot, can explosively amplify to near global scales and then merge to more global scales and then merger with more stable, typical flow. The atmosphere is like a surging roiling river that has well-worn pathways that it travels. These pathways create our climate. An understanding of weather patterns requires an awareness of turbulent movement in time and three dimensions. (Collier & Webb 2002, 20)

Collier and Webb explain that climate is all about thermodynamics, with heat being the heartbeat of the earth's weather:

The greatest portion comes from the sun, though a much smaller fraction is still being released from nuclear decay deep within the earth. The sun converts 600 million tonnes of hydrogen into helium every second. A little less than 1 percent of the hydrogen is converted into energy rather than helium. Solar energy reaches us as a radiated electromagnetic wave broadcast across a 150 million km of space. Our planet, a mere 12,000 Km across, catches only an infinitesimal fraction of these waves and returns to heat. (Collier & Webb 2002, 21)

They continue to explain that,

solar radiation is produced in a range of wavelengths, most of which are between 0.05 to 2.0 micrometers. Most of the solar radiation that reaches earth is in wavelengths of 0.4 to 0.7 which happen to be visible spectrum of light to which our eyes have adapted by evolution. Radiation between 0.01 and 0.4 which is ultraviolet is absorbed by oxygen and ozone in the upper atmosphere. (Collier & Webb 2002, 21)

As a result, the earth heats up with "a small share of the radiation that penetrates the filter of the atmosphere and heats the planet in the visible spectrum" (Collier & Webb 2002, 21).

Collier and Webb (2002) state that, "the earth receives only one part in two billion of the sun's total radiated energy, 1.94 calories received over each square centimeter of the surface each minute if that patch of the earth happens to be oriented at the right angle to the sun. When energy strikes the earth's atmosphere, two things happen: some solar radiation is reflected into space, while the remainder is absorbed by the earth and atmosphere and then converted into heat" (21). The earth and, "atmosphere reflect 31 percent of all incoming solar radiation back into space. Sunlit clouds reflect between 40 and 90 percent, depending on their thickness and internal structure. Sun rays that strike the ocean perpendicularly around the equator are mostly entirely absorbed." (Collier & Webb 2002, 21)

There is also some of the radiation that is absorbed by the molecules that compose our atmosphere, this makes the planet a more pleasant place to live (Collier & Webb 2002, 22):

Nitrogen, oxygen, and water vapor constitute 99 percent of the atmosphere. Nitrogen absorbs only a small amount of incoming solar energy. Oxygen optimally absorbs wavelengths shorter than 0.4 and plays a minor role in capturing solar radiation. Ozone resides high in the stratosphere at altitudes of 30 to 80 km and is particularly adept at absorbing incoming ultraviolet rays that would otherwise be damaging to life on earth. (Collier & Webb 2002, 22)

It is explained that "half of the sun's incoming energy actually reaches the earth's surface" (Collier & Webb 2002, 22). Once a part of the arriving energy is reflected from the surface, it then bounces back through the atmosphere to space. If there is energy from the sun that is left behind, the remainder stays and is either converted to water or absorbed by the earth (Collier & Webb 2002, 22). They further explain that,

The laws of thermodynamics dictate that the earth, once heated must radiate energy back towards space. Because the earth is much cooler than the sun, this occurs in much longer wavelengths than those of incoming solar radiation. Water vapor varies from virtually 0 to 4 percent of the total volume of the atmosphere and efficiently absorbs infrared radiation in 5 to 8 wave lengths and in wave lengths exceeding 13. Carbon dioxide accounts for an average of only 0.03 percent of the atmosphere, but it avidly absorbs infrared radiation at 4 and 13 to 17 wavelengths. Consequently, water vapor and carbon dioxide, both poor absorbers of incoming solar radiation are very successful at collecting outgoing infrared radiation. The atmosphere is thus heated more by outgoing radiation from the earth than directly by the sun. (Collier & Webb 2002, 23)

They go on to explain the evaporation cycle, in which, "the atmosphere gains heat from the earth through two additional processes beyond reabsorption of outbound radiated heat" (Collier & Webb 2002, 23). From there, the "air is directly warmed by conduction within a few centimeters of the earth's surface. As it heats, the air expands and grows less dense. As it becomes more buoyant, it tends to rise, thus transferring heat

into the upper atmosphere by convection. Heat can also be transferred from water as it jumps from low energy liquid to a higher energy gas, a produced is evaporation. Heat is transferred into the atmosphere when that water vapor condenses, leaving heat behind as liquid waterfalls, as rain is known" (Collier & Webb 2002, 23).

This is a brief description of how the weather is constantly changing, and the long-term patterns of redistribution are considered climate movements in the atmosphere. This is the background for the next variable of this research, the negative impact on African American communities which are examined in detail pertaining to human interactions. In history it was identified that there is a "coincidence of climate change and arm conflict" (Scheffran et al. 2012, 869) that results in human conflicts increasing. In Europe before there was technology use for operations, and machinery it was concluded that cooler periods were more likely to be related to periods of violence than warmer phases (Scheffran et al. 2012, 870). As for the US, the most costly natural disasters ever reported have taken place in the last 10 years. Scientists are growing increasingly concerned that the US has entered a stormier weather cycle and the threat of weather disasters are increasing as cities expand and more people move (Douglas 2005, 8). This indicates that changes in the weather do have an impact on the human race, particularly the African American communities, because of climate change. This research addresses this impact further in the following chapters. Next, the researcher addresses the approach to climate change.

The Approach to Climate Change

To improve awareness to keep people educated on climate change, the public needs to be made aware through local and statewide platforms, not just within the African American communities. By keeping all informed in both the scientific and policy communities, "climate change emerged as a public policy issue with improved scientific understandings of the phenomenon, resulting in growing concern" (Weber & Stern 2011, 315).

Weber and Stern (2011) "reported that in 1987, Congress passed the Global Climate Protection Act and directed the Environmental Protection Agency to propose to Congress a coordinated national policy on global climate change and that the Secretary of State coordinate diplomatic efforts to combat global warming" (315). The Global Change Research Act was initially created as a tool of a national research plans to study global environmental change, including climate conditions with the explanations of causes and effects with possible reactions (Weber & Stern 2011, 315). The aim of the research was to see if climate change was an actual factor in society, and if so, to make plans to address climate change and spread awareness. Once climate change was identified as a legitimate concern, the next objective was to respond to climate change and increase public awareness and formed, "the main international policy process on climate change is the UNFCCC Conference of the Parties (COP)" (Waage et al. 2015, 13). The organization was created with policymakers of different nationalities who came together with ideas to create plans, policies, and procedure goals to address climate change collectively that was led by "the Kyoto Protocol, the only internationally and legally

binding treaty on the topic that includes the important principle of common but differentiated responsibilities,' referring to Annex 1 countries,' namely the richer, more developed countries with historically the most emissions, as having more responsibility for climate change" (Waage et al. 2015, 13). The ideal goal of the plan was to make an effort to cut their general emissions of greenhouse gases. Today, the UNFCCC COP encourages countries to use methods of climate change adaptation and to develop their own plans to help keep greenhouse gas emissions low. The policymakers started by seeking an international legally-binding treaty on goals for climate change mitigation, which led to the Kyoto Protocol, the only internationally and legally-binding treaty on the topic. The Kyoto Protocol includes the "important rule of common but differentiated responsibilities, referring to Annex 1 countries, namely the richer, more developed countries with historically the highest levels of emissions, as having more responsibility for" climate change (Waage et al. 2015, 13).

Climate change will never be stable, the weather is in a constant state of change. America has never experienced a climate change crisis such as the one it is currently facing, due to the impact that climate change has on water, energy, and pollution (Kelman 2014, 1). Yet, the African American communities that experience far harsher effects of climate change receive no particular attention due to the extreme impact.

The objective of this research is to analyze climate change and the impact it has on the African American communities to bring awareness. As well as bring attention to the negative effects it has on society including behaviors, climate change throughout centuries played a role in human history. The gravity of the situation today

is such that action must take place to ensure that the most vulnerable of the affected communities receive appropriate assistance. When temperatures rise to a point that is unbearable, with no assistance for African American communities, this can cause friction between local or state leaders and communities with a response that may be volatile (Scheffran et al. 2012, 871). The volatile displays can account for the high increase of crime within African American communities, due to needs not being met and or increases of temperature. "This reaction may lead to tipping points toward societal instability and an increased likelihood of violent conflict" (Scheffran et al. 2012, 871).

Is Climate Change Real?

One vital question needs to be addressed in order to debate the principal objective of this research study on the effects of climate change on minority communities: does climate change exist? Some groups believe that climate change is non-existent, including members of the scientific and political communities.

Criticisms of Climate Change

A criticism regarding the climate change existence is a result of ignorance and a lack of information, people confuse climate change with its negative impacts on the environment. The average individual does not have a comprehensive understanding of climate change, people base their opinions on news reports in the media and social media, but they do not have all the information to make an accurate assessment or to validate scientific reports. President Trump is a prime example of an individual not understanding

the facts. For instance, President Trump, "has repeatedly called climate change a hoax. Accordingly, he filled the ranks of his transition team and cabinet with climate science denialists and fossil-fuel industry shills" (Foster & McChesney 2017, 99).

The second criticism is based on the effects of global warming will never occur or the denial of the validity of the scientific findings (McCright & Dunlap 2011, 5). Some individuals are more confident in their own knowledge of climate change, even when their beliefs conflict with the scientific consensus. "Identity-protective cognition and system-justifying tendencies, in which individuals reject information viewed as contradicting their identity, are especially strong within conservative groups. Such processes lead to questioning information from outsider groups (e.g., liberals and environmentalists) that they reject as threatening their own identity or the economic system. Such tendencies provoke strong emotional and psychic investment, easily translating into (over)-confidence in their own beliefs" (McCright & Dunlap 2011, 5).

Civilization must have air, and energy from the sun to shield mankind. This energy is essential. For this energy reflects from the sun and back to the atmosphere, has been an ongoing cycle of energy that is has always been routed back and forth to for life on earth to continue and exist. Although when energy is not able to run the cycle, but are blocked or trapped in the atmosphere, that creates excess greenhouse gasses on earth. As a result, this leads to various climate conditions (Armstrong et al. 2018, 8). "When excess energy is trapped and cannot leave the atmosphere, its heat warms the earth. This action

leads to poor air quality and to triggering the earth's surface, including oceans, land, and air, to heat up" (Armstrong et al. 2018, 8). This proves that climate change is real.

Greenhouse gases are essential to life on earth. For example, plants depend on carbon dioxide (CO₂), which is also an important greenhouse gas contributing to global warming. And greenhouse gases help to maintain the earth's surface and oceans at temperatures that enable life to flourish on our planet. But as greenhouse gases accumulate beyond their historic levels, they prevent more and more of the energy reaching the earth from going back into space. But when humans start changing the balance of gases in the atmosphere specifically, by significantly increasing the concentration of CO₂ and other greenhouse gases, more heat is emitted, including heat headed back toward the earth's surface. This leads to warming of the atmosphere, the oceans, and the land surfaces. (Armstrong et al. 2018, 8)

Scientists can predict many trends with confidence, including that the earth's temperature will increase and the seas will rise. Trends such as the intensity of storms and shifting rain patterns, however, are much harder to forecast. With this in mind, depending how people react towards climate change, it is still nearly impossible to alter the outcome. Seeing that humans play a part in the harms of climate change and that they are moving to an adaptation plan that is more ecofriendly to the environment, it still may be too little too late. The damage is already done (Dobbins et al. 2015, 77).

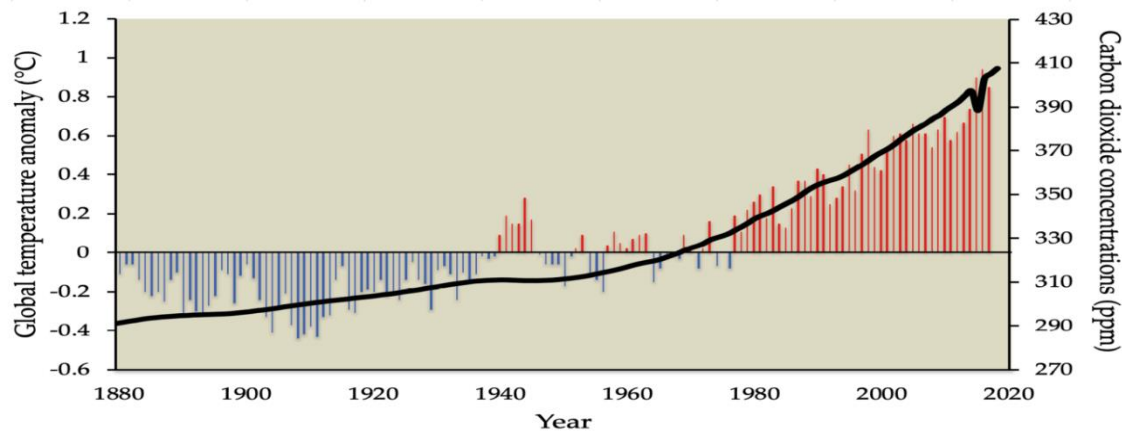


Fig. 2. Increase of Atmospheric Gases Atmospheric concentrations of important long-lived greenhouse gases over the last 2,000 years (Data from Intergovernmental Panel on Climate Change [IPCC] 2007, 135).

Figure 2 is an illustration of greenhouse gases increasing by ppm on the right side of the graph. Climate change can be caused by human activity, reflected on the left side of the graph, as shown across the years displayed on the bottom of the graph. As the graph illustrates, "human activities result in emissions of four principal greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and halocarbons (a group of gases containing fluorine, chlorine and bromine). These gases accumulate in the atmosphere, causing concentrations to increase with time" (IPCC 2007, 135). The high readings are due to human activities, captured in the following observations taken from the IPCC report on climate change (IPCC 2007, 135):

- "Carbon dioxide has increased from fossil fuel use in transportation, building heating and cooling and the manufacture of cement and other goods" (IPCC 2007, 135).

- "Methane has increased as a result of human activities related to agriculture, natural gas distribution and landfills. Methane is also released from natural processes that occur, for example, in wetlands" (IPCC 2007, 135).
- "Nitrous oxide is also emitted by human activities such as fertilizer use and fossil fuel burning. Natural processes in soils and the oceans also release N₂O" (IPCC 2007, 135).
- "Halocarbon gas concentrations have increased primarily due to human activities. Natural processes are also a small source. Principal halocarbons include the chlorofluorocarbons, which were used extensively as refrigeration agents and in other industrial processes before their presence in the atmosphere were found to cause stratospheric ozone depletion" (IPCC 2007, 135).

Human activity has an impact on climate change as observed, and from the standpoint of nature, climate change is real. The weather changes frequently, "in contrast to short-term atmospheric changes — or weather — climate refers to longer-term variations. The climate is considered to be the average weather for a particular region over an extended period of time" (Armstrong et al. 2018, 7). On these grounds, increases in average temperatures over a period will provide evidence of a changing climate (Armstrong et al. 2018, 7).

Climate change impacts weather forecasts, as scientists state that there will be more areas in the region, where they will have dryness and droughts. Also, at the same

time in other regions they will experience the opposite, heavy periods of rain and moisture in the air (Armstrong et al. 2018, 1). The prediction of intense weather from natural causes took place in 2017 as "warmer and wetter atmospheric conditions and warmer ocean temperatures intensified Hurricanes Harvey, Irma, and Maria in the Eastern United States, while dry weather exacerbated California wildfires" (Armstrong et al. 2018, 8).

Natural climate change is also brought about by geologic factors, such as the arrangements of the continents or the connectedness of the oceans. These conditions change so slowly that they might be more appropriately considered as a framework within which climate changes occur. The theory of plate tectonics provides an explanation of natural changes in the climate, explaining the migration of continents around the earth. Over 250 million years ago, "all the earth's continents were combined into one landmass known as the Pangaea" (Collier & Webb 2002, 33). As time evolved, the continents clashed together or drifted apart and eventually became seven continents. Worldwide climate regimes shifted dramatically. As this took place, heat flowed around the globe, causing radical changes as the oceans rearranged themselves (Collier & Webb 2002, 33).

Three million years ago, the land masses of North and South America became connected at the Isthmus of Panama. Ocean currents, driven by trade winds, had previously been able to flow without interruption from the Atlantic into the Pacific. After the Isthmus rose, these currents were deflected north and south, spiriting tropical heat away from the equator. If

the Atlantic and Pacific oceans could mix today, our climate would be radically different such as England would be an icebox. (Collier & Webb 2002, 33-34)

In addition to human activity and geologic activity affecting climate change, the natural aspect of winds that cause temperatures to drop on a global level is yet another cause of climate change. Winds help smooth out weather extremes on the planet, from extreme tropical heat to the freezing temperatures at the north and south poles of the earth, creating conditions more favorable to human survival. However, "there are winds that mix cold and hot, wet and dry. This process is called wind circulation which is the air around the planet. Winds were the constants of the globe; they can vary from being stronger or weak, no matter what they are always constant" (Lynch 2002, 39). Another phenomena, the doldrums, "are a band around the equator where the airstreams borne by the two sets of trade winds, in the northern and southern hemispheres, flow together and meet" (Lynch 2002, 39). These types of winds are called, "the Intertropical Convergence Zone (ITCZ). This band fluctuates slightly away from the equator and back according to the seasons. But wherever the band lies, the point where the winds meet become a place of no wind, for where the airflow comes together there is nowhere else the wind can go, except up. They lie above the region where the sun's heat is the strongest on the globe, where the air warms and rises off the ocean in a still, moist column, lifting moisture from the sea as water vapor, climbing to form huge, towering clouds" (Lynch 2002, 39). Additionally, it is described that as warm air goes into the atmosphere, it then becomes a part of the circulation of the atmosphere due to the travel period. The wind can become

so strong that it can pick waves in a surface wind, moving on to whirl in a tropical cyclone as well as falling to earth as a snowstorm. Winds can be a powerful force depending on what is interacting with them, they can form tornados and hurricanes as well as floods (Lynch 2002, 37).

Summary

In closing, "the planet's average surface temperature has risen about 1.1°C (2.0°F) since the late 19th century" (Armstrong, Krasny & Schuldt 2018, 12). The average rate of heating is 10 times faster compared to the heating rate of the ice age from that period. Since 1950, typical temperatures on land and oceans have been warmer than the temperatures of the past. As for the regions of the Northern and Southern Hemisphere, it has been noticed that temperatures on land and water are rising in an accelerated fashion (Armstrong, Krasny & Schuldt 2018, 12). These "variations in the Earth's tilt and orbit around the sun, called Milankovitch cycles, change the earth's climate over the course of tens or hundreds of thousands of years, which determine how much solar radiation reaches the earth" (Armstrong, Krasny & Schuldt 2018, 12). These temperature changes still have an impact on the earth today and it is unknown how the changes will impact the future centuries from now. The natural causes of climate change do not explain the cause of the increasing temperatures and pattern changes, but with research and observations of the changes in weather, it is safe to conclude that they "fit with the predictions of greenhouse gas climate change models, and that increases in human-emitted greenhouse gases are responsible for climate change" (Armstrong, Krasny & Schuldt 2018, 12).

The main objective of this chapter is proven with evidence that, the climate change theory is real. Also, to show that climate change is not only caused by natural causes, but human interference has also been shown to be a driving force behind climate change and global warming. Now that I have established the scientific bases for recognizing the reality of climate change, my next chapter will examine how the US is addressing climate control and will refer to other countries to better understand their solutions and remedies.

CHAPTER II

ADDRESSING CLIMATE CHANGE IN AFRICAN AMERICAN COMMUNITIES

The argument of this thesis is that climate change has a serious impact on the African American communities. The effects of this impact disturb the environment where African American communities tend to live, in the areas of health, economy, livelihood, and social inequality that are examined in the following chapters. The next position in the development of the argument is to present information on the various media platforms that address climate change issues relevant to African American communities.

It is critical to keep the American society informed of events that have not been discussed openly in public fora. There is not broad recognition in the US of the importance of climate change in terms of how it impacts the African American communities, nor that the African American communities has specific concerns on the climate change issue different than those of the general public. For instance, African American History Month is recognized every February nationwide through the media. Other communities that are not of African American descent experience and are very much aware of the celebration of Black history. So, what is the difference in discussing climate change using the same sources? Furthermore, the problem needs to be addressed and resolved by identifying and correcting areas of concern to improve the effects of climate change within the African American communities.

As discussed in Chapter One, the UNFCCC countries agreed to strengthen long-term cooperation to combat climate change. This notion is guaranteed to equity in the

context of sustainable development for all citizens. Equity is defined as, "a fundamental concern for climate law and is anticipated in Article 2 of the UNFCCC, which stipulates that vulnerability and equity amongst countries is a major consideration when developing legal and other mechanisms for addressing climate change" (Ruppel et al. 2013, 603).

As a candidate, Trump ran for the presidency "on a pledge to abandon the Paris Agreement and resurrect the coal industry by relaxing environmental regulations and eliminating policies favoring renewable energy" (Coplan 2020, 272). Trump was able to achieve an electoral college majority of conservative, rural, and industrial states. Following the Trump administration's "withdrawal from the Paris Agreement, state and local leaders stepped forward to announce their commitment to carrying out the spirit of the Paris Agreement at more local levels" (Coplan 2020, 272). Cities and states joined a climate alliance that promised to meet the goals of greenhouse gas reduction as pledged by the United States under the Paris Agreement. The governors similarly pledged their states to implement the Paris reductions despite a formal withdrawal by the United States. Many states have thus far joined the pledge to implement the United States' Paris commitment (Coplan 2020, 272).

African American communities that are impacted by climate change are calling for justice for their environment. "Environmental justice is a social, political, and moral struggle for human rights, healthy environments, and thriving democracies led by residents of those communities most negatively impacted by economic and ecological degradation" (Ruppel et al. 2013, 100). The word, "environmental justice came from activism" (Ruppel et al. 2013, 100) that started within the African American communities

from the 1960's. This display of activism started with a peaceful mass movement of African Americans who stood together, marching down the streets singing, "we shall overcome", identifying strength, black power, and faith in God as a source for change. That moment gave birth to the social protests and movements that have continued today by people of all colors demanding equality for all (Ruppel et al. 2013, 214).

The legacy of non-violent protest led by Dr. Martin Luther King, Jr. and Ms. Rosa Parks, demonstrations are still alive, well, and striving in the African American communities. The history of African American culture has taught that "where there is a will there is always a way." In the US, that same spirit, dynamism, and the fruitfulness of these intersectional relationships come to life, for example, in the work of ACE: Alternatives for Community and Environment, WEACTION: West Harlem Environmental Action, NuestrasRaices, Inc., Communities for a Better Environment, Black Mesa Water Coalition, and in many other productive alliances building coalitions and actions for change. These nonprofit organizations are working in their cities addressing the needs of the underserved, urban communities that are low income and with few resources. These organizations focused on protecting the moral human rights that may be threatened and on securing the means of, "survival, such as food, water, and shelter. These claims are being discussed as specific rights, mainly in the sphere of legal rights. In effect, they are necessary ancillary claims to the right to life and health. Without them, life is impossible – or, in the case of the right to shelter, at least devoid of human dignity" (Ruppel et al. 2013, 214).

The NuestrasRaíces project specifically addresses the need of food, water, and shelter. NuestrasRaíces, an Afro/Latino neighborhood organization, "was founded in 1992 by a group of community members in South Holyoke, Massachusetts that had the goal of developing a greenhouse in downtown Holyoke for the low-income community" (NuestrasRaíces 2017, 1). Community members realized that the physical landscape of the city was in horrible condition with frequent felonious activity. The communities came together, deciding to take to improve and restore the lot and then give it back to the residents. The communities created the first community garden to grow their own produce to give to their community, sparking the growth of urban agriculture in Holyoke under the umbrella of NuestrasRaíces. The community gardens have improved the urban surroundings and added their cultural sense of pride. The community added to their garden their very own unique spice and unique spaces of cultural and historical connection, where the community members of all ethnic backgrounds to, all ages come together to share knowledge and experiences about growing healthy nutritious food. The communities have control over what they intake that is healthy for the community as a whole, that is reasonable for their expenses. The community gardens were in an area without a full stocked and service grocery story, the communities on their own bridged a gap through the community garden plots. This achievement has improved the value of individual families and within the community (NuestrasRaíces 2017, 3).

The "Black Mesa Water Coalition (BMWC) organization was formed in 2001 by a group of young inter-tribal, inter-ethnic people dedicated to addressing issues of water depletion, natural resource exploitation, and public health within the Navajo and Hopi

communities" (BMWC 2017, 1). BMWC's initial goal is to inspire their communities and work with surrounding communities with organizations to address their communities' needs collectively. The BMWC has three areas of focus: "No Coal and Environmental Justice, Green Economy, and Leadership Development. These three initiatives seek to force a transition away from the fossil fuel economy, replace it with a green economy, and ensure long-term support for a diversified, community-owned and sustainable way of life" (BMWC 2001, 1). The work of the BMWC has paid off; they stand today as the leader in the Southwest region for addressing, "energy justice issues, restorative economies, and climate justice advocacy" (BMWC 2001, 1).

Communities for a Better Environment (CBE), was launched in California in 1978, is an organization, "born out of the wave of activism that began in Chicago during the 1970s. CBE focuses its work where conventional policies of profits-before-people do the most harm, in poor communities and neighborhoods where people of color are the majority" (CBE 2016, 2). CBE's organizing engages, educates, and spreads awareness to the African American low-income communities of color to teach them self-value of inner power to build towards their future. CBE's programs empower communities to fight local sources of climate concerns in the community for a healthier community through support for initiatives like Green Zones and locally controlled alternative energy sources. CBE's community organization also works to bring healthy food to their communities. CBE had climate change victories and achieved funding for healthcare, and other public health support. CBE also pushed for strict regulations and implementation to reduce pollution within their communities. CBE is committed to fighting for climate justice policies that

combat climate change and sustain, protect, and support communities around the world (CBE 2016, 6).

The mission of the National Association for the Advancement of Colored People (NAACP) is to secure African American populations, regardless of the class of the community that an individual is from. According to the NAACP, all persons are entitled "to political, educational, social, and economic equality of rights not based upon race, and to ensure the health and well-being of all persons simply because they are a person on this earth living and breathing" (NAACP 2020, 1-3). As for climate change, the NAACP's Environmental and Climate Justice Program goals focus on target needs to address the "disproportionate impact on communities of color and low-income communities in the United States and around the world" (NAACP 2020, 1). With respect to climate change, the organization works at the local level to reduce harmful emissions, particularly greenhouse gases. The NAACP fights to remove toxic plant operations in African American communities to prevent further damage to environments. The organization also provides educational training to the public, to younger African Americans and "law enforcement to strengthen and develop monitoring, and enforcement of regulations at federal, state, and local levels" (NAACP 2020, 3). To address climate change in the African American communities, the NAACP is an advocate for clean efficiency energy. The organization works "at the local level with small businesses, unions, and others on developing demonstration projects to ensure that communities of color are accessing revenue-generating opportunities in the new energy economy, while providing safer, more sustainable mechanisms for managing energy needs for our

communities and beyond" (NAACP 2020, 1-2). There are certain policies and procedures that are in place to guarantee that, through Energy Efficiency Resource Standards (EERS) and the annual screening of energy companies, the NAACP ensures that energy saving goals are being met (NAACP 2020, 2).

The climate change focus has always been on, "national and international proposed actions and policies, with some state programs also drawing attention"(Deane, Dorsey & Hayden 2014, 4). For this reason, local level organizations within communities have stepped in to be a force of nature to ensure that the needs African Americans in low-income areas are being met. Local organizations are spreading awareness, encouraging communities, rebuilding, and restoring them to have the power to be engaged against all setbacks. When African American communities do not have a voice, they stagnate, for nothing is done to address the impact of climate change on their communities. When African American communities lack a voice, they must try to make change from the bottom up, change that moves slowly to the top and that may never reach the national or state level for recommendations on how help improve their communities (Deane, Dorsey & Hayden 2014, 4).

Summary

The purpose of this thesis is to show how climate change affects African American communities. "Climate change has been described as a change in the average weather conditions, including temperature and rainfall, in a region over a long period of time" (NASA 2020, 1). African American communities experience greater negative effects of climate change due to the lack of programs and support to adequately deal with

its impacts. Studies have documented that climate change is primarily due to human activity and leaves lasting impacts on communities of color.

African American communities have far fewer, and in some cases no, resources to respond to the effects of climate change in comparison to other communities. The lack of power and a voice also constrains the ability of communities to respond to climate change effects and to construct a local base of knowledge to provide climate solutions. When African American communities are restored to power, they will be able to address and produce platforms in ways that can promote health and reduce greenhouse gas emissions (Hoerner & Robinson 2008, 2).

The African American communities are at greater risk of climate change. As reported:

seventy-one percent of African Americans live in counties that are in violation of federal air pollution standards, as compared to 58 percent of the white population. Seventy-eight percent of African Americans live within 30 miles of a coal-fired power plant, as compared to 56 percent of non-Hispanic whites. Asthma has strong associations with air pollution, and African Americans have a 36 percent higher incident rate of asthma than do whites. Asthma is also three times as likely to lead to emergency room visits or deaths for African Americans. (Hoerner & Robinson 2008, 2)

Even if African Americans were not prone to poverty, social inequalities based on race and gender would still impact the communities. People living in poverty, regardless

of their age and depending on the environment where they live, are subject to the effects of climate change (White 2018, 79). "These divisions are overlaid by entrenched disparities based on class division, gender differences, and inequalities derived from race, a social rather than biological construction, and ethnicity" (White 2018, 79). In Chapter Three, the view shifts toward developing countries such as those in Southeast Asia and Southern Africa, populated by Indigenous people who are experiencing the backlash of climate change. The purpose of the next chapter is to examine other countries that the US can refer to for solutions and remedies of how to address climate change in their communities compared to how the US addresses the impacts of climate change in African American communities.

CHAPTER III
GLOBAL EXPERIENCES WITH ADDRESSING CLIMATE CHANGE
Southeast Asia

The Paris Agreement, of which the United States was initially a part, was designed for countries to come together and, share ideas about how they were going to collectively address climate change. Seeing firsthand how impoverished countries of the Caribbean, the Middle East and Asia are coping in their environments due to a lack of resources, disease, and the impact of weather crises was distressing. These communities were still optimistic and appeared grateful for the little that they had, despite their conditions. This chapter examines foreign countries and how they are addressing the effects of climate change, which echoes the experiences of the African American communities in North America. The goal is that North America implements solutions and remedies to address the impact of climate change on its African American communities. Chapter three further studies Southeast Asian countries and their methods for dealing with the effects of climate change. The countries included in the study are the Philippines, Vietnam, Cambodia, Indonesia, Myanmar, Laos, Malaysia, and Thailand.

According to some accounts, climate change impacts in the Southeast Asia region are is highly subject to intense weather conditions, including increased temperatures with heavy rain fall that is projected to be the worst in the future of the region (Salamanca & Nguyen 2016, 8).

Thailand is the most affected country in the Southeast Asian region, "Thailand's Department of Meteorology reported, that the annual mean temperature rose by

approximately 1 degree Celsius from 1981 to 2007" (Marks 2011, 231). As stated by the IPCC, "the upward trend in temperature is very likely due to the increase in greenhouse gas concentrations caused by human activity. It is expected that the daily maximum temperature in Thailand will increase by 1.2 to 1.9 degrees Celsius by 2050. Furthermore, the number of rainy days and the level of precipitation in Thailand has decreased over the last 50 years" (Marks 2011, 231). Thailand is decreasing in yearly heavy rain storms. Scientific studies predict that the Thailand will experience more heavy rain fall in a short span of time that will produce damaging conditions such as tornados, hurricanes, and floods (Marks 2011, 231). According to Marks:

As the amount of carbon in the atmosphere accumulates, these two trends increase in temperature and decline in annual precipitation plus others, such as an increase in extreme weather events and a sea-level rise, are expected to accelerate over the next few decades, causing numerous environmental problems for Thailand. (Marks 2011, 233)

Livestock and agriculture are essential aspects of life and the economy in the countries of Southeast Asia. Climate change in Thailand exacerbates the already very hot temperatures in the region. As a result of the heat, food quality is affected, and with an increase in temperature, there is an increase of outbreaks of disease that result in reduction of food in the region from livestock (Marks 2011, 235). "One study found that Thailand's southern region, which has a hot and dry climate, was at the highest risk of losing livestock. Freshwater fish populations are also predicted to shrink due to the reduction of wetlands and changes in migration patterns" (Marks 2011, 235). The Southeast Asia region's

agriculture, "accounts for more than 10% of the region's Gross Domestic Product (GDP)" (Salamanca & Nguyen 2016, 2). The region itself is sensitive to climate change and the impact of the conditions that it produces, especially in impoverished areas (Salamanca & Nguyen 2016, 2). According to Marks:

Climate change will most likely multiply many health-related risks in Thailand, especially heat stress, injuries, and water-borne diseases. Rising temperatures and a greater amount of stagnant water could increase the number of infectious cases. In 2008, nearly 190,000 Thais had to be treated for water-related illnesses injuries. Climate change also raises the risks of natural disasters, especially landslides. (Marks 2011, 235)

Salamanca and Nguyen (2016) report "that the neglect by policymakers can amplify the shocks of climate change" (2). As a result, "vulnerability is particularly high in rural areas, which is home to more than three-quarters of the region's poor people. Many of the people are small landholders or subsistence farmers and building resilience in agrarian communities is considered a priority. Increasing agricultural productivity is central to the Association of Southeast Asian Nations (ASEAN) countries' efforts to lift rural areas out of poverty" (Salamanca & Nguyen 2016, 3). Because climate change could undermine those efforts, effective adaptation is crucial.

To address climate change in the region, governments must increase public awareness of climate change, which is currently quite low. Agriculture is Southeast Asia's main industry. The priority, therefore, is to address the impact of climate change

where its effects will be most felt. Strengthening social safety nets, such as the preparation of disaster insurance, cash transfers, and workfare programs, would also be a positive step forward, for the impacts of climate change disproportionately hurt the poor and they will need the most help when natural disasters strike. Marks (2011) suggests, "governments must first meet the challenges of determining the best technologies and incentives to improve infrastructure, water resource management, agriculture, and information systems, and most significantly, to marshal the political will to allocate sufficient resources to invest in these areas" (251).

In closing, addressing climate change affects the countries of Southeast Asian countries are the obligation of governments, the responsible authority of society. Thus, it is the governments' responsibility to have a plan to serve and protect their citizens by addressing the impact of global warming on societies. For this they created, "the concept of adaptation readiness that provides a framework for action for countries to formulate plans for adapting to climate change and implementing key policy priorities" (Salamanca & Nguyen 2016, 5). Adaptation readiness is defined as, "the extent to which human systems such as nations, regions, businesses, health readiness, organizations, and communities are prepared to adapt, providing an indication or measure of the likelihood of adaptation taking place" (Salamanca & Nguyen 2016, 5). There must be mechanisms that include political guidance with usable science, and data to provide effective plans for the people. Also established structures for adaptation planning, with investors support to involve the proper implementation for "planning activities and evaluation, with the public support" (Salamanca & Nguyen 2016, 6).

Southern Africa

Climate change in the Southern Africa region is an ongoing concern, "within the countries of the Southern African Customs Union (SACU), including Botswana, Lesotho, Namibia, South Africa, and Swaziland" (Chandani et al. 2011, 1). This region has experienced the result of climate change and brutal famine, and "floods on account of the semi-arid climate that is already a tangible menace, aggravated by susceptibility to natural disasters, delicate ecosystems, and widespread poverty" (Chandani et al. 2011, 1). As climate change's impact and spread of disease intensifies, will influence the regions' means of survival, including food supply, water, and transportation. The natural causes of climate change are an ongoing cycle of dryness in the region that will result in water reduction, which is the first of many challenges (Chandani et al. 2011, 1).

The Government of Botswana does not have a formal policy to respond to climate change, instead "the global climatic impacts from the energy sector, which is a large source of greenhouse gases emissions, is acknowledged by the Government of Botswana" (Gwebu 2002, 84). Botswana has been working with the "UNFCCC since 1994 and is committed to provide reports of its greenhouse gas emissions and to develop strategies to reduce their levels" (Gwebu 2002, 84). The National Committee on Climate Change, under the Department of Meteorological Services (DMS), has also been helping Botswana meet its obligations to the UNFCCC.

Its mandate includes planning and coordination of the elements and activities on climate change, communication with stakeholders, and public awareness raising. Botswana is also signatory to regional efforts, in the

Southern African Development Community (SADC), to develop environmentally friendly energy technologies. (Gwebu 2002, 84)

Because agriculture is essential to the southern region of Africa, a plan to assess the process of appropriately preparing for climate change through planning and decision-making is required (Ziervogel & Zermoglio 2009, 133). Otherwise, climate change may significantly alter the profile of commonplace vegetation and rangeland cover, which would have a broad-spectrum impact on several species as well as on those communities reliant on these resources. This situation could further aggravate sensitivity to climate change in many sectors, including agriculture, forestry, water, and health. This situation, again, highlights the need for critical action in these countries. To address climate change efficiently, the countries' governments must develop adaptation plans to address the expected impacts of climate change as well as to specify the mitigation actions required to reduce greenhouse gas emissions. "South Africa, for example, has already committed to significantly cutting its emissions to 34 percent below business as usual projections by 2020, and to 42 percent by 2025" (Chandani et al. 2011, 3). According to the FAO, in 2003, "over sixty percent of Africans remain directly dependent on agriculture and natural resources for their well-being" (as cited in Ziervogel & Zermoglio 2009, 134). Agriculture is crucial to Africans because it is part of their survival, and agriculture is susceptible climate irregularity (Ziervogel & Zermoglio 2009, 134).

FAO additionally stated in 2003, "despite the reliance of large numbers of the population on agriculture, agricultural development has, historically, not been a priority of governments, with less than one percent of national budgets, on average, going to

agriculture" (as cited in Ziervogel & Zermoglio 2009, 134). Ziervogel and Zermoglio (2009) continue to explain that, due to a lack of government assistance to support agriculture for the African population "donors, and non-governmental organizations (NGOs) have supported agriculture across the continent because of this reliance and the potential to improve yields" (134). An organization that gave support to the African population is, "The Alliance for a Green Revolution in Africa (AGRA)" (Ziervogel & Zermoglio 2009, 134).

Procedures in place aim to address climate change can still suffer setbacks on the effects of climate change within the region. Central governments play a part in addressing the impact of climate change to possibly stop that SACU creates policies, formulates plans and policies, and creates laws to address climate change. The governments of SACU, can bring constituents' concerns into national forums, oversee the public purse, and help ensure policy continuity (Chandani et al. 2011, 1). Their Parliamentarians address climate change issues for the people by taking on many tasks, such as standing in the gap between local and national levels. By doing this, the governments take on the responsibility of making sure the people's needs are appropriately communicated to the national level. The SACU has the advantage of seeing parliaments as themselves, due to the tight bonds of connection they can voice their concerns and know that they will be listened to. As for the parliamentarians, it is just as vital to ensure that voice of the people is trusted with the government, or its Members of Parliaments (MPs) will be faced with scrutiny and criticism (Chandani et al. 2011, 3).

United States

The United States faces three major options to address climate change, both at home and abroad: how much to reduce greenhouse gas emissions, how to mitigate the effects of climate change, and how to adapt to the potential impacts of a changing climate that is causing extensive damage to territories across the country, including New York and many Southern states such as Texas and Louisiana (Dobbins et al. 2015, 2).

Leading green criminologist Rob White (2018) has found that:

social conflict linked to climate change is as much as anything a reflection of social inequality, and not simply determined by changes in environmental conditions. Much depends, of course, on where one lives, which has both geographical and economic dimensions. For example, more developed countries tend to be located in the mid to higher latitudes of the globe. Poorer countries, in contrast, are concentrated in the lower latitudes, that is, in the hottest parts of the planet. As temperatures rise in the tropics and sub-tropics, people there will suffer heat-related deaths at higher rates than their more geographically and financially privileged counterparts. Even so, an increased number of heat waves that are simultaneously more intense also implies more deaths regardless of geographical location. (White 2018, 83)

White (2018) further explains:

In the 2003 European heat wave, 70,000 people died in Western Europe and in a 2010 heat wave a further 55,000 people died in Russia and Eastern Europe. The decade 2001–2010 saw a 2,300 percent increase in heat deaths above the previous decade. (White 2018, 83)

If this same dynamic that is explained applies to the poor and the African American communities in the United States, then we must then ask, how is the US government addressing the effects of climate change and social inequality? When the next presidential administration takes office, it will be up to that president to determine the best strategy to vindicate proposals to help the American people and the nation, especially on the issue of equality when facing with climate change tragedies (Dobbins et al. 2015, 1).

To reduce climate change to appropriate levels, there will have to be policies in place to remove the relationship, "between greenhouse gas emissions and economic growth would entail radical changes in transportation, the energy sector, and water systems" (Dobbins et al. 2015, 3). All essential needs that are currently relying upon fossil fuels would have to be altered, that means removing embedded investments that would be a challenge. For most vital implications that are used today, require greenhouse gas emissions for now and future purposes that have already been built to perfection and to be repaired easily, even if disaster were to strike (Dobbins et al. 2015, 75).

There are additional characteristics of climate change that impacts disadvantaged communities that are rarely, if ever addressed by the United States government. For

example, how are African American communities cared for when affected by climate change? President Clinton signed an Executive Order "the 1994 U.S. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (EPA 2004, i). The purpose of the order was to ensure that low-income African American communities were not subject to being left out of obtaining equal services from the government due to environmental risks (EPA 2004, i). The signing of the executive order was the first time the US made an effort to provide equal opportunities to include African Americans and those in the environmental justice movement to address environmental injustice. Environmental justice is a “social, political, and moral struggle for human rights, healthy environments, and thriving democracies led by residents of communities most negatively impacted by economic and ecological degradation” (Adamson et al. 2016, 100). The environmental justice movement had reason to celebrate the memorandum accompanying the order, which stated:

Environmental and civil rights statutes provide many opportunities to address environmental hazards in minority communities and low-income communities. Application of these existing statutory provisions is an important part of this Administration’s effort to prevent those minority communities and low-income communities from being subject to disproportionately high and adverse environmental effects (Environmental Protection Agency. (EPA 2004, 3)

By 2004, President George W. Bush's EPA was found to have failed to implement Executive Order 12898 by the Office of the Inspector General, in a report titled *EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice*. Environmental justice became all but invisible during the presidency of George W. Bush and has remained so ever since. This reversal is an example of how, without the strong and united voice of people of color in the political arena and allies in positions of power, yesterday's victories can once more become today's battles (Hoerner & Robinson 2008). When President Barack Obama was in office, the centerpiece of his administration was climate policy and the Clean Power Plan (CPP), "which formed the basis of the U.S. contribution to the Paris Agreement" (Foster & McChesney 2017, 97). Obama's supporters explained that the plan was created to reduce carbon emissions by 28 percent by the year 2025. Obama's plan was to initially set in place the CPP with set regulations to enhance, "Clean Air Act to the regulation of carbon dioxide emissions in electrical power plants, to be implemented by the EPA" (Foster & McChesney 2017, 97). The plan was a failure, therefore states would have to create their own strategies to address climate change in a manner that was safe for their citizens. The year 2005 was chosen as the baseline for emission reductions precisely because it represented the peak level of U.S. carbon emissions. As Mark Hertsgaard pointed out in *The Nation*:

The stipulated cuts in U.S. carbon-dioxide emissions, although ostensibly exceeding 25 percent according to the 2005 baseline by 2025, would nonetheless be only seven percent if measured against the original 1990 baseline of the Kyoto Protocol. The latter agreement mandated that U.S.

carbon-dioxide emissions should drop by seven percent *by 2012*. This original reduction target, which the United States was supposed to have put in place under the Kyoto Protocol but ended up abandoning, was initially conceived in the 1990s as merely a first step in reducing carbon emissions. (as cited in Foster & McChesney 2017, 97)

This plan was short lived once Donald Trump assumed the presidency, however. Trump withdrew the United States from the Paris Agreement and abandoned President Obama's climate policy. "The first presidential debate was held on October 22, 2020" (Jones 2020, 1). Trump strongly presented his reasons for opposing the Green New Deal when he addressed climate change. Trump made prior claims that the science did not know if climate change was related to climate disasters. When Trump was questioned about his belief about the science of climate change and how he would address it, he stated:

I want crystal clean water and air. I want beautiful clean air. We have now the lowest carbon. If you look at our numbers right now, we are doing phenomenally. But I haven't destroyed our businesses. Our businesses aren't put out of commission. If you look at the Paris Accord, it was a disaster from our standpoint. And people are actually very happy about what's going on because our businesses are doing well. As far as the fires are concerned, you need forest management. In addition to everything else, the forest floors are loaded up with trees, dead trees that are years old and they're like tinder and leaves and everything else.

You drop a cigarette in there the whole forest burns down. You've got to have forest management. (Jones 2020, 1)

In the first presidential debate, President Trump never addressed an actual plan to confront climate change or his belief about climate change. Also, clean water and clean air are not going to help the current issues that impact African American communities due to climate change. In complete contradiction of this sensible approach, the Trump administration resurrected the "coal industry by relaxing environmental regulations and eliminating policies favoring renewable energy" (Coplan 2019, 272) both policies of which are considered to be damaging to climate control efforts (Coplan 2019, 272).

FIGURE 4. The Number of EPA Environmental Justice Small Grants Issued by Three Administrations in their First Two Years

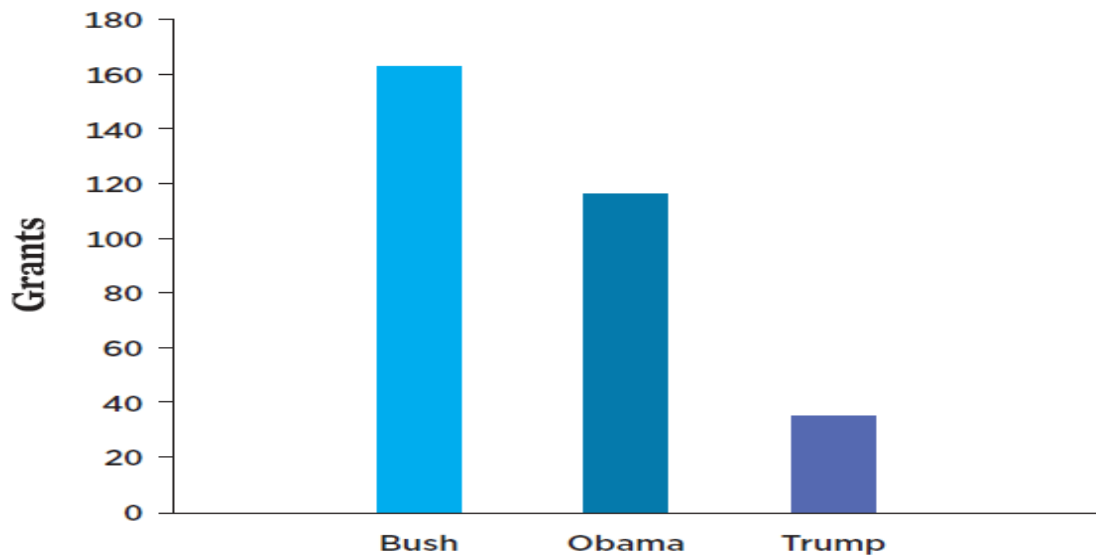


Fig. 3. Grants Issued by Three Administrations in their first Two Years in Office (Data from Desikan et al. 2019, 19)

Figure 3 is an illustration of the three administrations during their first two years in office and the number of small grants that they issued.

The Trump administration has attempted to sideline the work of the EPA's Office of Environmental Justice. Created in 1992, The office was designed to coordinate EPA efforts to address the needs of vulnerable populations by decreasing environmental burdens, increasing environmental benefits, and working collaboratively to build healthy, sustainable communities.

(EPA, 2017b, as cited in Desikan et al. 2019, 19)

The Office of Environmental Justice "ensures that safeguards for disenfranchised communities, such as the cleanup of toxic sites, are enforced, verifies that the voices of communities are incorporated into EPA decisions, and provides tools and resources that help promote these principles, such as EJSCREEN, the environmental justice mapping and screening tool" (EPA, 2018a, as cited in Desikan et al. 2019, 19). The offices were there to help serve the people financially, to provide local and public health services. The organization in place awarded small grants, "more than \$26 million since 1994 to more than 1,400 community-based organizations and local and tribal organizations that work with communities facing environmental justice issues" (Desikan et al. 2019, 19). The purpose of the grants was to serve, protect, and secure education and training awareness to inform the people of the dangers of climate change that polluted the air, as well as to provide the African American communities with the necessary equipment to clean up their own neighborhoods to have ecofriendly environments in which to live hazard free. During the Trump administration, "the number of small grants awarded has dropped by

70 percent compared with the Obama administration's first two years, and by 79 percent compared with the George W. Bush administration's first two years" (Desikan et al. 2019, 19). The sudden cut of grants that was demanded by Trump has hindered the African American communities being able to access the "projects that provide mental and physical health benefits to communities impacted by environmental justice concerns" (Desikan et al. 2019, 19). These cutbacks reflect a reduction in the level of care and support, representing a blatant disregard for the safety and health concerns of America's lower socio-economic communities, including African Americans (Desikan et al. 2019, 19). The next chapter explores the harm experienced by low-income African American communities caused by climate change.

CHAPTER IV

ISSUES EXPERIENCED BY AFRICAN AMERICAN COMMUNITIES

Climate change is altogether too tangible for the African American communities that are seeing the direct effects of this environmental condition. Climate change is "causing more frequent and severe weather events, including heavy rainfall, dangerous storms, droughts, and heat waves" (Moms Clean Air Force 2019, 1). Climate events such as these create unsafe conditions that lead to the speedy spread of infectious diseases. Disadvantaged communities, in particular, are at greater risk of disease, not only related to cardiovascular conditions, but also to the spread of infectious diseases such as Coronavirus (COVID-19) (Yancy 2020, 7). These high-risk situations interfere with food sources and can strain vital infrastructure such as roads and bridges. These conditions often affect the African American communities more than others. Climate change has always been a major social justice issue for the African American communities, in the sense that they are not cared for equally as the other races, as has been shown in this research study (Moms Clean Air Force 2019, 4).

Due to the recent spread of COVID-19 and quarantine orders, it was not possible to carry out live surveys for this inquiry. Therefore, surveys from the national poll A Survey of African American Adults, dated February 21, 2020, were used. "Lincoln Park Strategies conducted the nationwide poll that surveyed 1,000 African Americans about their first-hand experience with climate change and identified support for a resolution to the climate crisis that is gaining traction on Capitol Hill. The poll was commissioned by

the Environmental Defense Fund (EDF) in coordination with Moms Clean Air Force to measure nationwide support for a transition to a 100 percent clean economy" (EDF 2020, 1-2).

Impacts on African American Communities

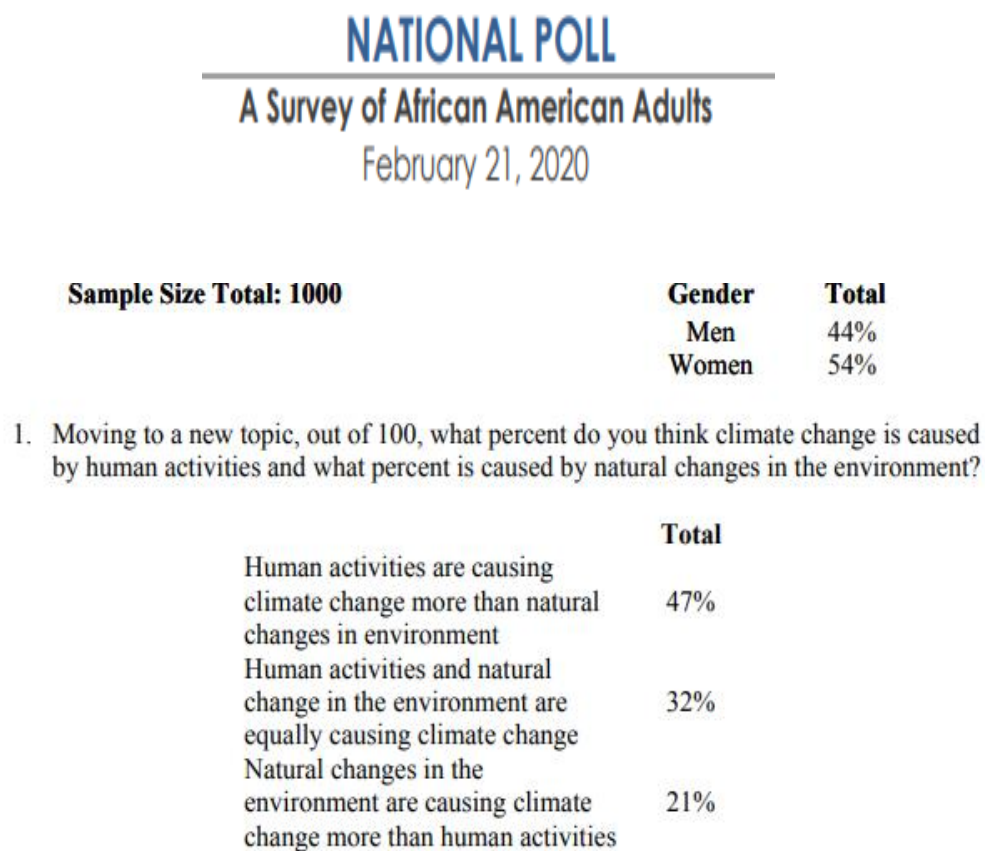


Fig. 4. Sample Population Survey of African Americans and the causes of climate change in their immediate communities (Data from EDF 2020, 1)

Figure 4 presents the survey results that indicate African American adults believe that climate change is partially due to human activity, which is relevant to the cause of hazardous reactions in their communities. This finding is highly relevant to Port Arthur,

Texas, a "Gulf Coast city of 55,000 that is home to a disproportionately high number of industrial polluters in relation to its population" (Tigue 2020, 1), as well as to Motiva, the largest oil refinery in the country. Figure 5 below is an illustration of the Oil Refinery in Port Arthur, Texas.



Fig. 5. Oil Refinery in Port Arthur, Texas (Photograph from Wood 2020, 1)

The Southeastern region of Texas, home to the oil refinery town that of Beaumont that "hosts one of the highest concentrations of facilities that emit chemicals toxic enough that they must be reported to the to the Environmental Protection Agency" (Tigue 2020, 2). Beaumont is also predominantly inhabited by Hispanics and other native populations, with a third of the population being African American (Tigue 2020, 2).

Beaumont Tx Poverty by Race

Name	Total	In Poverty ▼	Poverty Rate
Black	55,641	14,201	25.52%
Hispanic	18,009	3,657	20.31%
White	36,703	3,426	9.33%
Asian	3,726	1,116	29.95%
Multiple	1,891	567	29.98%
Other	2,241	548	24.45%
Native	268	55	20.52%

Fig. 6. The Demographics of Poverty Rate by Race (Data from World Population Review [WPR] 2020, 10)

Figure 6 illustrates the poverty rate by race in Beaumont. The African American "population is higher compared to other over races in the city" (Tigue 2020, 12). Port Arthur and Beaumont, Texas, in Jefferson County, have a heavy industrial presence, "a common trait of poor and mostly black and brown communities across the country" (Tigue 2020, 4). In Port Arthur, residents refer to the region as, "the cancer belt." The region is known to have, "higher than average rates of cancer, asthma, and cardiovascular disease according to a 2016 report from the Southeast Nonprofit Development Center" (Tigue 2020, 5). The city now has an alarming number of cases of COVID-19. There is a large body of evidence supporting the observation that climate change will alter the production, allergenicity, distribution, and timing of aeroallergens (Tigue 2020, 5):

Historical trends show that climate change has led to changes in the length of the growing season for certain allergenic pollens. Climate change also contributes to changes in allergic illnesses as greater concentrations of CO₂, together with higher temperatures and changes in precipitation, extend the start or duration of the growing season, increase the quantity and allergenicity of pollen, and expand the spatial distribution of pollens. The role of weather on the initiation or exacerbation of allergic symptoms in sensitive persons is not entirely understood. Increases in intensity and frequency of rainfall and storminess over the coming decades is expected to

be associated with spikes in aeroallergen concentrations and the potential for related increases in the number and severity of allergic illnesses. (Fann et al. 2016, 78)

There is supportive "evidence that allergic diseases develop in response to complex and multiple interactions among both genetic and non-genetic factors, including a developing immune system, environmental exposures (such as ambient air pollution or weather conditions), and socioeconomic and demographic factors" (Fann et al. 2016, 78). There is also, "evidence that potential non-linear interactions between aeroallergens and ambient air pollutants are likely to increase health risks for people who are simultaneously exposed" (Fann et al. 2016, 78).

Jefferson County, "has seen a spike in COVID-19 infections since mid-March, 2020, with the number of cases increasing to at least 100 by mid-April" (Tigue 2020, 5). There are also studies that find COVID-19 links to African American deaths for those who live in the Southeast Texas region, caused by poor air quality that puts them at risk of becoming infected with the virus. Climate change is impacting the health of African American communities not only in Texas, but in many other regions of the country, with regard to the spread of disease and viruses (Tigue 2020, 6). "In Michigan, African Americans make up 41 percent of the state's total COVID-19 deaths, despite making up just 14 percent of the state's population" (Tigue 2020, 7).

Similar statistics are found in the states of Illinois and Louisiana, for "Illinois African American residents also make up 41 percent of the state's Coronavirus deaths,

when they account for just 14.6 percent of the total population" (Tigue 2020, 7).

Likewise, in "Louisiana, nearly 60 percent of the people who died of Coronavirus in the state are African American, while they account for only one third of the state's population" (Tigue 2020, 7). Low-income African American communities are prone to experience these types of report readings, as public health experts explain, for the communities are at greater risk of "high fatality events, including natural disasters, with devastating impacts on health" (Tigue 2020, 8).

Health Issues, the African American Communities, and Climate Change

Scientists have linked climate change and increasing temperatures to health conditions like asthma, heart disease, or breathing problems. Have you, or someone you know, been diagnosed with any of those conditions?

	Total
Yes, I have been diagnosed with one or more of these conditions	18%
Yes, someone I know has been diagnosed with one or more of these conditions	26%
No	41%
Not sure	15%

Fig. 7. Sample Survey Questions and Response Rates (Data from EDF 2020, 2)

Figure 7 presents the survey responses from African Americans who were questioned if their belief about health concerns was connected to increased climate and temperature change (EDF 2020, 2). There are statistics that show that the living environments of African Americans communities are prone to be impacted by climate change in due to related air pollution (Stanley-Becker 2019, 1).

The atmosphere is a complex, dynamic natural gaseous system that is essential to support life on planet Earth. Stratospheric ozone depletion due to air pollution has long been recognized as a threat to human health as well as to the earth's ecosystems. Worldwide air pollution is responsible for large numbers of deaths and cases of respiratory disease. Direct causes of air pollution related deaths include aggravated asthma, bronchitis, emphysema, lung and heart diseases, and respiratory allergies. (Science Daily 2020, 1-4)

As mentioned previously, there are few studies on the effects of climate change on African American communities. In San Francisco, a study was carried out that drew "more than four thousand people from around the world" (Gant 2018, 8) gathered to raise the alarm about the public health risks associated with climate change. As reported by Simeon Gant, "Norris McDonald, president of the African American Environmentalist Association (AAEA) has logged exhaustive reports concluding, two things are certain: African American advancement and health are inextricably tied to economic development and a clean environment" (Gant 2018, 8). Although the San Francisco report did not represent a full study specifically of African Americans, the discussion and issues that it raised concerned disadvantaged communities such as that of African Americans (Gant 2018, 9).

Dr. Aparna Bole gave her professional opinion about her African American patients who are impacted by air pollution due to climate change. "Dr. Aparna Bole, Co-Chair of Health Care Without Harm (HCWH) in Cleveland, Ohio, showed images of

coal-fired plants in the Midwest. She made a case to be more cognizant of protecting people of color and people living in poor communities" (Gant 2018, 10). In the *Climate Change is a Public Health Crisis Report*, Dr. Bole states that “air pollution from fossil fuel combustion affects the health of my patients every day” (Gant 2018, 10). She further warned that:

Particulate air pollution from coal fire power plants can cause exasperated chronic lung conditions like asthma, contribute to morbidity from cardiovascular disease, contribute to premature birth and low birth weight and neurological disorders. One out of five of my patients has asthma. That is the prevalence of pediatric asthma nationwide and reflects the fact that African American and Latino children suffer disproportionately in Cleveland (Ohio) and communities around this country. (Gant 2018, 10)

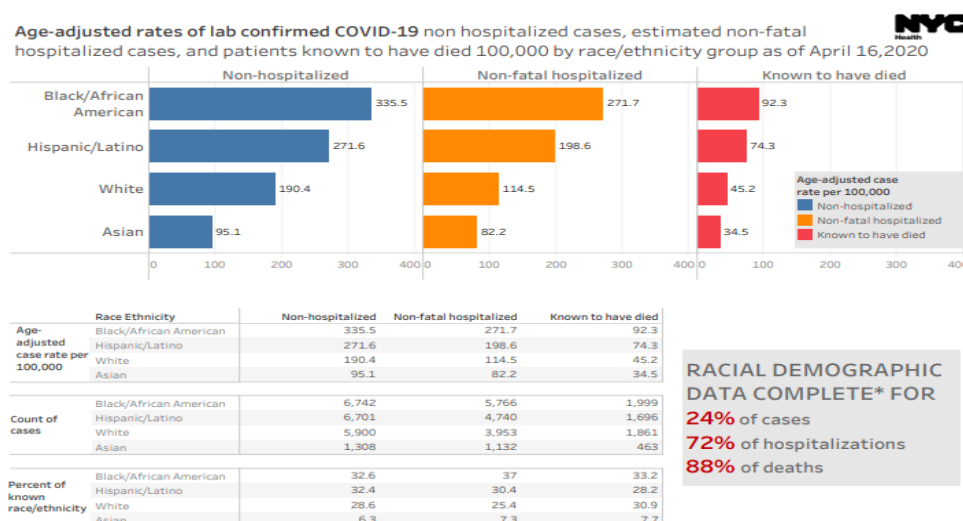


Fig. 8. The Racial Demographics of COVID-19 Cases in New York City (Data from Centers for Disease Control and Prevention [CDC] 2019, 1)

Figure 8 presents the racial demographics of the 2019 novel coronavirus (COVID-19) in New York, the first state with the highest number of positive cases (CDC 2019, 1).

A recent Centers for Disease Control Prevention (CDC) Morbidity and Mortality Weekly Report (MMWR) included race and ethnicity data from 580 patients hospitalized with lab-confirmed COVID-19. It found that 45 percent of individuals for whom race or ethnicity data was available were white, compared to 55 percent of individuals in the surrounding community. However, 33 percent of hospitalized patients were Black compared to 18 percent of Blacks in the community, and eight percent of those hospitalized were Hispanic, although making up only 14 percent of the community. These data suggest an overrepresentation of Blacks and ethnic minorities among hospitalized patients. (CDC 2019, 1)

African Americans and others of ethnic minority backgrounds with health issues are vulnerable to be affected from COVID-19 as the number of cases in that population are still on the rise. Reports have shown, "long-standing systemic health and social inequities have put many people from racial and ethnic minority groups at increased risk of getting sick and dying from COVID-19. The term racial and ethnic minority groups includes people of color with a wide variety of backgrounds and experiences" (CDC 2019, 1). The pandemic is a prime example of how disease and viruses due to climate control unduly affect African American communities.

CHAPTER V

THE ENVIRONMENT AND ITS EFFECTS ON AFRICAN AMERICAN COMMUNITIES

As temperatures continue to rise worldwide, there will also be an increase in heat-related deaths within African American communities, which have long had health concerns related to high temperatures. Heat rays and heat events are moving quickly and are very intense. The heat is so extreme that they are now occupying regions that are often cooler and people in general who reside in those regions are affected, for those people living in cooler regions are not prepared to adjust accordingly. African American communities and low-income communities are also feeling the effects of extreme heat. Low-income African Americans are not provided with the proper assistance or represented effectively when affected by climate change (Hoerner & Robinson 2008, 11).

The most common causes of death are cardiovascular disease and myocardial infarction, but elevated temperatures are also associated with increased rates of death due to diabetes, stroke, respiratory disease, accidents, violence, suicide, and homicide. In addition, heat exposure can result in non-fatal heat cramps, fainting, heat exhaustion, and heatstroke. Heat deaths and other heat-related health effects are an immediate effect of a temperature spike, typically concentrated within a day of the elevated temperatures. (Hoerner & Robinson 2008, 10-11)

Hoerner and Robinson (2008) observed, that "death rates may be lower than the typical heat that can still impact individuals observed that are fragile in health and or near death.

This is a phenomenon known as harvesting" (11), when a temperature increase of heat is a danger to the lives of the African American populations and communities (Hoerner and Robinson 2008, 11). They found that "during the 1995 Chicago heat wave, excess mortality rates were 50 percent higher for non-Hispanic African Americans than for non-Hispanic whites. Another study of six northern US cities found that the increased risk of death during a heat episode was twice as large for African Americans as for non-Hispanic whites" (Hoerner & Robinson 2008, 11).

This research paper has shown that climate change has an impact on African American communities, with "more frequent hurricanes and droughts, burning temperatures, new plagues of diseases, and worse floods" (Baird 2008, 1). The message that has been reiterated throughout this research is that, due to climate change, the African American communities that are impacted the most do not get aid or are left in poor conditions as they worsen. For centuries, African Americans have been discriminated against, judged and labeled with many stereotypes. African Americans believe that due to discrimination, they are blocked from receiving aid, "from official planning at the local, national, and international level for how to cope with the shocks of climate change to the immediate aftermath of climate-related disasters" (Baird 2008, 1). An example of this is how African American were treated during Hurricane Katrina, "the reporting of the New Orleans floods, which came after Hurricane Katrina in August 2005, and of the Indian floods in the summer of 2007, in which African Americans respectively suffered badly" (Baird 2008, 2). Hurricane Katrina revealed to the whole world to see the conditions that African Americans were left in, not receiving any support

for days. These communities suffered due to the impact of climate change, that is still is still prevalent today that affects areas such as agriculture, water, and economic sectors. The African American communities' needs that are affected by climate change are least likely to be addressed by the public. In some cases, African Americans' very existence is threatened daily by climate change due to both natural causes and human activity (Baird 2008, 11). Baird (2008) adds that, "part of the problem is that climate change research tends to focus on economic sectors – water, infrastructure, agriculture, settlements and so on – rather than human groups" (11).

And would you say that you personally have been affected by extreme weather, increased heat waves, or strong storms that have been made worse by changes to our climate?

	Total
Yes	50%
No	30%
Not sure	20%

And finally, would you support or oppose the United States setting a goal of a 100% clean economy—meaning increasing clean energy production and reducing climate pollution— over the next decade?

	Total
Strongly support	54%
Somewhat support	23%
Somewhat oppose	6%
Strongly oppose	3%
Not sure	13%

Fig. 9. Survey on Effects of Natural Disasters on African American Communities (Data from EDF 2020, 1)

Figure 9 presents the results of a survey of "African Americans on climate change, and the effects of natural disasters and pollution" (EDF 2020, 1). "In Flint,

Michigan" (Blount 2020, 3) there was crisis related to leaking from lead pipes in homes in the African American communities. The seepage from the lead pipes contaminated the water supply, causing widespread illness in African American communities, as mothers unaware of the problem fed water to their babies (Blount 2020, 3). This public health crisis, which was made worse, caused serious problems in the African American communities. "Studies have raised concerns that the exposure of Flint's residents, who are more than 50 percent Black, may have impacted fertility, fetal development, infant health, and contributed to learning disabilities among children" (Blount 2020, 3). The Flint story is an example of climate change and manmade disasters that disproportionately impact communities of color. The experience of emotional trauma, instability, and sudden loss endured from the African American "women and girls result in long-term chronic stress, depression, anxiety, and on-going post-traumatic stress disorder" (Blount 2020, 5).

Fussell and Lowe (2014) stated that, "in a study of post-disaster displacement, eight out of 10 showed elevated levels of psychological symptoms (general psychological distress, depression, and post-traumatic stress) among participants who had relocated, compared to those who returned to their pre-disaster communities" (138). The study of the survivors of Hurricane Katrina sought to identify the linkages between relocation and mental health (Fussell & Lowe 2014, 138):

using a 2007 population-based survey of southern Mississippi residents in the 23 counties affected by Hurricane Katrina, Galea, Tracy, Norris, and

Coffey (2008) found that an inventory of post-disaster stressors, which includes an indicator of displacement, predicted net of demographic characteristics and hurricane-related traumatic events. Sastry and VanLandingham's (2009) population-based post-Katrina study of New Orleans residents found probable mental illness was six times more likely among respondents whose homes were unlivable compared to those with livable homes, suggesting, but not explicitly demonstrating, an association between displacement and post-disaster mental health. (Fussell & Lowe 2014, 138)

The report of the study showed that individuals from New Orleans who were moved from their familiar to other places due to the effects of the climate change, do developed mental health issues. As explained, "residents of emergency housing or housing tracts in Louisiana and Mississippi with major damage from Hurricane Katrina, living outside of one's pre-Katrina community was associated with poorer mental health. All the collected results proved to be consistent with the expectation that displacement is associated with poor mental health" (Fussell & Lowe 2014, 138). This evidence shows that climate change disasters have a great impact on the mental health of African American communities, currently a significant issue for African American culture.

The WE ACT organization helps African Americans communities, already subjected to different circumstances, that needs proper assistance. Some of the WE ACT projects require more time due to environmental conditions that may be hazardous to the

communities, such as chemicals and repairs of rebuilding the area from natural disasters of climate change (WE ACT for Environmental Justice 1998, 3).

In Houston and other areas of Texas, there are high racial disparities in the exposure of environmental risks. Latin and African American families are excessively concentrated near toxic sites, including petrochemical facilities, superfund sites, garbage incinerators, and landfills. Moreover, storm water infrastructure and flood management in these areas are in dire need of repair. Hurricane Harvey worsened these conditions for many communities. Among the environmental impacts of Hurricane Harvey, 46 industrial facilities released 4.6 million pounds of emissions into the air. This makes up one-fifth of the unapproved pollution from an oil or gas facility in 2016 in Texas as a result of a malfunction or maintenance issue. Floodwaters were contaminated with bacteria and toxins, including *Escherichia coli* (E Coli), a form of fecal contamination, over four times the level that is considered safe by the EPA. The contaminants came from several waste treatment plants in the area. In addition, high levels of lead, arsenic, and other metals were present in the water. (WE ACT for Environmental Justice 1998, 3)

Economic Disparities in African American Communities

Hunger and poverty in the African American communities pose unique challenges that make it harder to attain food security. Climate change impact in African

American communities is another gateway to many problems in the communities that can affect food security, causing more hunger and poverty. Especially to the low-income communities.

For this reason, "African Americans are more vulnerable to food price increases due to climate change or to climate and energy policy because they spend a higher percentage of their budget on food than non-Hispanic whites. Partly due to lower average incomes, the percentage of total income spent on food declines as household income increases" (Hoerner & Robinson 2008, 17). African American low-income families must spend money strategically to make sure they stay prepared for any unexpected situation, families spend more money on food for the household than other needs, and will do without other necessities over everything else to have enough money for food in their homes. "Food security is attained when a household has reliable access to adequate food. It is a simple condition that is out of reach for over 850 million people worldwide, including almost half a billion children who live with chronic hunger or even fear of starvation" (Hoerner & Robinson 2008, 17). Extreme weather conditions caused by climate change may also worsen African Americans' food supply. Tornados, hurricanes, and floods can ruin the food supply, whether crops or processed food. When natural climate conditions interrupt business operation, the price of food increases to balance out supply and demand, that disproportionately affects low-income African American communities. To make matters worse, manufacturers use chemicals to produce more food to sell and, to address supply and demand problems at a cheaper price in a society that is not able to afford quality healthy food. For example, "the price of maize

increased by 80 percent between 2005 and 2007 and has since risen further. Many other commodity prices also rose sharply over this period: milk powder by 90 percent, wheat by 70 percent, and rice by about 25 percent" (Hoerner & Robinson 2008, 17).

After Hurricane Katrina, many African American residents were unable to come back home. Byrnes (2014) stated that, "many did not own cars before the storm and relied on public transportation. This lack of transportation may have been one reason why some did not flee as the hurricane approached, and why some who did manage to leave have remained away" (8). African Americans did not return to their neighborhoods for a long period or left the neighborhoods vacant. "White Americans in middle-to-upper class neighborhoods such as the shores of Lake Pontchartrain had the financial means to return and rebuild, whereas the residents of poor and mostly Black neighborhoods" (Byrnes 2014, 8) such as the Lower Ninth Ward, known to be the low-income communities, in many cases abandoned their communities (Byrnes 2014, 8).

Many black homeowners lacked adequate flood insurance on their homes which, in some cases, had been passed down through generations without clear records of ownership, further complicating efforts to obtain aid for rebuilding (Fletcher, 2010). In poorer neighborhoods, moreover, the low values of homes, were such that the owners were not able to secure loans of sufficient value to cover rebuilding costs (Fletcher, 2010). (as cited in Byrnes 2014, 9)

Summary

In closing, inequality has been a persistent subject in the climate change discussion as it related to the African American communities. This research illustrates that the welfare of African American communities has been damaged disproportionately by the environmental, health, and economic effects of climate change, which has had destructive consequences. The concern is there.

African Americans, who experience distress in their everyday lives, are speaking out to address these issues and to get needed help. If African American communities were already not receiving the same services as those communities that are not struggling, climate change is aggravating the differences and making African American communities even more vulnerable. This vulnerability suggests that climate change is hurting the African American and related communities. This leads to the question of how the next presidential administration will address these communities that are suffering. Will the impact of the vote that took place in the November 2020 election make citizens care more? Will a plan be developed to address those who have not prevailed, or is it even a concern for those in power?

CHAPTER VI

CONCLUSION TO CLIMATE CHANGE

The developing countries such as those in Southeast Asia and Southern Africa are experiencing the severe effects of climate change. Still, when compared to African American communities, these countries appear to more informed and more effective efficient at addressing climate change.

As stated in Chapter three, Southeast Asia is a region that is highly affected by climate change due to the make-up of the region. The region dependence is on agriculture and natural resources, that is an ongoing exchange of economics that is their means of living that can be halted due to the weather. The researcher observed that climate change in the Southeast Asian region has similarities to that of the African American communities, both are affected by "the increasing frequency and intensity of extreme weather events such as heat waves, droughts, floods and tropical cyclones and is likely to suffer more from climate change than the global average" (Zhuang et al. 2010, 19). Southeast Asia has, in return, responded to climate change with innovative strategies of adaptation and taken mitigation actions with the help of governments in the region that have put into place central government-local authority coordination, planning, and funding mechanisms. African American communities, in contrast, do not sustain support from local, state or the national the government to address climate change.

The countries in Southern Africa have also experienced the harsh impacts of climate change. The Southern African region suffers from both recurring drought and

endure intense flooding. Yet again, unlike African American communities, Southern Africa's parliamentarians played a central role in building climate resilience by bringing constituents' concerns into national forums, scrutinizing how governments are responding to domestic and global climate change issues, and ensuring policy continuity (Osbahe et al. 2010, 17). The Southern Africa region also faces issues with their countries' MPs, who struggle to fill the positions to address the needs of their people effectively and lack the education to address climate change properly. The region does not have the adequate instruments to address climate change and comprehend the velocity of the changing weather condition frameworks and competing priorities (Chandani et al. 2011, 1-2). The primary point to be emphasized is that both regions are comprised of developing countries that are experiencing the negative effects of climate change, despite resource constraints and other pressing social and economic challenges, the governments are actively making climate change plans to help those who are in dire need. In contrast, since 2016, the US has shown that climate change is not a priority, neither for the country, nor for its communities that are especially vulnerable to its effects, such as African American communities.

Under the Trump administration, the US backed out of the Paris Agreement and plans to oppose the Green New Deal. This policy approach and attitudes have resulted in a reduction in benefits for low-income communities. The federal government has aided programs for populations that are disadvantaged by injustice in health coverage, injustice in food security, and injustice in the provision of services to ensure that African American and other low-income communities are provided for equally. The programs

were created as safety nets for the provision of services for the public. The programs that were created for African American populations or low-income communities were created from the foundations of science, however "the Trump administration has failed to consider or has ignored such scientific evidence in decisions concerning these programs" (Desikan et al. 2019, 16).

The lack of effort by the US government to address climate change, and the negative impact this has had on the African American communities has motivated local cities and states to address climate change themselves within their own communities. People from African American communities have risen up to become, "activists and scholars of environmental justice challenge the disproportionate burden of toxic contamination, waste dumping, and ecological devastation borne by low-income communities, communities of color, and colonized territories" (Adamson et al. 2016, 4). They urge social policies that uphold the right to meaningful:

democratic participation of frontline communities in environmental decision making, and they have redefined the core meanings of the environment and the interrelationships between humans and nature, thereby, challenging and transforming environmentalism more broadly. Tackling these bold social-change goals head-on, environmental justice advocates work toward building diverse, dynamic, and powerful coalitions to address the world's most pressing social and environmental crises — global poverty and global climate change — by organizing across scales and seeking a global vision for healthy, resilient, and sustainable

communities rooted in trans local grassroots realities. (Adamson et al. 2016, 100)

This concept will extend to provide a framework for communities to articulate their goals, until there is help from those in power to develop and execute a plan.

Recommendations for African American Communities to Address Climate Change at the Grassroots Level

African American communities have been experiencing trauma due to environmental and climatic changes, and are more vulnerable to related mental health issues, violence, and suicide. When will enough be enough, when will someone be willing to listen, and who will speak up for those who are not represented? One protest starts with one voice.

The Trump administration wants to “Make America Great Again” (Painter 2016, 1), for this to be a reality, there must be equal aspects of a social and productive life. This involves citizens of the US and responding to the causes of climate change for African American communities. There must also be a supportive administrator that is willing to hear the voices of all people, races, and genders of the needs of the various communities. Other countries are already incorporating climate change plans into their public policy. The US would be well-advised to actively address climate change in African American communities with appropriate policy measures and resources.

Recommendation One

After careful review of this issue and its effects on the African American communities, it is concluded that the following recommendations can help sustain these communities at the local level. The first recommendation is that the mayors of cities need to address their African American communities. For example, Minneapolis Mayor Jacob Frey made a formal apology to its Black citizens by identifying the shortcomings that were apparent to the African American communities which threatened their health, environment, economy, livelihoods, and, most importantly, their very lives (2020).

Seeing that power is at the top, the governors of each state need to come together and work with state and local governments and political leaders to create an action plan that will not only lift the African American communities, but also prevent that other communities, regardless of socio-economic background, race, or gender, fall behind. With a strong policy in place at the state and local levels, regardless of who is in the Oval Office, the African American communities can have the opportunity to utilize the same resources with equal opportunities before and after the climate change related destruction.

Recommendation Two

The next recommendation involves education with a focus on the communities, economy, and the individual. The lack of knowledge regarding climate change in the African American communities is evident. There have been inadequate efforts to educate African American communities on the causes and environmental effects of climate change. The first step is for community leaders, all levels of government, and non-profit

organizations to collaborate and strategize on developing community education opportunities. Training and educational programs must be established to address all age groups, so that no one is eliminated, or excluded from the process. Evidence of these efforts were demonstrated in the research presented in Chapter Five. Educational efforts could also be extended to the workplaces of these communities, to the factories, power plants, and chemical plants. This sort of community education on climate change is based on a model of co-responsibility with companies.

Recommendation Three

The final recommendation involves technology, which today, through any device, allows immediate access to information. This transition to technology is the key to all facets of life in the twenty-first century. Technology has advanced so much that it can be used to share, store, or block information. In the African American communities, the lack of technology skills and access to computers is more prevalent. These communities can benefit from having technical assistance in the areas of local technology awareness and updated technology training at community centers, local neighborhood facilities, and schools. Finding out what climate change can and cannot do through technology will help inspire and empower people to address climate change within their own communities and homes. Technology can be applied anywhere that it is needed at the local, state, and global levels. There is currently help at the national administrative level to use technology to remove toxins and dangerous gases from the atmosphere to improve air quality within communities.

The Trump administration wants to “Make America Great Again” (Painter 2016, 1). To make that concept an everlasting for everyone, the US must provide equal opportunities, to respond to the effects of climate change. An administration willing to acknowledge the voices of all people, races, and genders regarding their needs within their respective communities would be an effective starting point. Like other countries, the US can also develop and implement initiatives at the level of local government to actively address climate change in the African American communities. With the right resources, these communities’ voices can be heard.

REFERENCES

- Adamson, Joni, William A. Gleason, and David N. Pellow, eds. 2016. *Keywords for Environmental Studies*. NYU Press
- Armstrong, Anne K., Marianne E. Krasny, and Jonathon P. Schuldt. 2018. "Climate Change Science: The Facts." In *Communicating Climate Change: A Guide for Educators*, Ithaca: Cornell University Press
- Baird, Rachel. 2008. "The impact of climate change on minorities and indigenous peoples." *Briefing*. *Minority Rights Group International: London*
- Black Mesa Water Coalition (BMWC). 2001. Accessed May 2020 from <https://www.nativemovement.org/bmwc>
- Blount, Linda. 2020. "Black communities face dangerous clean water and environmental risks." THE HILL. Accessed May 2020 from <https://thehill.com/opinion/energy-environment/480602-black-communities-face-dangerous-clean-water-and-environmental>
- Byrnes, W. Malcolm. 2014. "Climate Justice, Hurricane Katrina, and African American Environmentalism," *Journal of African American Studies*, 18, no. 3: 305-14.

Centers for Disease Control and Prevention (CDC). 2019. "Health Equity Considerations and Racial and Ethnic Minority Groups." Accessed March 2020 from <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html>

Centers for Disease Control and Prevention (CDC). 2019. "Previous Health Equity Matters Newsletter." Accessed March 2020 from <https://www.cdc.gov/minorityhealth/newsletter/2020/summer/news.html>

Centers for Disease Control and Prevention (CDC). 2019. " The Racial Demographics of COVID-19 Cases in New York City". Accessed March 2020 from [covid-19-deaths-race-ethnicity-04162020-1.pdf \(nyc.gov\)](#)

Chandani, Achala, Simon Anderson, Corinne Schoch, and Barry Smith. 2011. "Climate change: An issue for parliamentarians in Southern Africa Report." International Institute for Environment and Development

Collier, Michael and Robert Webb. 2002. *Floods, Droughts, and Climate Change*. The University of Arizona Press

Communities for A Better Environment (CBE). 2016. Mission & Vision. Accessed May 2020 from <http://www.cbecal.org/about/mission-vision/>.

Coplan Karl. 2019. *Live Sustainably Now: A Low-Carbon Vision of the Good Life*. New York: Columbia University Press

Deane, D., M. Dorsey, and M. Hayden. 2014. *Status and Progress in Engaging Communities of Color to Advance Resilience to Climate Change, Experiences of 15 U.S. Cities Report*. Accessed June 2019 from

https://www.texashealthinstitute.org/uploads/1/3/5/3/13535548/thi_climate_resilience_vulnerable_communities_final_report_12_11_2014_new.pdf.

Desikan, Anita, Jacob Carter, Shea Kinser, and Gretchen Goldman. 2019. *Abandoned Science, Broken Promises: How the Trump Administration's Neglect of Science Is Leaving Marginalized Communities Further Behind* Report. Union of Concerned Scientists

Dobbins, James, Richard H. Solomon, Michael S. Chase, Ryan Henry, F. Stephen Larrabee, Robert J. Lempert, Andrew M. Liepman, Jeffrey Martini, David Ochmanek, and Howard J. Shatz. 2015. "Climate Change," In *Choices for America in a Turbulent World: Strategic Rethink*. The RAND Corporation

Douglas, Paul. 2005. *The Ultimate Weather Book*. Sterling Publishing

Environmental Defense Fund (EDF). 2020. "New Poll: Majority of African Americans Affected by Climate Change, Support Transition to 100% Clean Economy." Accessed March 9, 2020 from <https://www.edf.org/sites/default/files/documents/LPS-AA%20Omnibus%20EDF-MQ-Feb%202020.pdf>

Environmental Protection Agency Office of Inspector General (EPA). 2004. "EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice" Evaluation Report. Accessed March 2020 from <https://www.epa.gov/sites/production/files/2015-10/documents/20040301-2004-p-00007.pdf>

- Fann, N., T. Brennan, P. Dolwick, J.L. Gamble, V. Ilacqua, L. Kolb, C.G. Nolte, T.L. Spero, and L. Ziska. 2016. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. U.S. Global Change Research Program, Washington, DC. Accessed April 2020 from <https://health2016.globalchange.gov/>
- Foster, J. and R. McChesney. 2017. *Trump in the White House: Tragedy and Farce*. NYU Press
- Fussell, Elizabeth, and Sarah R. Lowe. 2014. "The impact of housing displacement on the mental health of low-income parents after Hurricane Katrina." *Social Science & Medicine* 113: 137-144
- Gant, Simeon. 2018. "Climate Change is a Public Health Crisis." Accessed October 2019 from <https://www.cablackhealthnetwork.org/climate-change-is-a-public-health-crisis/>
- Gwebu, T. 2002. "Energy sector policies in Botswana and their implications for global climate change", *GeoJournal*
- Hecht, Alan D., and Dennis Tirpak. 1995. "Framework agreement on climate change: A scientific and policy history", *Climatic change* 29, no. 4: 371-402. Accessed date September 2019 from <https://doi.org/10.1007/BF01092424>
- Hoerner, J. Andrew and Nia Robinson. 2008. *A Climate of Change: African Americans, Global Warming, and a Just Climate Policy for the U.S.*, © Environmental Justice and Climate Change Initiative

- Intergovernmental Panel on Climate Change (IPCC). 2007. "Climate Change: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change", Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.). Cambridge: Cambridge University Press
- Jones, Dow. 2021. "CQ Roll Call: Political Transcripts" © 2021 Dow Jones & Company, Inc. All Rights Reserved. Accessed January 2, 2021 from https://www.wsj.com/talk2020/candidates/donald-trump/quotes/CHTS000020200930eg9t00002_Q930_SP85611_EP86348
- Kelman, Ilan. 2014. "No Change from Climate Change: Vulnerability and Small Island Developing States", *The Geographical Journal* 180, no. 2: 120-29
- Li, K. David. 2020. "Minneapolis mayor says anger over George Floyd death 'not only understandable, it's right', " NBC News
- Lynch, John. 2002. *The Weather*. Firefly Books
- MacCarcken, Michael C. 2019. "What Is Climate Change?" In *Biodiversity and Climate Change: Transforming the Biosphere*. New Haven: Yale University Press
- Marks, Danny. 2011. "Climate Change and Thailand: Impact and Response", *Contemporary Southeast Asia* 33, no. 2
- McCright, A. M., & Dunlap, R. E. 2011. "Cool dudes: The denial of climate change among conservative white males in the United States", *Global environmental change*, 21(4)

Moms Clean Airforce. 2019. "Climate Change in the African American Community",
Accessed September 2019 from [What is Climate Change? - Moms Clean Air Force](#)

National Aeronautics and Space Administration (NASA). 2020. "Climate Kids",
Accessed June 2020 from <https://climatekids.nasa.gov/climate-change-meaning/>.

National Association for the Advancement of Colored People (NAACP).2020.
"Environmental and Climate Justice Program Goals", Accessed June 2020 from
<https://naacp.org/environmental-climate-justice-about/>.

NuestrasRaíces. 2017. "Agriculture", Accessed June 2020 from
<https://nuestrasraices.org/agriculture/>.

Osbahr, Henny, Chasca Twyman, W. Neil Adger, and David S. G. Thomas. 2010.
"Evaluating Successful Livelihood Adaptation to Climate Variability and Change
in Southern Africa", *Ecology and Society* 15, no. 2,

Painter, Nell Irvin. 2016. "What Whiteness means in the Trump era." *New York Times* 12

Ruppel, Oliver C., Johan Hattingh, Jaap Spier, Hans-Joachim Koch, Christian
Roschmann, and Ariranga G. Pillay. 2013. "Climate Change: International Law
and Global Governance Volume I: Legal Responses and Global
Responsibility", *Perspective* 10

Salamanca, Albert, and Ha Nguyen. 2016. *Climate change adaptation readiness in the
ASEAN countries Report*. Stockholm Environment Institute

Scheffran, Jürgen, Michael Brzoska, Jasmin Kominek, P. Michael Link, and Janpeter
Schilling. 2012."Climate Change and Violent Conflict", *Science*

Science Daily. 2020. "Air pollution", Accessed March 2020 from

https://www.sciencedaily.com/terms/air_pollution.htm.

Stanley-Becker, Isaac. 2019. "Whites are mainly to blame for air pollution, but blacks and Hispanics bear the burden, says a new study," The Washington Post.

Accessed March 2019 from

<https://www.washingtonpost.com/nation/2019/03/12/whites-are-mainly-blame-air-pollution-blacks-hispanics-bear-burden-says-new-study/>

Third Way. 2020. "Black Americans Care About Climate Change (But It's Complicated)" © Third Way. Accessed May 2020 from

<https://www.thirdway.org/memo/black-americans-care-about-climate-change-but-its-complicated>

Tigue, Kristoffer. 2019. "COVID-19 and Climate Change Threats Compound in Minority Communities", Inside Climate News. Accessed April 20, 2020 from [Covid-19 and Climate Change Threats Compound in Minority Communities - Inside Climate News](#)

United Nations. 2017. "Climate Change", Accessed August 2019 from

<https://www.un.org/en/sections/issues-depth/climate-change/>.

United Nations Framework Convention on Climate Change (UNFCCC). 2011. "Fact sheet:

Climate change science - the status of climate change science today." Accessed

August 2019 from [fact_sheet_climate_change_science\(unfccc.int\)](http://fact_sheet_climate_change_science(unfccc.int))

Waage, Jeff, and Christopher Yap. 2015. *Thinking beyond sectors for sustainable development*. Ubiquity Press

- Wang, Candice. 2020. "Black mothers face high death rates. Now they have to contend with climate change, too. "Pollution and heat affect Black pregnancies disproportionately. Popular Science, Accessed October 2020 from <https://www.popsci.com/story/health/black-mothers-health-pollution/>
- Weber, Elke U., and Paul C. Stern. 2011. "Public Understanding of Climate Change in the United States", *American Psychologist*
- WE ACT for Environmental Justice. 2017. "Communities Affected by Hurricanes Need Climate Change Solutions," Accessed May 2020 from <https://www.weact.org/2017/10/communities-need-solutions/>.
- White, Rob. 2018. *Climate Change Victims*. Bristol: Bristol University Press
- World Population Review (WPR) 2020. "Beaumont, Texas." © 2020 World Population Review. Accessed June 2020 from [Beaumont, Texas Population 2020 \(Demographics, Maps, Graphs\) \(worldpopulationreview.com\)](https://worldpopulationreview.com/demographics/maps/graphs/usa/2020/beaumont-texas/)
- Woods, Keith. 2020. An oil refinery in Port Arthur, Texas photo. © 2020 Corbis via Getty Images. Accessed December 2020 from [COVID-19 and Climate Change Threats Compound in Minority Communities - Scientific American](https://www.gettyimages.com/detail/photo/an-oil-refinery-in-port-arthur-texas-photo-corbis-via-getty-images/1318588880)
- Yancy, Clyde W. 2020. "COVID-19 and African Americans", *Jama*. American Medical Association. Accessed April 2020 from <https://jamanetwork.com/journals/jama/fullarticle/2764789>
- Zhuang, Juzhong, Suphachol Suphachalasai, and Jindra Nuella Samson. 2010. *The economics of climate change in Southeast Asia*. Published by: S. Rajaratnam School of International Studies

Ziervogel, G. and F. Zermoglio. 2009. "Climate change scenarios and the development of adaptation strategies in Africa: Challenges and opportunities", *Climate Research*, 40(2/3),