# **Unearthing the Environmental Impact of CO<sub>2</sub> Emissions: Global CO<sub>2</sub> Emission Analysis Using Tableau**

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#### 1. INTRODUCTION:

### 1.1 Overview of project.

Global warming is one of the biggest challenges currently being faced by the human race, although correlation is not causation, a likely cause of global warming is due to increased atmospheric carbon dioxide from human activities. CO<sub>2</sub> Emission refers to the Carbon Dioxide emitted throughout the world. For this analysis we will be focusing on CO<sub>2</sub> Emissions and its effect on the world we live in as well as some key factors and stats that may play a role in the emission of CO<sub>2</sub> globally. Fossil fuel use is the primary source of CO<sub>2</sub>. The data throws light onto how much fossil fuels are burnt, per year per nation, which amounts to an increase in CO<sub>2</sub> every year. This will help researchers and environment experts to predict global warming. So countries should set a goal to decrease this amount yearly. Analyzing Global CO<sub>2</sub> Emission across countries from 1975 to 2020. This data set contains a record of CO<sub>2</sub> Emission by each Country and Region of Earth, here we are going to analysis and visualize Country wise, Region wise and Overall CO<sub>2</sub> Emission on Earth.

Carbon dioxide emissions or CO<sub>2</sub> emissions are emissions stemming from the burning of fossil fuels and the manufacture of cement; they include carbon dioxide produced during consumption of solid, liquid, and gas fuels as well as gas flaring. Most CO<sub>2</sub> emissions are from the use of fossil fuels,

especially for generation of electricity and heat, transportation, and manufacturing and consumption. Land use, land-use change and forestry is another contributor to human-made CO<sub>2</sub> emissions, mostly due to deforestation. As the top and most urgent priority, we have to slash carbon dioxide emissions which are the main driver of climate change and associated extreme weather, and which will affect climate for thousands of years through polar ice loss, ocean warming and sea level rise," Human activities such as the burning of oil, coal and gas, as well as deforestation are the primary cause of the increased carbon dioxide concentrations in the atmosphere. CO<sub>2</sub> emissions are predominant greenhouse gas however are not considered as air pollutants. However, promiscuous combustion of fossil fuels and depletion of forest can accelerate the liberation of CO2 in atmosphere. Anthropogenic emissions of GHG, including CO<sub>2</sub> campaigns increase in surface temperature (average 0.8°C since pre industrial tenure), acidification of ocean. These aforementioned anthropogenic events alter marine eco-bio-geo-chemical scenario including imbalance in acid-base, allocation of energy metabolism and microbial in activeness concerning aquaculture production, shellfish fisheries, etc. CO2 emissions can also hamper plant microbe interaction and influence the quality of groundwater. It directly or indirect affects the community health system. It can also change the plant and microbial parameters. Along with CO<sub>2</sub> emissions, GHG emission damage the natural flora and biodiversity that require special attention to conserve natural resources as per the United Nations-Korea protocol. Moreover, elevated quantity of CO<sub>2</sub> depicts ill-impact on freshwater and ocean algal bloom ecosis.

CO<sub>2</sub> emission, global warming and its resultant effect (climate change) are serious environmental problems that need urgent scientific attention, thereby calling for a reduction in CO<sub>2</sub> emissions in all sectors of human activity, including power generation. Furthermore, the literature reviewed in this study shows that researchers have put in tremendous efforts to reduce the emission of anthropogenic CO<sub>2</sub> into the atmosphere. The available CO<sub>2</sub> capture techniques are highly energy and material

intensive in nature, which makes  $CO_2$  capture an expensive technology to implement in many countries.

#### 1.2 Purpose of analyzing CO2 emission:

Carbon dioxide emissions are the primary driver of global climate change. It's widely recognized that to avoid the worst impacts of climate change, the world needs to urgently reduce emissions. By conducting an analysis the countries can identify areas for improvement and take steps to reduce factors that are responsible for Co2Emission for environmental sustainability by improving the efficiency and transitioning to low carbon alternatives. Measurements of emissions can be used to understand the relative importance of a given source compared to other sources and in developing emissions inventories.

#### Analyzing CO<sub>2</sub> emissions is important for several reasons:

- 1. Climate change: CO<sub>2</sub> is a greenhouse gas that contributes to global warming and climate change. By analyzing CO<sub>2</sub> emissions, we can identify the sources of emissions and take action to reduce them, which is essential for mitigating the impacts of climate change.
- 2. Environmental impact: CO<sub>2</sub> emissions can also have other environmental impacts, such as ocean acidification, which can harm marine life and ecosystems. By analyzing CO<sub>2</sub> emissions, we can identify the sources of emissions and take action to reduce them, which is essential for protecting the environment.
- 3. Energy efficiency: Analyzing CO<sub>2</sub> emissions can help identify areas where energy efficiency improvements can be made. By reducing energy consumption and using renewable energy sources, we can reduce CO<sub>2</sub> emissions and help mitigate the impacts of climate change.
- 4. Policy development: Analyzing CO<sub>2</sub> emissions is important for the development of policies and regulations aimed at reducing emissions. By understanding the sources of emissions and

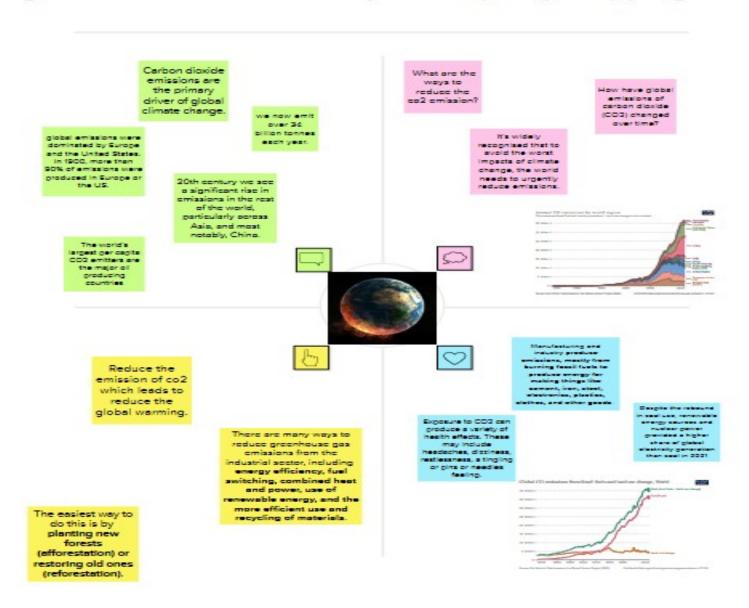
the sectors that contribute the most, policymakers can develop effective strategies for reducing emissions and promoting sustainable development.

The purpose of analyzing CO<sub>2</sub> emissions is to understand and quantify the amount of carbon dioxide that is being released into the atmosphere by human activities. Carbon dioxide is a greenhouse gas, which means that it can trap heat in the atmosphere and contribute to global warming and climate change. By analyzing CO<sub>2</sub> emissions, scientists, policymakers, and individuals can assess the impact of different activities on the environment and take steps to reduce emissions in order to mitigate the effects of climate change.

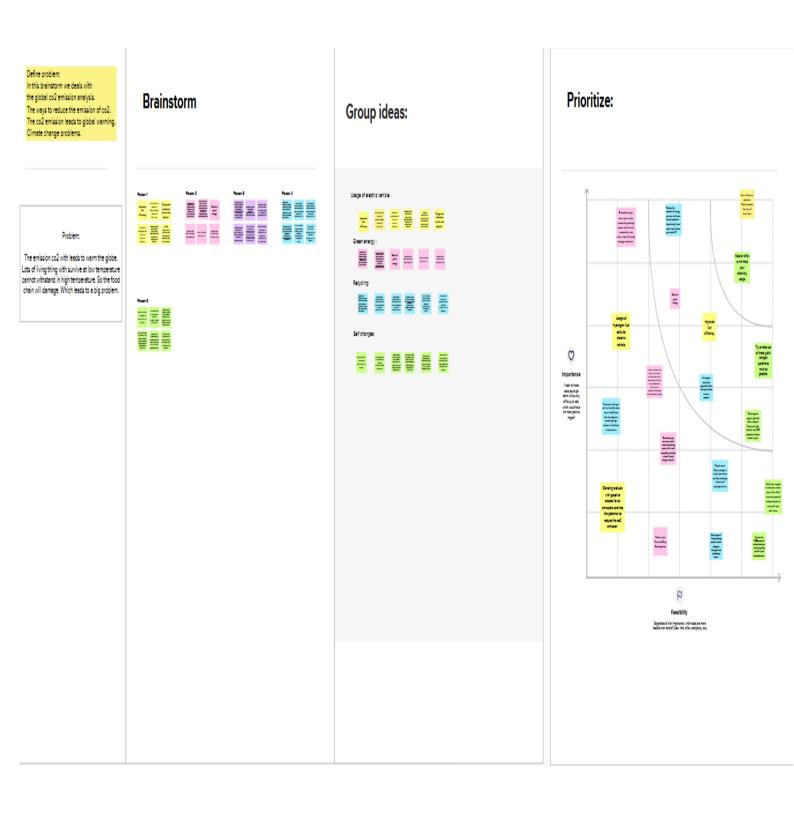
#### 2. Problem Definition and Design Thinking

#### 2.1 Empathy mapping

## A global co2 emission analysis -Empathy mapping



## 2.2Ideation and Brainstorming map

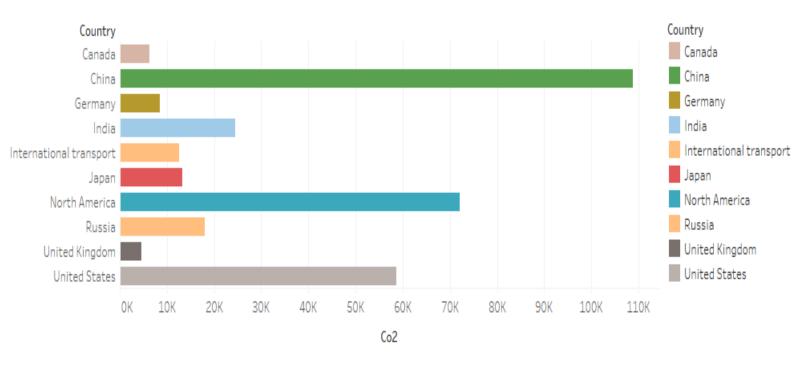


#### 3.RESULT:

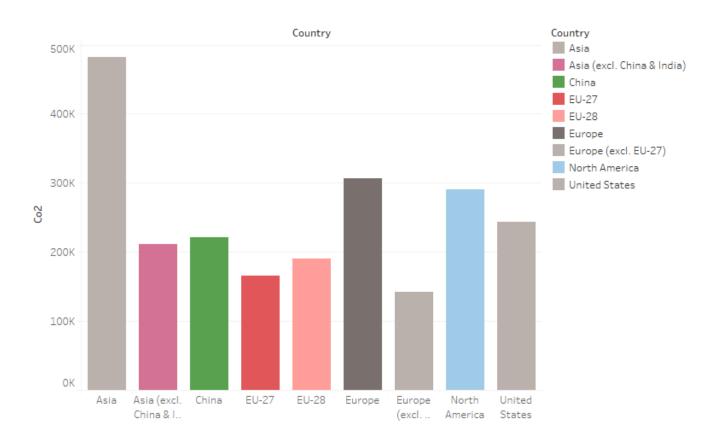
#### 3.1 Visualizations.

- 1. Top 10 country CO<sub>2</sub> Emissions.
- 2. Bar chart representation of top 10 CO<sub>2</sub> emissions by continents.
- 3. Pie chart of top 10 CO<sub>2</sub> emissions by continents.
- 4. This graph shows the CO<sub>2</sub> emission from 1975 to 2020 based on internal factors.
- 5. CO<sub>2</sub> Emission over years of China and India comparison.
- 6. Total CO<sub>2</sub> Emission over time.
- 7. Total World CO<sub>2</sub> Emission.
- 8. Total CO<sub>2</sub> Emission over Time.
- 9. Overall Contribution of India on CO<sub>2</sub> Emission.
- 10. India and Singapore comparison on CO<sub>2</sub> Emission by internal factors.
- 11. Top 10 country CO<sub>2</sub> Emission.
- 12. CO<sub>2</sub> Emission in 2003.
- 13. Comparison of Oil CO<sub>2</sub> and Cumulative CO<sub>2</sub> Emissions.

## 1. Top 10 country CO<sub>2</sub> Emissions

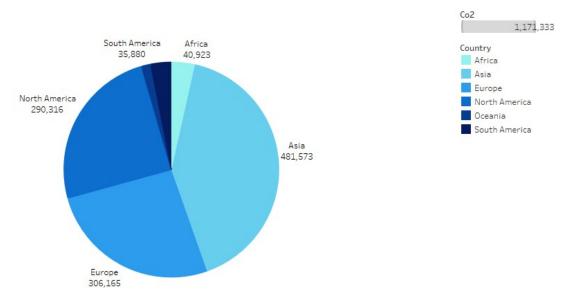


## 2. Bar chart representation of top 10 CO<sub>2</sub> emissions by continents.



## 3. Pie chart of top 10 CO<sub>2</sub> emissions by continents.

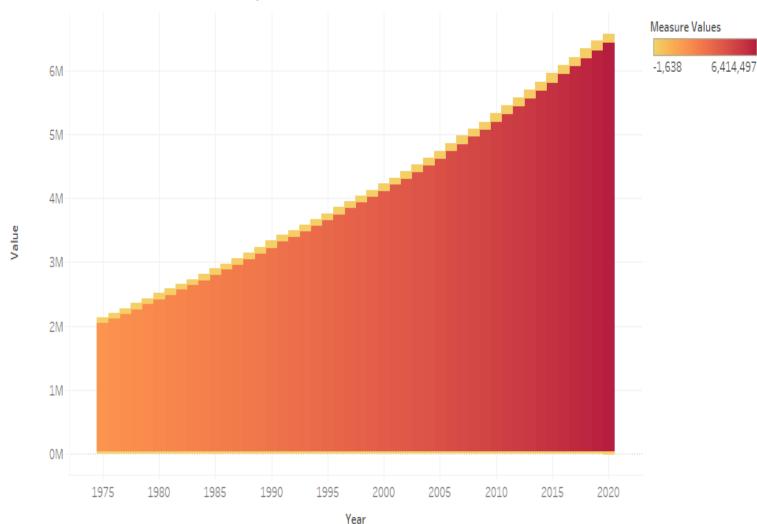
#### Total emission by continents



Country and sum of Co2. Color shows details about Country. Size shows sum of Co2. The marks are labeled by Country and sum of Co2. The view is filtered on Country, which keeps 6 of 244 members.

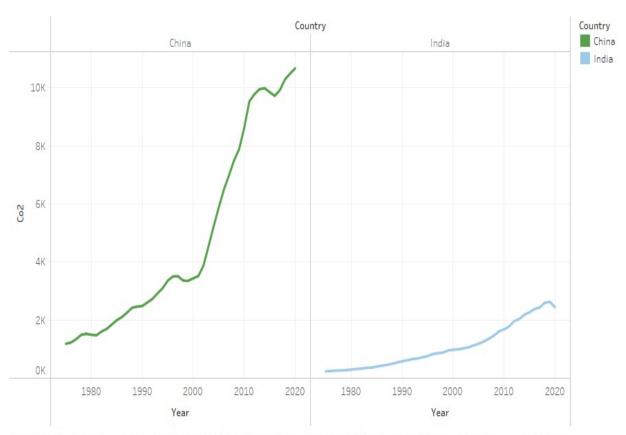
## 4. This graph shows the CO<sub>2</sub> emission from 1975 to 2020 based on internal factors.

## co2 emission from 1975 to 2020 by internal factors



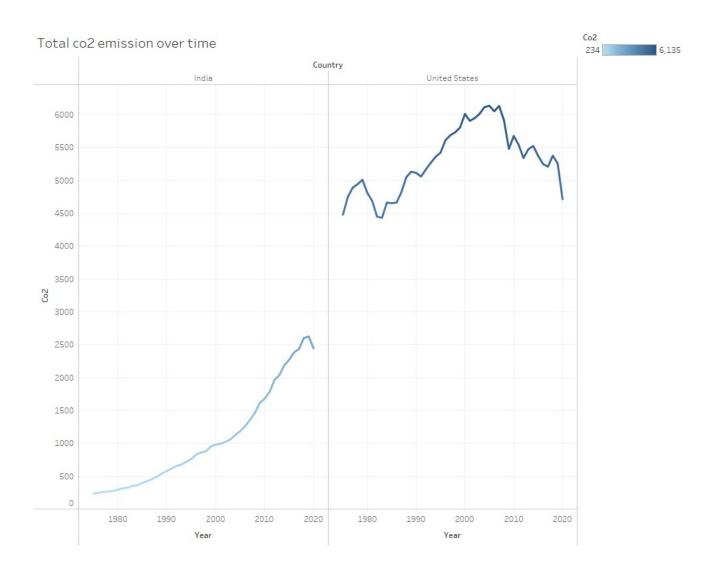
The plots of Co<sub>2</sub>, Co<sub>2</sub> Growth Prct, Cumulative Co<sub>2</sub>, Oil Co<sub>2</sub> and count of co<sub>2</sub> for Year. Color shows Co<sub>2</sub>, Co<sub>2</sub> Growth Prct, Cumulative Co<sub>2</sub>, Oil Co<sub>2</sub> and count of co<sub>2</sub>. The marks are labeled by Co<sub>2</sub>, Co<sub>2</sub> Growth Prct, Cumulative Co<sub>2</sub>, Oil Co<sub>2</sub> and count of co<sub>2</sub>. Details are shown for Co<sub>2</sub>, Co<sub>2</sub> Growth Prct, Cumulative Co<sub>2</sub>, Oil Co<sub>2</sub> and count of co<sub>2</sub>. The view is filtered on Year, which ranges from 1975 to 2020.

## 5. CO<sub>2</sub> Emisssion over years of China and India comparison.



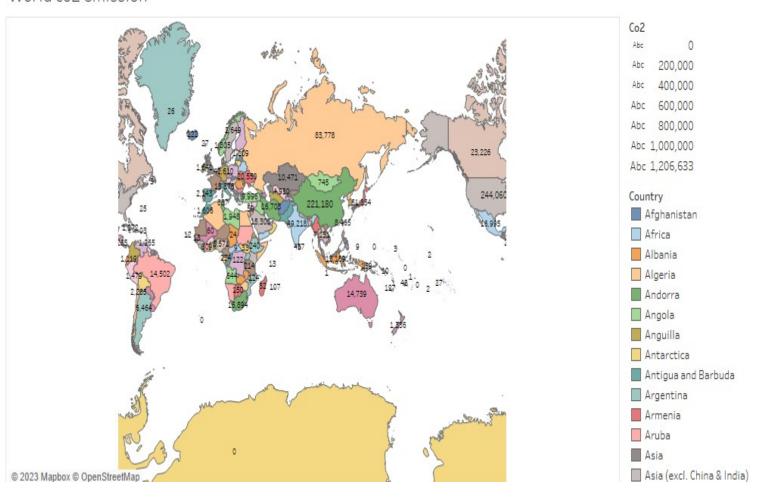
The trend of sum of Co2 for Year broken down by Country. Color shows details about Country. The view is filtered on Country, which keeps China and India.

## 6. Total CO<sub>2</sub> Emission over time.



## 7. Total World CO<sub>2</sub> Emission.

## World co2 emission



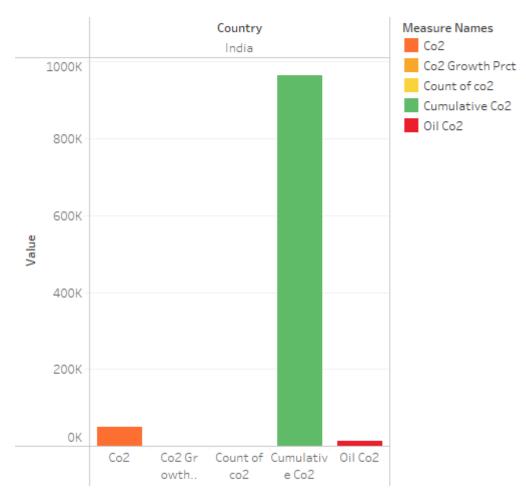
## 8. Total CO<sub>2</sub> Emission over Time.

#### Total co2 emission over time



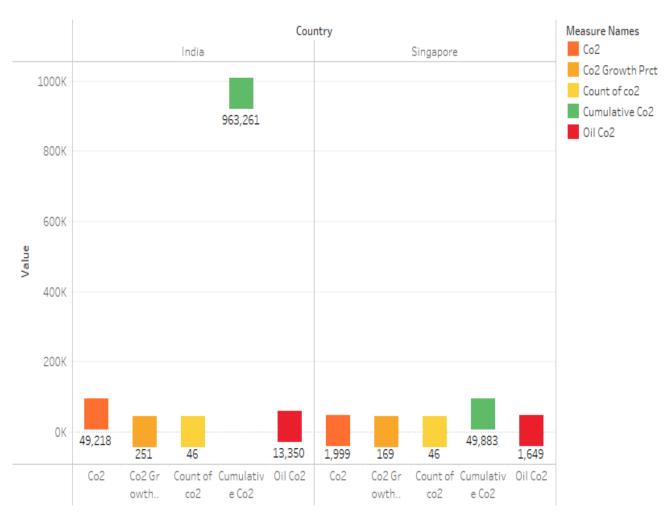
The trend of sum of Co2 for Year. Color shows sum of Co2.

#### 9. Overall Contribution of India on CO<sub>2</sub> Emission.



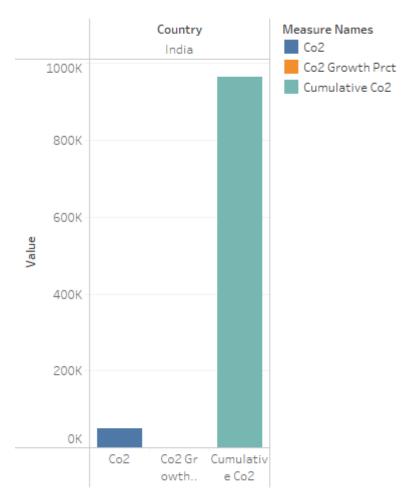
Co2, Co2 Growth Prct, Cumulative Co2, Oil Co2 and count of co2 for each Country. Color shows details about Co2, Co2 Growth Prct, Cumulative Co2, Oil Co2 and count of co2. Details are shown for Co2, Co2 Growth Prct, Cumulative Co2, Oil Co2 and count of co2. The view is filtered on Country, which keeps India.

## 10. India and Singapore comparison on CO<sub>2</sub> Emission by internal factors.



Co2, Co2 Growth Prct, Cumulative Co2, Oil Co2 and count of co2 for each Country. Color shows details about Co2, Co2 Growth Prct, Cumulative Co2, Oil Co2 and count of co2. The view is filtered on Country, which keeps India and Singapore.

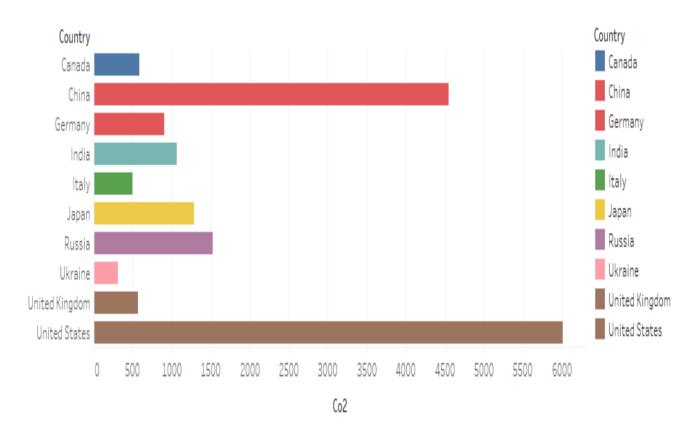
## 11. Top 10 country CO<sub>2</sub> Emission .



Co2, Co2 Growth Prct and Cumulative Co2 for each Country. Color shows details about Co2, Co2 Growth Prct and Cumulative Co2. The view is filtered on Country, which keeps India.

## 12. CO<sub>2</sub> Emission in 2003.

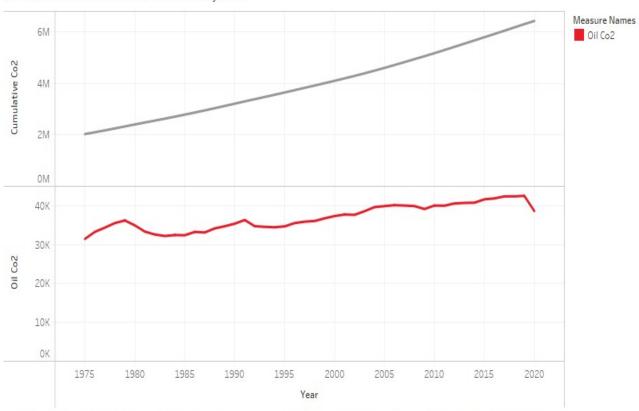
## co2 emission in 2003



 $Sum of Co2 for each Country. \ Color shows \ details \ about \ Country. \ The \ data \ is \ filtered \ on \ Year, \ which \ ranges \ from \ 2003 \ to \ 2003. \ The \ view \ is \ filtered \ on \ Country, \ which \ keeps \ 10 \ of \ 244 \ members.$ 

## 13. Comparison of Oil CO<sub>2</sub> and Cumulative CO<sub>2</sub> Emissions.

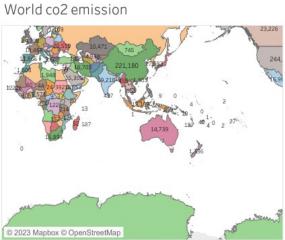
## oil co2 and cumulative co2 over years



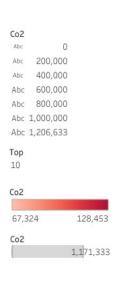
The trends of sum of Cumulative Co2 and Oil Co2 for Year. For pane Sum of Oil Co2: Color shows details about Oil Co2. The view is filtered on Year, which ranges from 1975 to 2020.

#### 3.2 Dashboards:

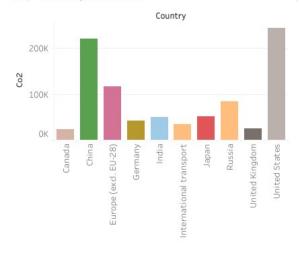
#### Dashboard -1



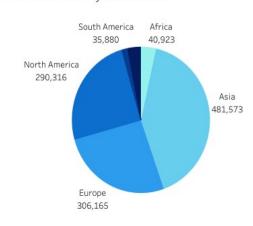




Top country emission

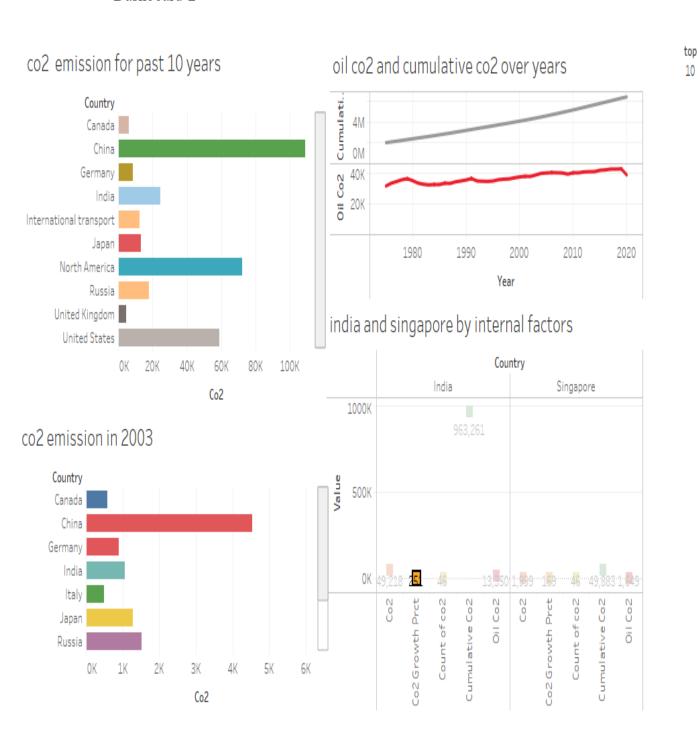


Total emission by continents



next

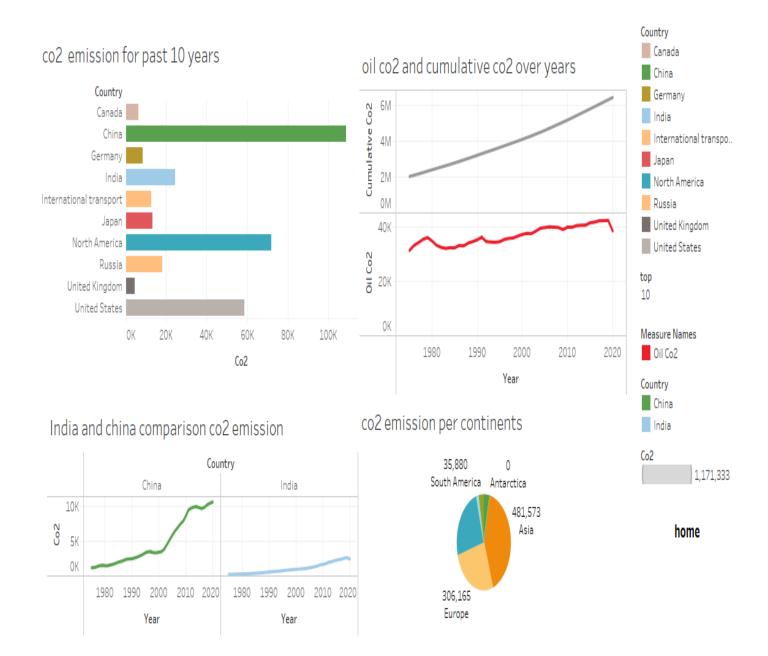
#### Dashboard-2



last

10

#### Dashboard -3



## 3.3 Story

## Story 1



#### 4. ADVANTAGES AND DISADVANTAGES.

#### 4.1 Advantages

There are several advantages to analyzing CO<sub>2</sub> emissions:

- Identifying sources of emissions: By analyzing CO<sub>2</sub> emissions, we can identify the sources
  of emissions and prioritize actions to reduce emissions from the most significant sources.
  This helps in developing strategies for reducing emissions and mitigating climate change.
- 2. Setting targets and tracking progress: Analyzing CO<sub>2</sub> emissions helps in setting emissions reduction targets and tracking progress towards achieving those targets. This enables policymakers, organizations, and individuals to make informed decisions and take necessary actions to reduce emissions.
- 3. Raising awareness: Analyzing CO<sub>2</sub> emissions helps to raise awareness of the importance of reducing emissions and the impact of climate change. This can lead to increased public support for policies and initiatives aimed at reducing emissions.
- 4. Evaluating the effectiveness of policies: Analyzing CO<sub>2</sub> emissions helps in evaluating the effectiveness of policies and measures implemented to reduce emissions. This can help policymakers to make adjustments and improve the effectiveness of their policies.
- 5. Improving energy efficiency: Analyzing CO<sub>2</sub> emissions can identify opportunities to improve energy efficiency, which can lead to cost savings for individuals and organizations, as well as reduced emissions.

Overall, analyzing CO<sub>2</sub> emissions is an important step in addressing climate change and mitigating its impact on the environment and society.

#### 4.2 Disadvantages

There are several disadvantages associated with CO<sub>2</sub> emissions:

- 1. Climate change: CO<sub>2</sub> emissions are a major contributor to climate change, which has farreaching negative impacts on the environment and society, including rising sea levels, more frequent and severe natural disasters, and reduced crop yields.
- 2. Health impacts: CO<sub>2</sub> emissions can have negative impacts on human health, including respiratory illnesses and other health problems related to air pollution.
- 3. Economic costs: The impacts of climate change associated with CO<sub>2</sub> emissions can have significant economic costs, including damages to infrastructure, increased healthcare costs, and lost productivity.
- 4. Social inequality: The impacts of climate change associated with CO<sub>2</sub> emissions are often disproportionately borne by vulnerable populations, including low-income communities and indigenous peoples.
- 5. Energy security: Fossil fuels, which are a major source of CO<sub>2</sub>emissions, are a finite resource, and their use for energy production can lead to energy insecurity and supply disruptions.

Overall, the disadvantages of CO<sub>2</sub> emissions are significant and demonstrate the need for urgent action to reduce emissions and mitigate the impacts of climate change.

#### **5.APPLICATIONS:**

The analysis of CO<sub>2</sub> emissions has several applications, including:

- Climate policy development: CO<sub>2</sub>emissions analysis is used to develop climate policies and strategies at the national, regional, and global levels. This includes setting targets for emissions reductions, implementing emissions trading systems, and designing regulations to reduce emissions from different sectors.
- 2. Corporate sustainability: Companies use CO<sub>2</sub> emissions analysis to track their greenhouse gas emissions and develop sustainability plans to reduce their environmental impact. This includes implementing energy efficiency measures, investing in renewable energy, and using sustainable materials in their operations.
- 3. Carbon footprint calculation: CO<sub>2</sub> emissions analysis is used to calculate the carbon footprint of products, services, and organizations. This information is used to make informed decisions about reducing emissions and to communicate with stakeholders about sustainability efforts.
- 4. Environmental impact assessment: CO<sub>2</sub> emissions analysis is used to assess the potential environmental impact of development projects such as infrastructure, transportation, and energy production. This information is used to make informed decisions about the viability and sustainability of these projects.
- 5. Research and development: CO<sub>2</sub> emissions analysis is used in research and development to identify opportunities for emissions reduction and to develop new technologies that can reduce emissions from different sectors.

Overall, CO<sub>2</sub> emissions analysis is a critical tool for understanding the sources and impacts of greenhouse gas emissions and for developing strategies to reduce emissions and mitigate the impacts of climate change.

#### **6. CONCLUSIONS:**

In conclusion, CO<sub>2</sub> emissions analysis is a critical tool for understanding the sources and impacts of greenhouse gas emissions. The analysis provides valuable information for developing policies and strategies to reduce emissions and mitigate the impacts of climate change. The applications of CO<sub>2</sub> emissions analysis are vast and include climate policy development, corporate sustainability, carbon footprint calculation, environmental impact assessment, and research and development. However, the disadvantages associated with CO<sub>2</sub> emissions, such as climate change, health impacts, economic costs, social inequality, and energy security, demonstrate the urgent need for action to reduce emissions and mitigate the impacts of climate change. Therefore, it is crucial for governments, businesses, and individuals to take immediate action to reduce their emissions and promote sustainable practices to ensure a sustainable future for our planet and society.

#### 7. FUTURE SCOPE:

There are several enhancements that can be made in the future for CO<sub>2</sub> emission analysis. Some of them are:

- Improved data collection: Accurate and comprehensive data is essential for effective CO<sub>2</sub>
  emission analysis. Future enhancements can focus on improving data collection and
  reporting processes to provide more reliable and consistent data for analysis.
- 2. Advanced technologies: Advancements in technologies, such as remote sensing, satellite imagery, and machine learning, can improve the accuracy and efficiency of CO<sub>2</sub> emission analysis.
- 3. More comprehensive analysis: Future CO<sub>2</sub> emission analysis can be more comprehensive by considering other greenhouse gases, such as methane and nitrous oxide, which are also significant contributors to climate change.
- 4. Better integration: Integration of CO<sub>2</sub> emission analysis with other policy areas, such as energy policy and land-use planning, can lead to more effective and holistic solutions for reducing emissions.
- 5. Increased public participation: Future CO<sub>2</sub> emission analysis can involve more public participation and engagement, which can help raise awareness and understanding of the impacts of emissions and promote greater accountability for reducing emissions.

Overall, these enhancements can help to improve the accuracy and effectiveness of CO<sub>2</sub> emission analysis, which is critical for developing effective policies and strategies to reduce emissions and mitigate the impacts of climate change.

#### 8. APPENDIX:

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Source code -
<!DOCTYPE html>
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<meta content="width=device-width, initial-scale=1.0" name="viewport">
<title>CO2 EMISSION</title>
<meta content="" name="description">
<meta content="" name="keywords">
<!-- Favicons -->
<link href="assets/img/favicon.png" rel="icon">
link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
<!-- Google Fonts -->
link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|
Poppins:300,400,500,700" rel="stylesheet">
<!-- Vendor CSS Files -->
<link href="assets/vendor/aos/aos.css" rel="stylesheet">
link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
<link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
<link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
k href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
<!-- Template Main CSS File -->
<link href="assets/css/style.css" rel="stylesheet">
* Template Name: CO2 EMISSION
* Updated: Mar 10 2023 with Bootstrap v5.2.3
* Template URL: https://bootstrapmade.com/co2 emission-bootstrap-onepage-template/
```

```
* Author: BootstrapMade.com
* License: https://bootstrapmade.com/license/
</head>
<body>
<!-- ===== Header ===== -->
<header id="header" class="fixed-top d-flex align-items-center header-transparent">
<div class="container d-flex justify-content-between align-items-center">
<div id="logo">
<a href="index.html"><img src="assets/img/logo.png" alt=""></a>
<!-- Uncomment below if you prefer to use a text logo -->
<!--<h1><a href="index.html">CO2 EMISSION
</a></h1>-->
</div>
<nav id="navbar" class="navbar">
<ul>
<a class="nav-link scrollto active" href="#hero">Home</a>
<a class="nav-link scrollto" href="#portfolio">Dashboard</a>
<a class="nav-link scrollto" href="#team">Story</a>
</1i>
<a class="nav-link scrollto" href="#contact">Contact</a>
<i class="bi bi-list mobile-nav-toggle"></i>
</nav><!-- .navbar -->
</div>
</header><!-- End Header -->
<!-- ===== Hero Section ====== -->
<section id="hero">
<div class="hero-container" data-aos="zoom-in" data-aos-delay="100">
<h1>GLOBAL CO2 EMISSION ANALYSIS</h1>
<h2>Unearthing the Environmental impact of human activity</h2>
<a href="#about" class="btn-get-started">Get Started</a>
</div>
</section><!-- End Hero Section -->
```

```
<main id="main">
<!-- ==== About Section ===== -->
</div>
</section><!-- End About Section -->
<!-- ===== Facts Section ====== -->
<
</div>
</section><!-- End Call To A
</section><!-- End Services Section -->
<!-- ==== Call To Action Section ===== -->
<!-- ===== Portfolio Section ====== -->
<section id="portfolio" class="portfolio">
<div class="container" data-aos="fade-up">
<div class="section-header">
<h3 class="section-title">Dashboard</h3>

</div>
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href='#'><img alt='Dashboard 1 '
src='https://public.tableau.com/static/images/co/co2emissiondshboar
d/Dashboard1/1 rss.png' style='border: none' /></a></noscript><object class='tableauViz'
style='display:none;'><param name='host url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
<param name='embed code version' value='3' /> <param name='site root' value=" /><param</pre>
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name='display static image' value='yes' /><param name='display spinner' value='yes' /><param
name='display overlay' value='yes' /><param name='display count' value='yes' /><param
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scriptElement = document.createElement('script'); scriptElement.src =
'https://public.tableau.com/javascripts/api/viz v1.js';
vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>
```

```
</div>
</div>
</section><!-- End Portfolio Section -->
<!-- ===== Team Section ====== -->
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href='#'><img alt='Story 1 '
src='https://public.tableau.com/static/images/co/co2emissionstory&#
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style='display:none;'><param name='host url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
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value='https://public.tableau.com/static/images/co/co2emissionstory
/Story1/1.png' /> <param name='animate transition' value='yes' /><param
name='display static image' value='yes' /><param name='display spinner' value='yes' /><param
name='display overlay' value='yes' /><param name='display count' value='yes' /><param
name='language' value='en-US' /></object></div> <script type='text/javascript'> var divElement =
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scriptElement = document.createElement('script'); scriptElement.src =
'https://public.tableau.com/javascripts/api/viz v1.js';
vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>
</div>
</div>
</section><!-- End Team Section -->
<!-- ===== Contact Section ====== -->
<section id="contact">
<div class="container">
<div class="section-header">
<h3 class="section-title">Contact</h3>
</div>
</div>
```

```
<!-- Uncomment below if you wan to use dynamic maps -->
<div class="container mt-5">
<div class="row justify-content-center">
<div class="col-lg-3 col-md-4">
<div class="info">
<div>
</div>
<div>
<i class="bi bi-envelope"></i>
Sarumathiphy2003@gmail.com
</div>
< div >
</div>
</div>
</div>
<div class="col-lg-5 col-md-8">
<div class="form">
<form action="forms/contact.php" method="post" role="form" class="php-email-form">
<div class="form-group">
<input type="text" name="name" class="form-control" id="name" placeholder="Your Name"
required>
</div>
<div class="form-group mt-3">
<input type="email" class="form-control" name="email" id="email" placeholder="Your Email"
required>
</div>
<div class="form-group mt-3">
<input type="text" class="form-control" name="subject" id="subject" placeholder="Subject"
required>
</div>
<div class="form-group mt-3">
```

```
<textarea class="form-control" name="message" rows="5" placeholder="Message"
required></textarea>
</div>
<div class="my-3">
<div class="loading">Loading</div>
<div class="error-message"></div>
<div class="sent-message">Your message has been sent. Thank you!</div>
</div>
<div class="text-center"><button type="submit">Send Message</button></div>
</form>
</div>
</div>
</div>
</div>
</section><!-- End Contact Section -->
</main><!-- End #main -->
<!-- ===== Footer ===== -->
<footer id="footer">
<div class="footer-top">
<div class="container">
</div>
</div>
<div class="container">
<div class="copyright">
© Copyright <strong>CO2 EMISSION</strong>. All Rights Reserved
</div>
<div class="credits">
<!--
All the links in the footer should remain intact.
You can delete the links only if you purchased the pro version.
Licensing information: https://bootstrapmade.com/license/
Purchase the pro version with working PHP/AJAX contact form: https://bootstrapmade.com/buy/?
theme=CO2
-->
Designed by <a href="https://bootstrapmade.com/">BootstrapMade</a>
</div>
```

```
</div>
</footer><!-- End Footer -->
<a href="#" class="back-to-top d-flex align-items-center justify-content-center"><i class="bi bi-
arrow-up-short"></i></a>
<!-- Vendor JS Files -->
<script src="assets/vendor/purecounter/purecounter vanilla.js"></script>
<script src="assets/vendor/aos/aos.js"></script>
<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<script src="assets/vendor/glightbox/js/glightbox.min.js"></script>
<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
<script src="assets/vendor/swiper/swiper-bundle.min.js"></script>
<script src="assets/vendor/php-email-form/validate.js"></script>
<!-- Template Main JS File -->
<script src="assets/js/main.js"></script>
</body>
</html>
```