



# Consumerism, a Contributory Factor to Climate Change; the Case of Ghana

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**Abstract:** The study was motivated by the understanding that the unsustainable use of natural resources and human consumption patterns have become a significant threat to the environment and are contributing to climate change. The purpose of the study was the effect of consumerism on climate change, with a focus on Ghana. A narrative review methodology was used to summarize the existing literature from Web of Science, EBSCO database and other sources. The findings showed that the global output of carbon dioxide has risen by 66.5% from 1990 to 2019, with Ghana's output increasing by 62% in the same period. Climate change poses threats of extinction, habitat loss, death, and disease to both humans and other vulnerable species. It is recommended to adopt sustainable lifestyles with conscious consumption, prioritize sustainable forest management, and utilize carbon sequestration and storage in the ocean. Individuals should also make energy-efficient choices in transportation.

## INTRODUCTION

Climate change is a multifaceted phenomenon that can be attributed to both natural and anthropogenic causes (Jactel, Koricheva, and Castagneyrol, 2019). However, it is widely acknowledged that human activities are significantly contributing to the acceleration of the rate of change in the earth's climate. Factually, for an economy to survive, the production and consumption processes of that economy is vital. Ironically, production and consumption of goods is directly dependent on the use of natural resources, but tapping from this natural environment and recourses in recent times have been in a way that continues to affect the climate.

Climate change is already affecting every region of the globe in multiple ways, and these impacts are projected to become increasingly severe with further warming. The unsustainable extraction and utilization of natural resources, without consideration for future generations and the planet's well-being, is detrimental not only to human populations but also to other living organisms. It is essential to adopt sustainable management practices and to strive to leave the planet in a better state than it was found for the sake of future generations.

Essentially, Climate change is characterized by long-term shifts in temperature and weather patterns (Trenberth, 2018). For instance, recent cholera outbreaks in certain regions of Africa have been linked to climate change, because according to scientists, bacteria tend to multiply more faster in warmer areas (Ajayi, and Smith, 2019, Mahmud, et al. 2020). The fact remains that the problem of climate change is primarily a result of human actions (Trenberth, 2018). The consumption and production levels of goods have exceeded the earth's capacity to sustain

them without significant negative consequences. In Ghana, for example, most people own more than one house and multiple cars, leaving more carbon footprints behind daily (Bai, et al. 2022).

Consumerism is the predisposition on the part of individuals to consume and keep consuming. Human beings are said to be insatiable and the determination to buy and own more stuff to satisfy one's needs comes natural with several individuals. This need, backed by the ability to buy drives producers to improve upon their products often by just building on them a little; say changing technological devices from version to version. This technique by producers drives consumers to stay updated on technological advancements; a problem of the "chicken and hen" story; leading them to buy and keep buying non-stop. The issue of consumerism cuts across everything from extraction and exploitation of natural resources, through to production, and its problems of externalizing costs – not capturing the real cost of producing the stuff, hence making it affordable; to consumption of stuff by being patrons of products, and endlessly shopping, through to disposal of the stuff within months of acquisition. The big question is, where do all the stuff we buy come from, and where do they end up when we throw them out? The planet suffers and in response, it is changing on us by the day. This is where we, by wanting to satisfy our needs, have driven nature to – all it can do is change on us, perhaps tell us she is suffering by diverting its cause. Is there something we can do to help solve the problem? Perchance there is a little lifestyle change we all could adapt; it's simple, "stop buying stuff!" or better, "just buy what we need!".

## **OVERVIEW OF GHG EMISSIONS IN GHANA**

An analysis of data from the World Bank on greenhouse gas (GHG) emissions, shows that the global output of carbon dioxide has risen to 34,344,006kt in 2019 from 20,625,273kt in 1990; a staggering 66.5% increase over a period of less than three decades (World Bank,2020). This increase in emissions has also been observed in Ghana, with the country's output of carbon dioxide rising from 2,790kt to 20,040kt within the same time frame, representing a 62% increase in emissions. Despite being a small nation with only 0.4% of the global population, Ghana's overly reliance on imports rather than exports has resulted in the country contributing an average of 0.41% to the world's carbon dioxide emissions over this period. This trend is cause for concern, as it highlights the detrimental impact that human activity is having on the environment. This finding is in line with the results of previous studies, such as those conducted by Emmanuel, Jerry and Dzigbodi (2018), and Cobbinah, Poku-Boansi and Peprah (2017), which have highlighted the detrimental impact that human activity is having on the environment. In particular, Emmanuel, et al. (2018) reviewed data on the environmental impacts of mining, such as pollution of water bodies, degradation of forest resources, and destruction of wildlife habitat. Similarly, Cobbinah, et al.(2017) revealed that Ghana experiences several serious environmental problems, including air and water pollution, and degradation of green areas. However, despite these pressing issues, attempts to manage these problems have been handicapped by a lack of understanding of their character and potential remedies. In light of the undeniable fact that the natural environment plays a crucial role in human well-being, both intrinsically and extrinsically, it is incumbent upon individuals and societies to take proactive measures to mitigate the detrimental effects of human activity on the planet. This entails a fundamental shift in lifestyle that reflects a heightened sense of concern and awareness for the needs of the planet and future generations, rather than perpetuating unsustainable practices that result in the degradation of the environment. It is imperative that greater consideration be given to the impact of human actions on future generations and their access to resources, given

that there exists only a finite and fragile planet. In order to preserve the planet for future generations, it is essential that individuals and societies engage in sustainable practices and make lifestyle changes that prioritize the regeneration and healing of the planet. This may involve the production of only what is absolutely necessary and being mindful of consumption habits, with a focus on the long-term health and sustainability of the planet.

## **THE DANGER AHEAD**

The human species, along with numerous other vulnerable animal and plant species, are currently facing significant dangers such as disease, extinction, habitat loss, and even death. The reality of the situation is that, if we continue to pursue our current course of action, these dire outcomes will inevitably come to pass. The Paris Agreement, an accord entered into by 196 parties, sets forth a goal of limiting global warming to 2°C, with an ambitious target of 1.5°C if possible. To achieve this goal, it is imperative that we reduce emissions across all sectors of society. Fortunately, there are various options available in each sector that could potentially lead to a halving of global emissions by 2030. However, if we do not take immediate and decisive action, we will be unable to limit global warming to 2°C, let alone the 1.5°C target. To achieve this goal, we must exert control over the burning of fossil fuels for electricity, heat, and transportation, as well as decrease production levels across all sectors. By doing so, we can reduce global greenhouse gas emissions and achieve the 1.5°C global target. The utilization of sustainable and renewable energy sources is essential to achieving this goal. As outlined in the IPCC report, climate change is intensifying the water cycle, resulting in more intense rainfall and associated flooding as well as more intense droughts in many regions. In essence, climate change is affecting rainfall patterns across the globe.

## **AN OVERVIEW OF THE CURRENT STATE OF GHANA'S CLIMATOLOGY**

The climate in Ghana in decades past has been a rather unrecognizable one as both days and nights, all year round have recorded rather hotter than usual temperatures. The more temperatures rise, the more the country and its surrounding nations are faced with the risk of increased heat-related human mortality, warm-water coral bleaching, and mortality, and increased drought-related tree mortality. The region also stands the risk of a shift of local species and mass mortality events both on land and in the ocean due to these increases in the magnitude of heat extremes. The maximum temperature recorded in 1992 was 32°C, and the minimum temperature in the same year was recorded at 22.17°C; whereas in 2021, the maximum temperature increased to 33.4°C and the minimum temperature also increased to 23.25°C. Correspondingly, precipitation in the year 1992 was recorded at 957.8mm and recorded at 1262.45mm in 2021; an increase of 32%. Figure 1 below shows the monthly climatology of minimum temperature, mean temperature, maximum temperature, and Precipitation in Ghana from the year 1991 to 2020. Per the graphs below, temperatures in Ghana continue to rise each year and this is the concern of the IPCC in terms of climate change. This is where the danger lies, the temperature rise has direct impacts on human health, the livelihood of the people, and even key infrastructure.

Figure 1

Monthly Climatology of Min-Temperature, Mean-Temperature, Max-Temperature & Precipitation 1991-2020  
Ghana

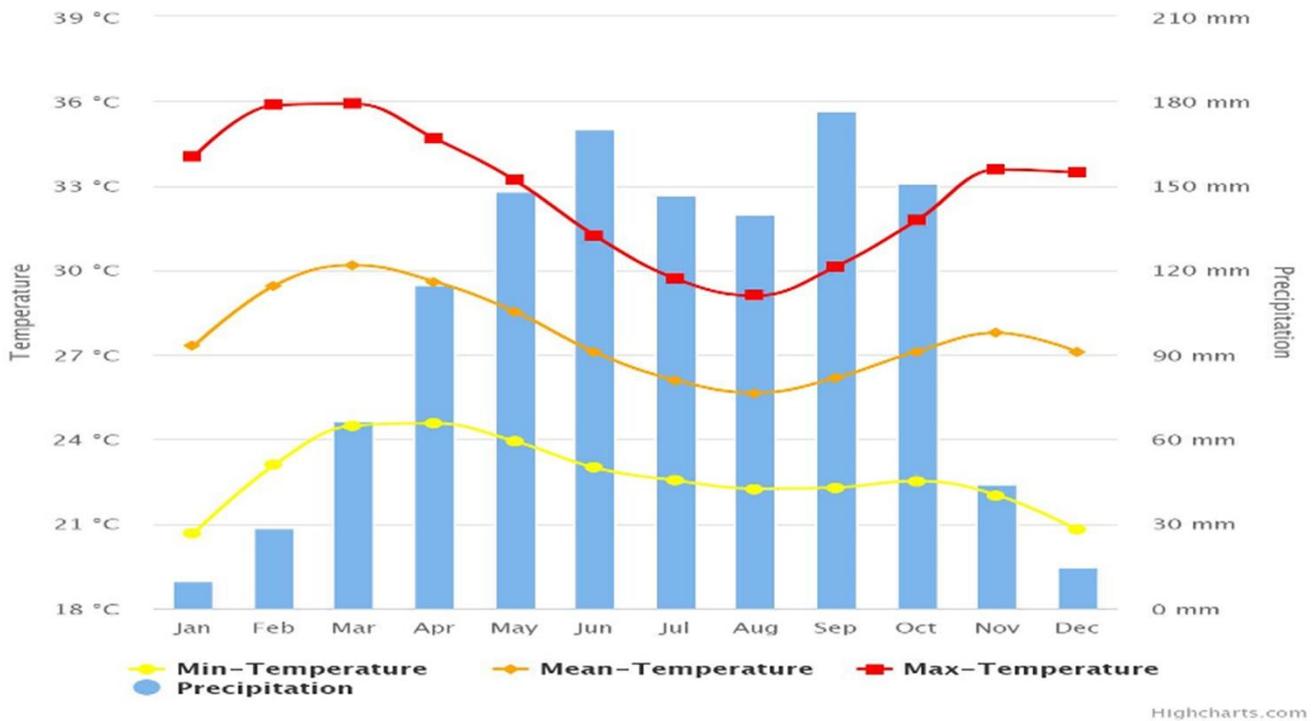
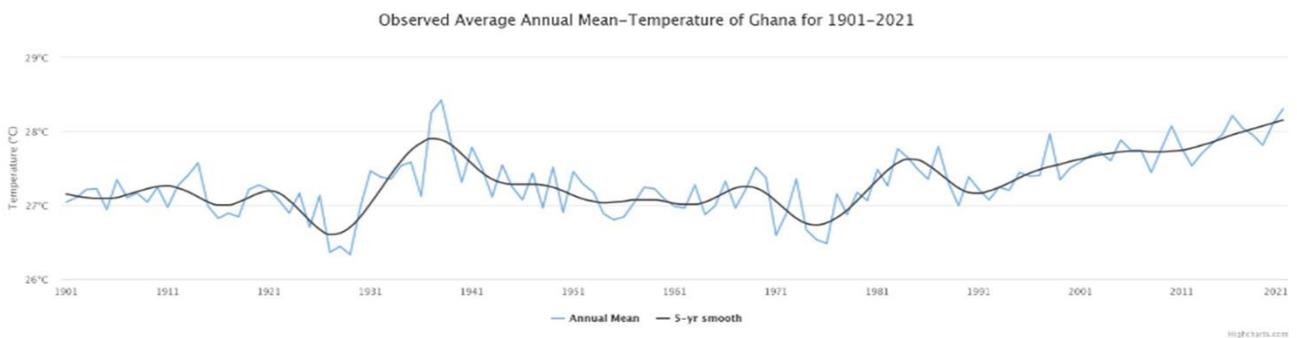


Figure 2



## OVERVIEW OF DEFORESTATION AND AGRICULTURE

Forests are host to an overwhelming proportion of the world's terrestrial biodiversity, boasting an impressive array of over 60,000 distinct tree species. The immense value of forests extends beyond their ecological significance, as approximately 1.6 billion individuals rely directly on these habitats for sustenance, shelter, energy, medicinal resources, and economic income (FAO, 2020). Despite the ubiquitous presence of forests in our daily lives, we often fail to recognize the integral role they play in providing the raw materials for a plethora of consumer goods and services, from writing materials to drinking water, pharmaceuticals to housing. However, as our society becomes increasingly consumerist, the demand for these products and services has led to the rapid depletion of natural forested lands.

Deforestation, in particular, takes place on a massive scale for the production of commodities such as palm oil in Malaysia and Indonesia, and the extraction of resources such as gold and bauxite in Ghana. Furthermore, vast expanses of forests are cleared to make way for industrial farmland. The effects of deforestation extend far beyond the immediate loss of biodiversity and displacement of human communities, as it also has a direct impact on climate change. When forests are cleared, the carbon stored within them is released into the atmosphere as carbon dioxide, exacerbating the already dire situation of climate change. Forests serve as important carbon sinks, meaning they act as a buffer against rising carbon dioxide levels in the atmosphere by sequestering carbon and releasing it back into the atmosphere when plants die. Experts have noted that carbon dioxide levels are currently at their highest in recorded human history, making the preservation of forests all the more critical. The more we continue to destroy forests for the sake of consumer goods and services, the more we contribute to the ongoing global crisis of climate change.

### AN OVERVIEW OF THE GHANA SITUATION ON DEFORESTATION

Over the course of the past three decades, Ghana has experienced a significant decline in its forested areas, with a reduction from 41.3% in 1995 to 35.1% in 2020. This represents a loss of approximately 15% of the country's forests, which can be attributed to various forms of production, including mining, agriculture, and urbanization. Notably, the percentage of land designated for agricultural use has fluctuated over time, rising from 55.9% in 1992 to 59.9% in 1997, before declining to 55.4% in 2020 (World Bank, 2021). Concurrently, Ghana has seen a significant increase in its urban population, rising from 5,933,400% in 1992 to 18,399,874% in 2021, a 210% increase. This trend of losing natural forests to settlements, agriculture, and mining activities has dire consequences for the climate. As the country continues to lose its forests, the oxygen supply decreases, and carbon dioxide in the air increases, resulting in higher humidity in the region. This, in turn, leads to higher temperatures and an increased risk of biodiversity loss and even extinction, as well as higher rates of plant and human mortality. This cycle of degradation perpetuates itself, causing a detrimental impact on the environment and the well-being of the population.

## MANUFACTURING PROCESSES

Manufacturing processes represent a significant anthropogenic activity that contributes to the phenomenon of climate change (Dunlap, and McCright, 2015). The environmental cost associated with the production of the various goods and commodities is alarmingly high in comparison to the satisfaction derived from their acquisition. Emissions from manufacturing and industrial operations, primarily resulting from the burning of fossil fuels to generate energy for the production of goods such as iron, steel, cement, electronics, plastics, clothing, and other items, as well as mining activities, release greenhouse gases into the atmosphere at an alarming rate (Hussain, et al. 2019). These gases trap heat within the atmosphere, thereby elevating the temperature of the planet and contributing to the phenomenon of climate change. If immediate and decisive action is not taken to control production and consumption, it is likely that a wide range of living organisms, ranging from the majestic orangutan to the smallest and most insignificant microorganisms, will face extinction. Studies indicate that, with warming of 1.5 degrees Celsius, an estimated 14 percent of the Earth's population will be exposed to severe heatwaves at least once every five years, with this number rising to 37 percent at 2 degrees Celsius warming (IPCC, 2022). Furthermore, the IPCC 2022 report also studied 105,000 species of insects, plants, and vertebrates, and found that at 1.5 degrees Celsius warming, 6 percent of insects, 8 percent of plants, and 4 percent of vertebrates will see their climatically determining geographic range reduced by more than half. The loss of biodiversity, pollution, and their interactions negatively impact the capacity of ecosystems, societies, communities, and individuals to adapt to climate change (IPCC, 2022).

Furthermore, mining operations also face significant physical risks due to climate change. Many mines operate in areas that are exposed to climate risks, and they will become increasingly vulnerable to recurrent shocks as the phenomenon of climate change continues to unfold. For instance, extreme weather conditions may compromise the stability of tailings storage facilities and exacerbate tailings dam failures, resulting in devastating consequences, as witnessed in 2014 at Mount Polley in British Columbia, Canada, and more recently with the collapse of the tailings dam in January 2019 in Brumadinho, Brazil, which resulted in the loss of 270 lives (Ramdoo, 2022). In Ghana, there has been a significant increase in methane emissions over time, as evidenced by the data collected by Climate Watch (2020). Specifically, in 1992, the recorded emission of methane was 5,210 kilotons of CO<sub>2</sub> equivalent, whereas in 2019, the recorded emission was 10,900 kilotons of CO<sub>2</sub> equivalent (Climate Watch, 2020). This constitutes a staggering 109% increase in methane emissions over the course of 27 years. This data suggests that the production processes within Ghana, particularly those stemming from agriculture and industry, are contributing to the exacerbation of climate change indicators at a relatively high annual rate.

## GENERATING POWER

The use of fossil fuels, such as coal, oil, and natural gas, for the generation of electricity and heat, has been identified as a major contributor to global emissions (Karmaker et al., 2020). While the provision of electricity and heat is vital for human survival, it has become increasingly detrimental to the preservation of the planet. Despite the necessity for comfort and convenience, it is imperative that we do not compromise the earth's ability to adapt to the rapid changes that human activity is causing. The implementation of clean and renewable energy

sources is crucial in achieving the goals set forth by the Paris Agreement, which aim to limit global average temperatures and mitigate the effects of severe storms and droughts. Currently, the majority of electricity generation in various regions is still reliant on the burning of fossil fuels. Despite the availability of renewable energy sources, a mere quarter of electricity production comes from wind, solar, and other sustainable sources (United Nations, 2021). Data from the World Bank reveals that while electricity production from oil sources decreased by 61% from 8.5% in 1995 to 3.3% in 2015 (World Bank, 2020), the decline in the use of oil was unfortunately replaced by an increase in electricity production from coal sources, rising from 37.3% to 39.1% within the same period.

## **ENVIRONMENTAL POLLUTION**

The pollution of water sources has become a pressing issue in recent years, as a result of the proliferation of waste, both household and industrial, oil spills, sewage, and factory processes. The increase in urbanization in Ghana between 1992 and 2021, which was as high as 210%, has further exacerbated this problem, as migration from rural to urban areas has led to overcrowding, environmental pollution, and inadequate sanitization. Additionally, the escalation of industrialization and commercialization has had a direct impact on the consumption of fossil fuels, which has subsequently led to global warming and a significant contribution to climate change. According to data from the World Bank Group (2020), fossil fuel energy consumption in Ghana was recorded at 16.1% of total in 1992, and by 2014, this figure had risen to 52.5% of total, representing a staggering 226% increase. In Ghana, water pollution has become a particularly pressing issue, as illegal small-scale mining has led to the contamination of 60% of water bodies in the country, as a result of the use of toxic chemicals such as mercury.

## **CONCLUSION**

In order to effectively address the pressing issue of climate change, it is imperative that individuals and society as a whole adopt sustainable lifestyles that prioritize conscious consumption and the consideration of the environmental impacts associated with consumerism. Rather than viewing the acquisition of material possessions as a means of personal satisfaction, it is crucial that individuals only purchase what is truly necessary. Additionally, the implementation of sustainable forest management schemes must be a priority in all regions in order to combat the effects of climate change and ensure the prosperity and well-being of both current and future generations.

To combat the pressing issue of climate change, it is crucial to prioritize areas that have the potential to efficiently reduce carbon dioxide emissions, such as tropical peat swamp forests. These forests are renowned for their ability to store large amounts of carbon, which can serve as a means to counteract emissions caused by deforestation and the burning of fossil fuels. By effectively sequestering a significant portion of carbon stocks from these activities, the negative impact of excess carbon on the environment can be mitigated. Additionally, it is possible to continue producing the necessary goods and resources in a sustainable manner.

Another potential strategy that can be employed is the utilization of carbon sequestration and storage in the ocean through direct injection and the cultivation of seaweeds, such as kelp. This technique can be employed to offset emissions resulting from industrial processes that are integral to our daily lives. Individuals can also play a crucial

role in reducing greenhouse gas emissions by choosing energy-efficient products and making smart transportation choices. It is unfortunate, however, that according to the Intergovernmental Panel on Climate Change (IPCC) report, a disproportionate number of emissions are caused by a small percentage of the wealthiest individuals in the world. Despite this, it is important to remember that we are all collectively responsible for addressing this issue. Ultimately, it is essential for our culture and lifestyle choices, including the products we consume and the methods by which we travel, to undergo a significant shift towards sustainability for the sake of future generations. The decisions made in the coming decades will have a profound impact on the future of our planet, and it is up to us to ensure that future is a liveable one.

## ACKNOWLEDGMENT

First, I would like to thank God for seeing me through all the challenges and helping me grow by the day as I embarked on this journey, I know my story isn't ended but just beginning. Thank you, Jesus, for being right there with me even in times when I felt like giving up. Thank you, Holy Spirit for the daily promptings to press on the more for the finish line.

I would like to acknowledge and give my warmest gratitude to my husband and career coach, Mr. Seth Kwaku Ansah Obiri, who made this work possible by not standing in my way but rather kept encouraging me to push harder and supporting me in any way he could. His encouragement and advice, as well as prayers throughout every stage of this work, are tremendously appreciated and shall not be overlooked. A special thanks go to my dear daughter, Jenelle, Maame Obiribea Obiri, for being my support and confidant even in times when I blacked out and couldn't find my words. To Elaine Ablakwa, my only sister, who remains my support system, I say, I'm still looking up to you and following in your footsteps, the sky is the limit indeed. Your advice and kind words have not gone unnoticed.

My final thanks go to all my professors and faculty members who reviewed the final work and for their input, especially, Dr. Isaac Junior Dampsey and Professor Raymond Dziwornu. My heartfelt appreciation goes to you both for not saying no to me when I needed you; I say, you are a part of this story and for that, God bless you.

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