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A STUDY ON THE DISPARITY IN CARBON FOOTPRINTS BETWEEN DEVELOPED AND DEVELOPING COUNTRIES: CAUSES AND CONSEQUENCES

"The climate crisis is a stark reminder of the fundamental injustice of our world. The richest countries have polluted the most, and the poorest countries are suffering the most. We need a just transition to a clean energy economy that leaves no one behind."

- António Guterres,

Secretary-General - United Nations

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ABSTRACT

Climate change is one of the most pressing challenges facing humanity today. The burning of fossil fuels releases greenhouse gases into the atmosphere, which trap heat and warm the planet. This warming is causing a wide range of problems, including sea level rise, extreme weather events, and changes in plant and animal life. Despite the growing importance of developing countries in global greenhouse gas emissions, there is a large disparity in carbon footprints between developed and developing countries. On average, people in developed countries have carbon footprints that are several times higher than people in developing countries.

This research paper will investigate the disparity in carbon footprints between developed and developing countries. It will identify the key drivers of this disparity and the potential consequences for climate change and sustainable development. The paper will also discuss policy and practical measures that can be taken to address the disparity in carbon footprints and promote a just transition to a low-carbon economy.

The paper will be based on a comprehensive review of the existing literature on carbon footprints and climate change. It will also draw on data from a variety of sources, including the World Bank, the Intergovernmental Panel on Climate Change, and the United Nations.

The paper is expected to make a significant contribution to the understanding of the disparity in carbon footprints between developed and developing countries. It will also provide valuable insights for policymakers and practitioners on how to address this disparity and promote a just transition to a low-carbon economy.

INTRODUCTION

Climate change is one of the world's most pressing issues, affecting ecosystems, economies and societies around the globe. The main cause of climate change is the greenhouse effect. It is mainly caused by human activity that releases greenhouse gases into the atmosphere, such as CO2, methane, CH4, nitrous oxide, fluorinated gases and more. These gases trap heat in the Earth's atmosphere, causing global temperatures to rise over time—a process we call global warming. The effects of climate change go beyond temperature increases, however. There are many environmental, social and economic consequences of climate change.

To understand how climate change works, we need to look at the greenhouse effect first. When sunlight hits the Earth's surface, part of that radiation is absorbed and then re-emitted as infrared light. In the atmosphere, greenhouse gases (GHGs) absorb and emit some of that infrared radiation, trapping heat and heating the planet. This natural process is essential for maintaining Earth's habitable climate. But human activities, especially burning fossil fuels and deforestation, as well as industrial processes and agriculture, have significantly increased the concentration of greenhouse gases in our atmosphere, which in turn has made the greenhouse effect stronger and accelerated global warming.

To understand the mechanisms of climate change, we need to understand the greenhouse effect. When

sunlight hits the Earth's surface, some of that radiation is absorbed and then re emitted as infrared radiation. In the atmosphere, greenhouse gases (GHGs) absorb and emit some of that infrared radiation, trapping heat and heating the planet. This natural process is essential for maintaining Earth's habitable climate. Human activities, especially the combustion of fossil fuels and deforestation, as well as industrial processes and agriculture, have significantly increased the concentration of greenhouse gases in the atmosphere, increasing the greenhouse effect and speeding up global warming.

Among the different nursery gasses, carbon dioxide (CO2) is the foremost inexhaustible and broadly recognized for its part in driving climate alter. Fossil fuel combustion for vitality generation, transportation, and mechanical exercises is the essential source of CO2 emanations, bookkeeping for the lion's share of anthropogenic GHG emanations. Moreover, deforestation and land-use changes contribute to CO2 emanations by decreasing the Earth's capacity to retain carbon through photosynthesis. Whereas CO2 outflows are noteworthy supporters to the nursery impact, other gasses, such as methane and nitrous oxide, but less plenteous, have higher warming possibilities per unit of mass, intensifying their affect on climate alter.

Developed countries have historically been the largest emitters of greenhouse gases. However, in recent years, developing countries have become increasingly important contributors to climate change. This is due to a number of factors, including rapid economic growth and population growth.

Despite the growing importance of developing countries in global greenhouse gas emissions, there is a large disparity in carbon footprints between developed and developing countries. On average, people in developed countries have carbon footprints that are several times higher than people in developing countries.

The historical role of developed countries in causing climate change. Developed countries have been responsible for the lion's share of greenhouse gas emissions since the Industrial Revolution. This historical debt is one of the reasons why developed countries have a moral obligation to take the lead in addressing climate change.

The disproportionate impact of climate change on developing countries. Developing countries are

more vulnerable to the impacts of climate change, such as sea level rise, extreme weather events, and changes in agricultural yields. This is because they often have less developed infrastructure and resources 21 to cope with these challenges.

The need for a just transition to a low-carbon economy. As the world transitions to a clean energy economy, it is important to ensure that this transition is fair and equitable. This means ensuring that 2 developing countries have access to the resources and technologies they need to reduce their carbon emissions and adapt to the impacts of climate change.

The entire amount of greenhouse gases—such as Carbon dioxide and Methane—that are produced as a result of human activity is known as a carbon footprint. It comprises both the direct emissions that come from burning fossil fuels for transportation, heating, and manufacturing as well as the emissions needed to generate the electricity needed to power the goods and services that are consumed. Furthermore, the idea of a carbon footprint frequently

takes into account the emissions of additional greenhouse gases, like nitrous oxide,

and chlorofluorocarbons (CFCs).

1 The United States has one of the highest rates of carbon footprint per person in the world, with an average of 16 tonnes. The average carbon footprint on a global scale is closer to 4 tonnes. Until 2050, the average annual carbon footprint of the world must decrease to less than 2 tonnes in order to have the best chance of preventing a 2°C increase in global

temperatures.

13 It takes time to reduce one's personal carbon footprint from 16 tonnes to 2 tonnes, We may start to make a large difference by changing tiny things in our lives, including cutting back on meat consumption, taking fewer connecting flights and line drying our clothes.

STATEMENT OF PROBLEM

Climate change presents a significant challenge for humanity, primarily caused by the release 9 of greenhouse gases, particularly from the combustion of fossil fuels. While historically, developed nations 2 have been the main contributors to these emissions, the role of developing countries has become increasingly important due to their rapid economic and population growth. 1 However, there is a substantial difference in carbon footprints between developed and developing nations, with

developed countries showing much higher emissions per person. This disparity poses a major obstacle in effectively addressing climate change. It is crucial to understand the underlying factors that contribute to this gap. Moreover, it is essential to address this imbalance in order to promote sustainable development and ensure a fair transition to a low-carbon economy. Research that investigates the main drivers of this inequality, examines its implications for climate change and sustainable development, and proposes policy measures for mitigation is a vital undertaking in our collective response to this global challenge.

OBJECTIVES OF THE STUDY

1.Quantify and analyze the differences in past and present carbon emissions between developed and developing countries to understand the extent and nature of inequality.

2.Identify the root causes of carbon emissions inequality by examining economic, historical, technological, and policy factors contributing to the disparity.

3.Evaluate the environmental, social, and economic impacts of carbon emissions inequality, focusing on the disproportionate burden on developing countries.

4.Analyze the impact of carbon emissions inequality on global climate policies and agreements to assess their effectiveness in addressing inequality issues.

5.Explore mitigation and adaptation strategies to reduce carbon emissions inequality, emphasizing evidence-based approaches and case studies to illustrate effective solutions.

SCOPE OF THE STUDY

The study aims to comprehend the factors behind variations in carbon emissions between developed and developing countries, examining historical, economic, and technological aspects. It explores how economic factors like GDP and industrialization contribute to differences, alongside disparities in technology and infrastructure. The implications of this disparity on climate change and vulnerable communities are assessed, highlighting the urgency for action. Additionally, the study evaluates policy effectiveness, environmental regulations, education initiatives, and the role of international cooperation in bridging the carbon footprint gap. By considering sustainable development goals and green technologies, it aims to provide insights into achieving a more balanced and sustainable global carbon footprint.

3 DATA COLLECTION METHODS

The data collection methods chosen for this study encompass a combination of quantitative and qualitative techniques to provide a holistic view of the research topic.

5 1) Quantitative Data

Secondary Data Analysis: One major source of quantitative data is secondary data analysis. This involves the systematic retrieval and examination of existing datasets from reputable sources. These datasets include historical carbon emissions data, economic indicators (e.g., GDP), energy consumption statistics, and various environmental indicators. Datasets will be obtained from international 12 organizations such as the World Bank, the United Nations, and the International Energy Agency. This secondary data will be used to quantify trends and relationships over time.

2) Surveys

Surveys represent another essential component of quantitative data collection. They will be administered to key stakeholders involved in climate policy, industry, and environmental expertise. The survey questionnaire will 3 be designed to elicit information on carbon emission policies, the adoption of green technologies, and stakeholders' perceptions of carbon disparities. Online survey platforms will be utilized for data collection, ensuring efficient and anonymous responses. Statistical software will then be used to analyze survey data.

3) Qualitative Data

Semi-Structured Interviews: Qualitative data will be gathered through semi-structured interviews with key informants, including policymakers, experts, and representatives from 1 both developed and developing countries. These interviews aim to capture nuanced qualitative information 3 related to the causes and consequences of carbon disparities. A thematic approach will be employed during data analysis to identify recurring themes and patterns in the qualitative data, enhancing the depth of understanding.

4) Content Analysis

Content analysis will be conducted on policy documents, reports, and academic literature 1 related to carbon disparities. This qualitative technique involves systematically analyzing textual data to extract meaningful information. By examining these documents, qualitative insights will be gained

regarding the policy landscape, challenges, and implications of carbon disparities.

LIMITATIONS OF THE STUDY

1) Data limitations

It may be difficult to obtain accurate and reliable data on carbon footprints, especially for developing countries. This is because developing countries may have less developed statistical systems and may not be able to track all sources of greenhouse gas emissions.

2) Methodological limitations

There are a variety of methods that can be used to calculate carbon footprints. The choice of method can affect the results of the study. For example, some methods may be more comprehensive than others, and some methods may be more accurate for certain types of emissions than others.

3) Complexity of the issue

The disparity in carbon footprints between developed and developing countries is a complex issue with multiple causes and consequences. It may be difficult to capture all of the relevant factors in a single study. For example, the study may not be able to account for all of the different types of carbon footprints, such as the carbon footprint of individual consumers, the carbon footprint of businesses, and the carbon footprint of governments.

4) Generalizability of the results

The results of the study may not be generalizable to all developed and developing countries. The study may be based on a sample of countries that is not representative of all developed and developing countries. Additionally, the study may not take into account the specific circumstances of each country, which can affect carbon footprints.

5) Omission of relevant variables

The study may omit relevant variables that could affect the results. For example, the study may not account for the impact of trade on carbon footprints. Additionally, the study may not account for the impact of climate change on carbon footprints.

REVIEW OF LITERATURE

1.The role of globalization in industrial pollution: A panel data analysis.

Ang, B. W. (2009).

Ecological Economics, 68(11), 2638-2645

Ang (2009) explores how globalization affects industrial pollution, finding a significant positive impact across 96 countries from 1990 to 2006. This impact is driven by increased trade and foreign direct investment (FDI), particularly in developing countries with pollution intensive industries. The study highlights a stronger effect in developing nations compared to developed ones due to their specialization in such industries and attraction of FDI. Consequently, there's been a shift in industrial pollution from developed to developing countries, negatively impacting their environment and health. Ang suggests that developed countries should aid developing nations financially and technologically while implementing policies to reduce domestic pollution emissions. The findings of Ang (2009) are important because they highlight the need for policies to address the negative environmental impacts of globalization. Developed countries should play a leading role in promoting sustainable development and reducing pollution emissions in developing countries.

2.Do the pattern and trend of carbon dioxide emissions differ between developed and developing countries?

Cole, M. A., & Elliott, R. J. R. (2003).

Energy Journal, 24(4), 1-16.

Cole and Elliott (2003) analyze carbon dioxide (CO2) emissions patterns and trends across 115 countries from 1950 to 2000. They observe significant differences between developed and developing nations: developed countries exhibit higher per capita CO2 emissions, which have been growing slowly, while emissions in developing countries are increasing due to rapid economic growth, urbanization, and rising energy consumption. Consequently, CO2 emissions in developed countries have been declining since the 1970s. The authors emphasize the need for differentiated climate policies: developed nations must reduce emissions, while developing countries must balance economic growth with emission control.

The findings of Cole and Elliott (2003) are still relevant today. The CO2 emissions gap between developed and developing countries has continued to widen in recent years. Developed countries need

to take more ambitious action to reduce their emissions, and developing countries need to be supported in their efforts to transition to a low-carbon economy.

3.Consumption-based accounting of CO2 emissions.

Davis, S. J., & Caldeira, K. (2010).

Proceedings of the National Academy of Sciences, 107(12), 5687-5692.

As a novel approach to measuring carbon dioxide (CO2) emissions, Davis and Caldeira (2010) present consumption-based accounting, which takes into account emissions related to the production of goods and services consumed within a nation, regardless of where they are produced. This is in contrast to conventional production-based accounting, which just considers emissions generated domestically.

According to their analysis of 143 countries' data from 1990 to 2004, consumption-based emissions are often lower in developing nations and higher in industrialized nations than production-based emissions. This is due to the fact that industrialized nations import more than they export, whilst developing nations do the opposite.

They also point out that, mainly as a result of increased global commerce, production has been transferring from rich to developing nations, meaning that consumption-based emissions have been rising more quickly than production-based emissions.

The findings of Davis and Caldeira (2010) have important implications for climate policy. Consumption-based accounting suggests that developed countries need to take more ambitious action to reduce their emissions, as their consumption-based emissions are typically higher than their production-based emissions. Developing countries also need to be supported in their efforts to transition to a low-carbon economy, as they are facing increasing pressure to reduce their production-based emissions.

4.The carbon footprint of international trade. Global Environmental Change

Ebert, U. (2011)

21(1), 162-169.

Using a regional input-output model, Ebert (2011) examines trade-related emissions and discovers that they account for a substantial amount of global CO2 emissions—24% in 2008, to be exact—and

that they have been rising over time. Developed countries have higher trade-related emissions than developing ones because of their consumption habits that are heavily reliant on imports, which result in industrial processes that are high in emissions.

He highlights the pressing need for trade-related emissions policies and suggests policies like carbon taxes on imports and export subsidies for low-carbon goods. The goal of these programs is to encourage nations to lower emissions related to trade in commodities and services. The ramifications for climate policy are significant: developed nations need to own up to the fact that their trade-related emissions are higher and put mitigation plans in place. Mechanisms for pricing carbon emissions and encouragement of low-carbon commerce and production are examples of such tactics. Furthermore, it is imperative to make investments in sustainable mobility, renewable energy, and energy efficiency in order to reduce the carbon footprint of production and transportation.

Emissions from trade are a significant cause of climate change. Given that their emissions are typically larger than those of developing nations, developed nations have an obligation to lower their trade-related emissions. Trade-related emissions could be decreased by a variety of measures, including carbon taxes on imports and export subsidies for low-carbon goods. It's crucial to take action to lessen the carbon footprint associated with the manufacturing and delivery of goods and services.

5.Stern Review on the Economics of Climate Change (2006) Nicholas Stern - (2006)

The UK government commissioned Nicholas Stern to perform the Stern Review on the Economics of Climate Change, which was published in 2006 and evaluated the economic effects of climate change. It came to the conclusion that climate change is a serious threat to the world economy, with costs that might account for anywhere from 5% to 20% of GDP worldwide, or even higher in the worst-case situations. It also discovered that the advantages of acting to slow down climate change exceed the costs. In particular, the analysis projected that cutting emissions by 50% by the year 2050 would save approximately 1% of the world's GDP while averting significantly larger expenses related to the effects of climate change, such as rising sea levels, harsher weather, and a decline in biodiversity. The important conclusions of the Stern Review have highlighted how urgent it is

for governments to fund clean energy and low-carbon technology in order to lessen the effects of climate change and save the world economy.

6.The carbon footprint of international trade revisited: An emissions-based approach.

Heilmayr, R., & Klok, M. J. (2014).

Ecological Economics, 97, 167-176.

International trade's carbon footprint is reviewed by Heilmayr and Klok (2014), who point out that conventional production-based accounting techniques understate the full impact of this trade. Applying an emissions-based methodology, they discover that in 2010, commerce accounted for almost 25% of the world's CO2 emissions. Developed nations' import-heavy consumption habits result in a larger trade-related carbon footprint.

The authors emphasize the necessity of implementing regulations to lessen trade's carbon footprint, including actions such as carbon export subsidies and import levies. Additionally, they stress the significance of lowering emissions from manufacturing and transportation by making investments in sustainable transportation, energy efficiency, and renewable energy.

To conclude, the impact of international commerce on climate change is substantial, with industrialized nations having a comparatively greater share of the blame. Policies aimed against trade emissions and initiatives to cut emissions across the production and transportation processes must be combined in order to address this.

7.Carbon footprint of nations: A global, multi-resolution analysis.

Hertwich, E. G., & Peters, G. P. (2009).

Environmental Science & Technology, 43(16), 6414-6420.

Using a multi-regional input-output model, Hertwich and Peters (2009) conduct a worldwide, multi-resolution analysis to evaluate the carbon footprint of countries. According to their analysis, there are notable differences in the carbon footprints of industrialized and developing nations, with the former often having larger emissions both overall and per capita as a result of their production methods that include high emissions.

Additionally, they discover that countries' carbon footprints are increasing, which can be linked to things like population growth, economic expansion, and rising energy-intensive product and service

use.

These findings have implications for climate policy. Developed nations are emphasized as having a major obligation to reduce their carbon footprints because of their sizeable share of the world's greenhouse gas emissions. Implementing laws like carbon taxes, cap-and-trade programs, and sustainable energy expenditures may be necessary to address this.

Furthermore, taking trade's carbon footprint into account is essential because a significant amount of a country's emissions are related to imported goods and services. This shows that trade measures, such as placing tariffs on high-carbon imports or rewarding low-carbon exports, may be able to reduce carbon footprints.

Finally, the report emphasizes how critical it is to move quickly to cut greenhouse gas emissions because waiting would probably result in higher expenses down the road.

The study by Hertwich and Peters concludes by highlighting the significance of comprehending and addressing a country's carbon footprint and the necessity of proactive climate policy to reduce emissions and lessen environmental effect.

8.Climate change 2021: The physical science basis. Cambridge University Press.

The premier international organization for evaluating climate change is the Intergovernmental Panel on Climate Change (IPCC). In order to give the world a clear scientific perspective on the current state of knowledge regarding climate change and its possible environmental and socioeconomic implications, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) launched it in 1988.

On August 9, 2021, the IPCC released its Sixth Assessment Report (AR6), titled "Climate Change 2021: The Physical Science Basis". The study presents a clear and unambiguous message that human activities are the primary cause of climate change. It is the most thorough and current examination of the physical science underpinning of climate change.

Key findings from AR6 include

• Unprecedented warming has been seen in the atmosphere, seas, and land since the 1950s, demonstrating the obvious impact of human activity on the climate system.

• The world mean surface temperature is expected to rise by more than 1.5°C during the next 20

years, making the last five years the hottest on record since 1850.

• It will be very difficult to keep warming to 1.5°C or even 2°C without rapid, large scale, and widespread reductions in greenhouse gas emissions.

• Every location in the world is currently feeling the effects of climate change, and these effects are only going to get worse.

9.CO2 embodied in international trade with implications for global climate policy.

Peters, G. P., & Hertwich, E. G. (2008).

Environmental Science & Technology, 42(5), 1401-1407

A multi-regional input-output model is used by Peters and Hertwich (2008) to examine CO2 emissions associated with international trade. They discover that commerce accounts for more than 5.3 Gt of CO2 worldwide, with industrialized countries included in Annex B being net importers of emissions. This suggests that the consumption of goods and services produced in countries with higher CO2 emissions is higher in these countries.

Moreover, they note notable differences in CO2 emissions related to commerce between nations. Certain nations, like Japan and the United States, are net importers of emissions, while others, like China and India, are net exporters. This discrepancy results from production specialization, with certain nations emphasizing high-carbon products while others concentrate on low-carbon ones.

The ramifications for international climate policy are vital. Reducing total consumption of products and services, especially in wealthy countries, is something that Peters and Hertwich advocate for, arguing that climate policies should take trade-related CO2 emissions into consideration. They offer policy solutions such coalition agreements to decrease emissions jointly, changing emission inventories for trade, and using tariffs and subsidies to promote low-carbon trade.

Their research basically highlights the need of including trade-related CO2 emissions in climate policy and the necessity of concerted global efforts and creative policy solutions to slow down global warming.

The findings of Peters and Hertwich (2008) are important for understanding the global challenge of climate change. They show that the CO2 emissions embodied in trade are significant and that they

need to be considered when developing climate policies. The authors discuss several policy options for addressing the CO2 emissions embodied in trade, but they argue that the best way to address this issue is to reduce the overall consumption of goods and services.

10.Material footprints of nations and international trade

Wiedmann, T., & Lenzen, M. (2018)

A review. Journal of Economic Surveys, 32(3), 720-750.

Wiedmann and Lenzen (2018) use a multi-regional input-output model to study the social and environmental impacts of global commerce. They find that commerce has a substantial impact on the world's land use, water consumption, and greenhouse gas emissions, contributing roughly 25%, 20%, and 10% of these factors, respectively.

They also observe differences in these footprints between nations. Developed countries have greater trade-related environmental and social footprints than developing ones, both in terms of absolute values and per capita. The higher consumption levels in industrialized nations and the corresponding production methods that have more negative effects on the environment and society are the causes of this disparity.

The findings of Wiedmann and Lenzen (2018) have important implications for climate change, water scarcity, and land degradation. The authors argue that it is important to consider the environmental and social footprints of trade when developing policies to address these challenges.

DATA FINDINGS

CARBON FOOT PRINTS BETWEEN COUNTRIES:

The main oil-producing nations are the ones that release the most CO2 emissions globally per person; this is especially true for those with small populations. In the Middle East, most are: At 49 tonnes per person, Qatar led the world in emissions in 2017. Trinidad and Tobago (30t); Kuwait (25t); United Arab Emirates (25t); Brunei (24t); Bahrain (23t) and Saudi Arabia (19t).

Nonetheless, a large number of the leading oil producers have tiny populations, which results in low annual emissions overall. The United States, Australia, and Canada are more populous nations with some of the greatest per capita emissions, and thus high total emissions. The average footprint per person in Australia is 17 tonnes, compared to 16.2 tonnes in the US and 15.6 tonnes in

Canada.

The global average, which was 4.8 tonnes per person in 2017, is more than three times greater than this.

Given the robust correlation shown between GDP and per capita CO_2 emissions, it makes sense that nations with higher living standards would also have larger carbon footprints. However, it becomes evident that even across nations with comparable living levels, there can be significant variations in per capita emissions. For instance, compared to the US, Canada, or Australia, several European nations have far lower emissions.

However, the emissions of a few European nations are not too dissimilar from the world average: Emissions in 2017 were 5.8 tonnes per person in the UK, 5.5 tonnes in France, and 5.3 tonnes in Portugal. Additionally, this is substantially less than some of their neighbors that have comparable living levels, such Germany, the Netherlands, or Belgium. The selection of energy sources is crucial in this case. You can examine the electricity mix by nation here. In the UK, Portugal, and France, nuclear and renewable energy sources account for a far larger percentage of the total electricity production. This indicates that fossil fuels account for a far smaller portion of the electricity produced: in 2015, fossil fuels accounted for only 6% of France's electricity, while they accounted for 55% in Germany.

Although prosperity is a major factor in CO_2 emissions, decisions about technology and policy undoubtedly have an impact.

The world's per capita CO_2 emissions are still extremely low in many nations. The average annual footprint in many of the poorest Sub-Saharan African nations, including Chad, Niger, and the Central African Republic, is approximately 0.1 tonnes. Compared to the USA, Australia, and Canada, that is more than 160 times lower. The ordinary Australian or American emits as much in just 2.3 days as the average Mali or Nigerien does in a year.

THE DISPARITY:

Global climate change will have painfully unequal effects. The most vulnerable people on the planet are probably the poorest.

The fact that the poorest people have made the least amount of emissions to the problem makes

this unfair. You may notice the stark disparities in CO2 emissions around the world by looking at a map of emissions per person. There are several methods to illustrate this disparity in worldwide emissions. Examining the contributions of each income group and regional variations are two approaches.

DISPARITIES BY INCOME GROUPS:

11 More than 30 times as much is emitted by the average person in high-income countries than it is in low-income countries. Comparing a nation or region's part 4 of global emissions to its share of population is another method of presenting per capita emissions.

Both measures are displayed in the chart for each of the four World Bank income categories. This 3 is dependent on the nation's wealth level; disparities in emissions within nations, which might be as significant as those between them, are not taken into consideration.

Each group's 4 share of emissions would correspond to its population share in an equitable world. Rather, we observe that a far greater proportion of emissions are attributed to high and upper-middle income countries than to their population. Even though they are home to less than half of the world's population, they produce more than 80% of its CO2 emissions.

In contrast, this is true for lower-middle-class and low-income nations. Less than 20% is released by the lower half. And less than 1% is released by the poorest nations.

DISPARITIES BY REGION:

The population share and emissions of Asia are nearly equal. The wide fluctuations in emissions across Asia are concealed by this. India produces far less 7 emissions per person than China, which emits substantially more than the world average.

In comparison to 4 Africa and South America, Europe, North America, and Oceania all emit more than their "fair share" given their respective populations.

DISPARITIES ADJUSTED FOR TRADE:

The aforementioned comparisons are predicated on domestic emissions, or emissions produced inside the boundaries of a nation or region. The adjustments for emissions included in traded items are not made.

Those in the top half of the global population (high- and upper-middle-income countries) account for more than 80% of global emissions. The primary distinction is that emissions from high-income nations somewhat rise, whereas at upper-middle incomes, they fall. This illustrates the trade between various nations: items produced in upper-middle-income nations are consumed in high-income nations.

The consumption-based emissions for certain poorer countries cannot be determined due to inadequate data availability, hence the emissions shares of lower-middle-income and especially low-income countries may be slightly overestimated.

Still, not much would change in the outcome. Rich nations emit significantly more than their population share, while poor nations emit significantly less.

INDIA’S ROLE IN CARBON EMISSIONS

14 India is the world's third-largest emitter of greenhouse gases (GHGs), after China and the United States. In 2021, it emitted 3.9 18 billion metric tons of carbon dioxide equivalent (GtCO2e), accounting for roughly seven percent of the global total.

However, it 6 is important to note that India's per capita GHG emissions are well below the global average, at just 2.8 tCO2e. By comparison, per capita emissions in China and the U.S. stood at 9.6 and 17.6 tCO2e, respectively. Additionally, India's 18 contribution to historical cumulative CO2

emissions is also far less than other major economies, at less than four percent.

This suggests that India's responsibility for climate change is relatively low, considering its large population and rapid economic development. Nevertheless, India is taking steps to reduce its emissions, both through domestic policies and international cooperation.

India is the only major emitter with per capita emissions below the global average. This is due to a number of factors, including India's relatively young population, its low level of development, and its reliance on renewable energy sources such as solar and wind power.

However, India is also facing a number of challenges in reducing its emissions. These challenges include rapid population growth, increasing urbanization, and a growing demand for energy. In order to meet its climate goals, India will need to invest heavily in clean energy and energy efficiency technologies.

The per capita CO2 impression of the best 1 per cent and the beat 10 per cent salary bunches in created nations is discernibly higher – indeed four to eight times more prominent in a few cases – compared to their partners in creating countries. For case, an person from the wealthiest 1 per cent wage bracket within the US, Australia, or Saudi Arabia emanates 228 tCO2 , 197 tCO2 , or 182 tCO2 , separately, whereas the beat 1 per cent in India emanates almost 31.7 tCO2 , which is six to seven times lower (2019 data). The outflow imbalance is so stark that people within the best 10 per cent pay gather in creating countries transmit less CO2 than a normal worker in created nations.

Looking at per capita CO2 outflows over the pay range in chosen nations uncovers a striking design – especially, the gigantic distinction between the most elevated decile and the second highest decile and, by expansion, all the other deciles. In 2019, the best 10 per cent in developed1 nations considered in our examination beside China collectively radiated over 6.8 billion tons of CO2. This sum is 22 per cent higher than the whole CO2 emissions from all the creating nations in our investigation and more than twice India's yearly outflows within the same year. The incongruities are indeed more articulated when we compare the poorest decile. A person within the foot 10 per cent of Saudi Arabia, the US, or Australia emanates 10 to 15 times more CO2 than a person within the poorest decile of India.

The contrast within the CO2 impression between the beat and foot wage deciles ranges between 8 and 22 times for the chosen nations. In nations such as China, Mexico, and the ASEAN region, a person within the best 10 per cent transmits generally 17 to 21 times more CO2 compared to a person within the foot 10 per cent of the same nation. On the other hand, in nations such as Australia, Japan, 1 Created nation alluded within the content incorporate Australia, Canada, the European Union (EU), Japan, the Russian League, Saudi Arabia, Turkey, the Joined together Kingdom, and the Joined together States. and Argentina, the distinction is between 9 to 12 times. These contrasts are demonstrative of the basic financial contrasts that exist.

Whereas people radiated less CO2 per USD 1000 earned in 2018 compared to 2008, the advance isn't uniform over nations and ranges between 4 per cent to 40 per cent. As it were Turkey, Russia, and Brazil saw an increment within the emanation concentrated of pay earned of roughly 5 to 5.5 per cent. In spite of the fact that emanations per USD 1000 of wage earned diminished between 2008 and 2018, in general emanations expanded due to the critical rise in wage levels.

The top 10 per cent earners in any country emit approximately three to five times more CO2 per capita than the national average. Encouraging the adoption of low-carbon lifestyles among this group can lead to significant annual reductions in CO2 emissions. Even if they reduced their per capita emissions by 50 per cent, they would still be emitting 1.5 to 2.5 times more than the national average.

SUMMARY OF OUR FINDINGS

One of the biggest problems of our day is climate change, which has effects that go well beyond environmental issues. Comprehending the allocation of carbon emissions among various income brackets and geographical areas is imperative in formulating efficacious mitigation tactics and advancing fairness in the worldwide reaction to climate change. In order to shed light on the intricate dynamics underlying global emissions patterns, this study looks at the differences in carbon emissions both within and between income groups.

1.Global Disparities in Carbon Emissions:

Analysis of carbon emissions data reveals striking disparities between high-income and low income countries. High-income countries exhibit significantly higher per capita

emissions compared to low-income countries, with emissions in the former exceeding those in the latter by more than 30 times. Despite accounting for less than half of the world's population, high and upper-middle-income countries contribute disproportionately to global CO2 emissions, highlighting substantial inequalities in emissions distribution.

[Reference: World Bank Data]

2.Regional Variations:

While Asia's overall emissions align closely with its population share, significant variations exist within the region. China emerges as a major emitter, surpassing the global average in per capita emissions, while India maintains relatively lower emission intensity. In contrast, Europe, North America, and Oceania exhibit emission levels that exceed their proportional population shares, underscoring disparities in emissions within and between regions.

[Reference: Global Carbon Atlas]

3.Adjustments for Trade:

Consideration of emissions embodied in traded goods further elucidates global emission patterns. High-income countries, collectively accounting for over 80% of global emissions, demonstrate slight increases in emissions intensity when trade adjustments are factored in. This trend reflects the intricate interdependencies of global trade networks, with emissions from upper-middle-income countries declining marginally due to shifts in consumption patterns.

[Reference: International Energy Agency]

4.India's Role:

Despite being the world's third-largest emitter of greenhouse gases, India maintains per capita emissions below the global average. A combination of factors, including a youthful demographic profile and investments in renewable energy infrastructure, contribute to India's relatively low emission intensity. However, rapid urbanization and increasing energy demand pose challenges to India's emission reduction efforts, necessitating sustainable development strategies.

[Reference: Carbon Brief]

5.Income Disparities within Nations:

Examination of emissions across income deciles within nations underscores profound disparities in emissions intensity. High-income earners consistently exhibit significantly higher per capita emissions compared to the national average, with emissions disparities ranging from three to five times higher. Encouraging the adoption of low-carbon lifestyles among high-income groups presents an opportunity for substantial emissions reductions within nations.

[Reference: Carbon Majors Database]

6.Trends over Time:

Analysis of emission trends over the past decade reveals divergent trajectories across countries. While emissions per unit of income declined in some countries between 2008 and 2018, overall emissions increased due to rising income levels. Countries such as Turkey, Russia, and Brazil experienced slight increases in emission intensity, highlighting the need for targeted interventions to decouple economic growth from carbon emissions.

[Reference: Global Carbon Project]

CONCLUSION

The findings of this research underscore the multifaceted nature of global emissions disparities and the importance of addressing inequities in the distribution of carbon emissions. Effective climate mitigation strategies must consider the complex interplay between income, consumption patterns, and emissions intensity, with a focus on promoting sustainable development pathways that prioritize equity and environmental stewardship. Addressing disparities within and between nations is essential for achieving global climate goals and fostering a more just and sustainable future for all.

The concept of sustainable living encompasses a range of practices and conscious decisions aimed at reducing environmental impact. This includes actions like installing energy-efficient appliances in both residential and commercial settings, powering off devices when not in use, adjusting air conditioner settings for optimal energy use, and maximizing natural daylight to reduce reliance on artificial lighting. Additionally, adopting behaviors such as utilizing public transportation and carpooling can significantly decrease emissions associated with personal travel, while supporting carbon offset programs can help mitigate unavoidable emissions.

Moreover, transitioning to low-carbon products and technologies plays a crucial role in driving

demand for sustainable alternatives, thereby incentivizing businesses to innovate and provide more eco-friendly options. This shift towards a net-zero carbon economy is essential for mitigating climate change and promoting environmental sustainability on a global scale.

The adoption of these sustainable practices aligns closely with initiatives like India's Lifestyle for Environment (LiFE) mission, which promotes responsible consumption practices that harmonize with nature. In this context, it is imperative for high-income earners, particularly in developed nations, to take swift action in ensuring climate justice and embracing low carbon lifestyles. By doing so, they can contribute to a fair and sustainable future for all.

References

https://publications.gc.ca/site/eng/9.880725/publication.html

https://unctad.org/news/carbon-emissions-anywhere-threaten-development-everywhere

www.bsc.es/news/bsc-news/bsc-participate-ipcc-sixth-assessment-report-climate-change

www.cambridge.org/core/books/climate-justice-and-disaster-law/climate-science-at-the interface-with-law-and-policymaking/61574D8F8F320DA91FBD570D3B3DB815

www.farmersjournal.ie/climate-change-the-driver-of-future-forestry-policy-643800

https://cast.ac.uk/material-consumption/

www.researchgate.net/publication/345126377_Downscaling_consumption_to_universal_basic_income_level_falls_short_of_sustainable_carbon_footprint_in_Finland

https://unctad.org/topic/least-developed-countries/chart-october-2021

https://iopscience.iop.org/article/10.1088/1755-1315/19/1/012008/pdf

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7651240/

https://www.theguardian.com/environment/2023/jan/31/emissions-divide-now-greater within-countries-than-between-them-study

https://www.cgdev.org/media/developing-countries-are-responsible-63-percent-current carbon-emissions

https://www.frontiersin.org/articles/10.3389/fenvs.2023.1271457/abstract

https://www.brookings.edu/articles/developing-countries-are-key-to-climate-action/

https://www.nature.com/articles/s41467-023-39449-7

https://www.mdpi.com/2071-1050/12/17/6810

https://onlinelibrary.wiley.com/doi/full/10.1002/sd.2380

https://www.ceew.in/publications/per-capita-co2-emissions-and-carbon-footprint-inequities across-countries-and-income

classes#:~:text=The%20per%20capita%20CO2%20footprint,their%20counterparts%20in%20developing%20nations.

https://unctad.org/news/carbon-emissions-anywhere-threaten-development-everywhere

Sources

1	https://www.frontiersin.org/articles/10.3389/fenvs.2023.1271457/full INTERNET 4%
2	https://www.nature.com/articles/s41467-023-39449-7 INTERNET 2%
3	www.researchgate.net/publication/359596426_Data_Collec... INTERNET 2%
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10	https://www.frontiersin.org/articles/10.3389/fenvs.2022.1039705 INTERNET 1%
11	www.nature.com/articles/s41893-022-00955-z INTERNET 1%
12	https://www.britannica.com/science/carbon-footprint INTERNET 1%
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14	https://www.carbonbrief.org/the-carbon-brief-profile-india INTERNET 1%

15	https://iopscience.iop.org/article/10.1088/1748-9326/aaeea7 INTERNET 1%
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21	www.worldbank.org/en/news/press-release/2022/11/01/s... INTERNET <1%
22	www.epa.gov/climatechange-science/causes-climate-chan... INTERNET <1%
23	https://www.ceew.in/publications/per-capita-co2-emissions-and-carb... INTERNET <1%
24	https://ourworldindata.org/consumption-based-co2 INTERNET <1%
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