Smart Internz

# Project Report

**On**

# Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)

## 1 INTRODUCTION

### 1.1 Overview

The "Sustainable Development Report (SDR) 2023" stands as a comprehensive and timely examination of the world's progress toward achieving the Sustainable Development Goals (SDGs) set forth by the United Nations in 2015. This annual report serves as a vital instrument for assessing the trajectory of global sustainability efforts, offering a nuanced perspective on the successes, challenges, and critical junctures in the pursuit of a more sustainable and equitable world.

In the wake of the pivotal year 2015, when the Sustainable Development Goals (SDGs) were collectively embraced by 193 United Nations Member States, the global community embarked on an ambitious journey towards fostering a sustainable and equitable future for all. As we find ourselves at the halfway point to the targeted year 2030, the need for a comprehensive evaluation of progress and a strategic reinvigoration of efforts becomes increasingly apparent. The "Sustainable Development Report (SDR) 2023" emerges as a critical milestone in this ongoing pursuit, serving as an annual assessment tool to review and analyze advancements made in the pursuit of the SDGs.

This annual report not only reflects on the collective efforts of nations but also establishes a platform for in-depth discussions on priorities, challenges, and opportunities that lie ahead. As we approach the 2023 Paris Summit for a New Global Financial Pact, the timing of this edition is particularly significant. It not only offers a retrospective analysis of the progress achieved but also sets the stage for crucial deliberations on scaling up development finance and advocating for systemic reforms within the global financial architecture.

### 1.2 Purpose

The purpose of the "Sustainable Development Report (SDR) 2023" is rooted in its role as a pivotal instrument for evaluating, guiding, and catalyzing global efforts towards the attainment of the Sustainable Development Goals (SDGs). Through a meticulous and inclusive examination, this annual report serves several overarching purposes:

Annual Progress Assessment:

The SDR 2023 acts as an essential barometer, annually gauging the progress made by the international community in achieving the SDGs. By offering a comprehensive review of

global advancements, setbacks, and trends, the report provides stakeholders with a clear understanding of where the world stands in relation to the SDGs.

Informed Decision-Making:

One of the primary purposes of the report is to inform decision-makers at various levels – from national governments and international organizations to local communities. By presenting evidence-based insights and highlighting areas of success and challenge, the SDR equips policymakers with the information needed to make informed, targeted, and impactful decisions.

Identifying Priorities for Action:

Beyond assessment, the SDR 2023 serves as a guidepost for identifying priorities that demand immediate attention. By identifying areas where progress has been insufficient and challenges persist, the report sets the stage for focused and strategic actions aimed at restoring and accelerating progress towards the SDGs.

Global Dialogue Facilitation:

Positioned as a document of global significance, the report fosters a dynamic and inclusive dialogue among nations, international organizations, academia, and civil society. It provides a common ground for stakeholders to share insights, exchange best practices, and collectively chart a course for advancing sustainability on a global scale.

Contextualization with the 2023 Paris Summit:

As the report is published on the eve of the 2023 Paris Summit for a New Global Financial Pact, its purpose extends to contributing to the discussions that will unfold at this critical juncture. By focusing on the nexus between sustainable development and the need for a transformative approach to development finance, the report positions itself as a valuable resource for shaping global agendas.

Advocacy for Development Finance and Reforms:

The SDR 2023 uniquely advocates for the scaling up of development finance and calls for reforms in the global financial architecture. By emphasizing the pivotal role of financial systems in supporting the SDGs, the report actively contributes to advocacy efforts aimed at mobilizing resources and reshaping financial structures to align with sustainable development objectives.

Inspiration for Action:

Ultimately, the overarching purpose of the SDR 2023 is to inspire action. Through its analysis, insights, and recommendations, the report aims to motivate stakeholders to take

tangible steps, individually and collectively, to address global challenges and work towards a more sustainable and equitable future.

In summation, the purpose of the SDR 2023 is multifaceted, ranging from providing a comprehensive assessment of progress to serving as a catalyst for global dialogue and action.

# 1 LITERATURE SURVEY

## 2.1 Existing problem

Despite the collective global commitment to achieving the Sustainable Development Goals (SDGs), the path towards sustainable development is fraught with multifaceted challenges that necessitate careful consideration. The "Sustainable Development Report (SDR) 2023" aims to address and shed light on several existing problems that hinder progress:

Unequal Progress Across Goals and Regions: Disparities persist in the progress made toward different SDGs and across various regions. Some goals may be significantly advanced, while others lag behind, contributing to global inequalities and hindering the comprehensive achievement of sustainable development.

Data Gaps and Inconsistencies: The availability and quality of data required for comprehensive SDG assessment remain uneven across countries and regions. Data gaps and inconsistencies impede accurate monitoring and evaluation, limiting the ability to make informed decisions and allocate resources effectively.

Insufficient Financing for Sustainable Development: A critical challenge lies in the inadequacy of financial resources allocated to support SDG initiatives. Many countries, particularly those with limited resources, face challenges in mobilizing the necessary funds to implement sustainable development projects and programs.

Policy Implementation Gaps: Despite the formulation of policies aligned with the SDGs, gaps exist in the effective implementation and enforcement of these policies at the national and sub-national levels. Inconsistent policy execution undermines the potential impact on sustainable development outcomes.

Lack of Coordinated Global Action: The absence of a fully coordinated and cooperative global response hampers progress towards shared SDG objectives. Discrepancies in international cooperation, trade policies, and geopolitical considerations can hinder the collective efforts required for sustainable development.

## 2.2 Proposed solution

In addressing the complexities of global sustainability trends within the "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" project, leveraging IBM Cognos as a powerful business intelligence tool offers a robust and comprehensive solution. The proposed approach integrates various features of IBM Cognos to enhance data analysis, reporting, and visualization, ensuring a nuanced understanding of sustainability trends and facilitating informed decision-making. The proposed solution

encompasses the following key elements:

**Data Integration and Preparation:**

Utilize IBM Cognos to integrate diverse datasets related to global sustainability trends from the year 2000 to 2023. This includes data on environmental indicators, socio-economic factors, and progress towards SDGs. Employ Cognos Data Manager for efficient data preparation, cleaning, and transformation.

**Advanced Analytics and Trend Analysis:**
Leverage IBM Cognos Analytics for advanced analytics, including trend analysis, pattern recognition, and predictive modeling. Apply statistical algorithms and machine learning techniques to identify significant trends, correlations, and potential future developments within the sustainability landscape.

**Customized Dashboards for Visual Representation:**
Design customized dashboards using IBM Cognos Dashboard embedded within Cognos Analytics. Visualize sustainability trends through interactive and dynamic charts, graphs, and maps. Provide users with the flexibility to explore and interact with data, fostering a deeper understanding of global trends.

**Geospatial Visualization:**
Utilize IBM Cognos Analytics for geospatial visualization, mapping sustainability trends across different regions. Incorporate geospatial data to highlight regional variations and identify areas requiring targeted interventions. Enhance the understanding of how sustainability trends manifest geographically.

**Real-Time Reporting and Monitoring:**
Implement real-time reporting using IBM Cognos Reporting capabilities. Develop dynamic reports that provide up-to-date insights into global sustainability trends. Enable decision-makers to monitor progress continuously and respond promptly to emerging challenges or opportunities.

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**User Training and Adoption Programs:**
Conduct user training programs to ensure that stakeholders are proficient in leveraging IBM Cognos for sustainability trend analysis. Foster a culture of data-driven decision-making and empower users to extract actionable insights from the platform.
**Integration with External Data Sources:**
Enable seamless integration with external data sources, ensuring that IBM Cognos can draw insights from a diverse array of datasets. Integrate socio-economic, environmental, and global development indicators to provide a comprehensive understanding of sustainability trends.
By adopting this proposed solution, the project can harness the full potential of IBM Cognos to analyze, visualize, and understand global sustainability trends comprehensively. The integration of advanced analytics, real-time reporting, and geospatial visualization ensures that stakeholders are equipped with the insights needed

## 2 THEORITICAL ANALYSIS

### 3.1Block diagram

This block involves the aggregation and integration of data related to global trends from the years 2000 to 2023. Data sources may include environmental indicators, socio-economic metrics, and other relevant datasets.

The core component leveraging IBM Cognos for business intelligence and data analytics. This block includes various Cognos tools for data visualization, reporting, and analysis.

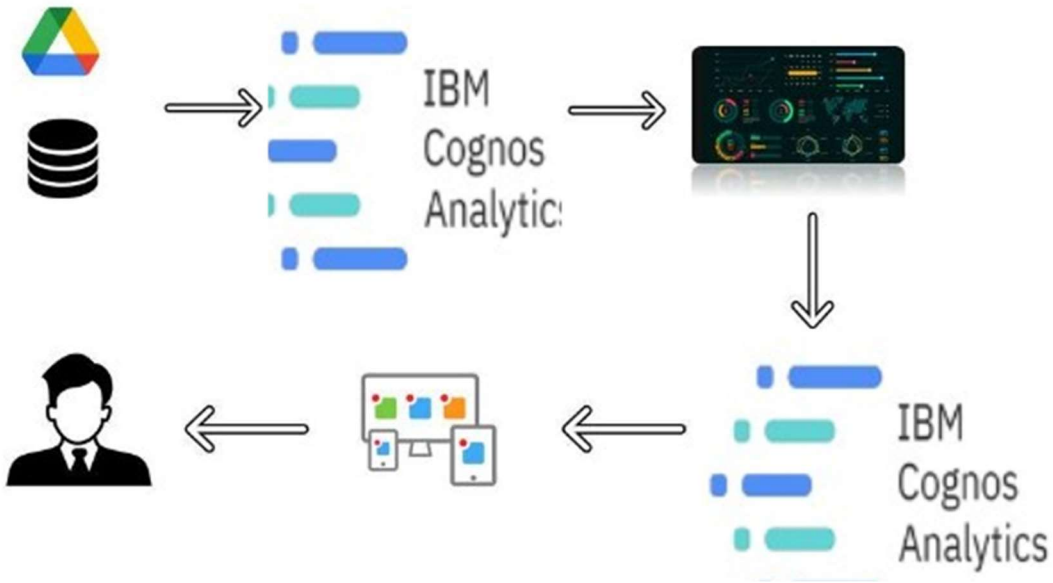



***Figure1. Block Diagram***

Dashboard Creation: This component involves the design and development of interactive dashboards within IBM Cognos. These dashboards provide a visual representation of global trends, allowing users to explore data dynamically.

Report: Incorporates statistical models and algorithms for trend analysis, identifying patterns, correlations, and predicting future trends based on historical data. A module within the project that facilitates real-time reporting, ensuring that decision-makers have access to the latest information on sustainability trends.

Story: This block involves utilizing IBM Cognos Planning Analytics or similar tools for scenario modeling and forecasting. It helps project potential outcomes based on different scenarios and interventions. Integrates financial analysis tools within the project, examining the allocation of resources for sustainable development initiatives and assessing the economic impact of various strategies.

### 3.1 Software designing

The software requirements for the "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" project would largely depend on the specific technologies, platforms, and tools chosen for implementation. Given the mention of IBM Cognos, here are some potential software requirements for the project:

IBM Cognos Analytics:
The core business intelligence and reporting platform from IBM, used for creating dashboards, reports, and visualizations.

## 3 EXPERIMENTAL INVESTIGATIONS

Potential experimental investigations that could be conducted as part of the "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" project:

“Life on Land”, offering a detailed view of sustainability and progress towards the related SDGs. This data AIDS researchers, policymakers, and environmental organisations in monetary and enhancing land ecosystem health and biodiversity. It place a crucial role global efforts to preserve terrestrial environments and achieve sustainable development goals

Life below Water”, a key component sustainable development goals (SDGs). it supports the evaluation of marine ecosystem health and responsible Ocean practices, aiding researchers and policy makers in Ocean conservation efforts. This data set is vital resource for global initiatives aimed at protecting and enhancing the sustainability of our oceans

“Quality Education” , a fundamental sustainability development goal. This data set is a valuable resource educational access, quality, and equality across countries. Researchers, policy makers, and educational institutions can utilise this data to monitor progress, identify area for improvement, and develop Strategies for enhancing global education standards. On focusing on "Quality Education", this data set plays a significant role in advance in the mission of ensuring inclusive, equitable, and quality education for all.

“Reduced Inequalities" , a key component of sustainable development goals (SDGs). A comprehensive view disparities and socio economic imbalance between countries, adding researchers and policy makers in the efforts to create more equitable societies worldwide. This data set plays a pivotal in promoting social justice and ensuring inclusive development.

## 4 FLOWCHART

Creating a comprehensive flowchart for a project as complex as "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" can be detailed and involve

numerous processes. Below is a simplified flowchart outline, considering the main stages and key components of the project:

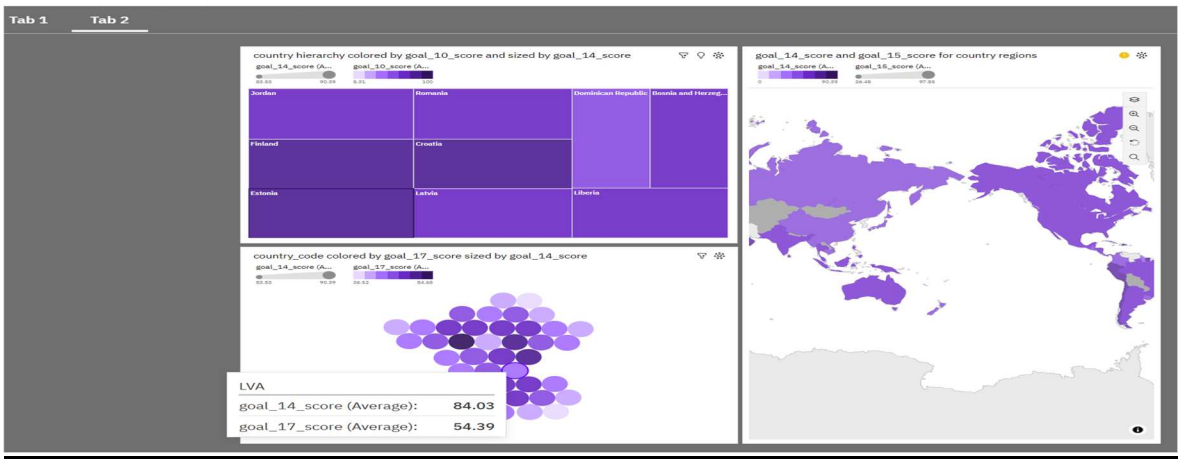
1. Start: Begin the flowchart with the starting point of the project.
2. Data Collection: Collect data related to global trends from various sources, including environmental indicators, socio-economic metrics, and relevant datasets.
3. Data Preparation: Use ETL tools (Extract, Transform, Load) to integrate and preprocess the collected data.
4. Data Visualization : Create separate visualizations and analyses for different Sustainable Development Goals (SDGs).
5. Dashboard Design:Design interactive dashboards within IBM Cognos for visualizing sustainability trends.
6. Story Creation : Apply statistical analysis tools to identify trends, patterns, and correlations in the data.
7. Report Generation:Generate reports based on the analysis and insights obtained from IBM Cognos.
8. Performance Testing: Conduct experimental investigations based on the outlined experiments (Impact Assessment, Geospatial Analysis, Predictive Modeling, User Interaction).
9. Web Integration : Integration of dashboards, story and report on web using flask.

Conclude the flowchart, representing the completion of the project.

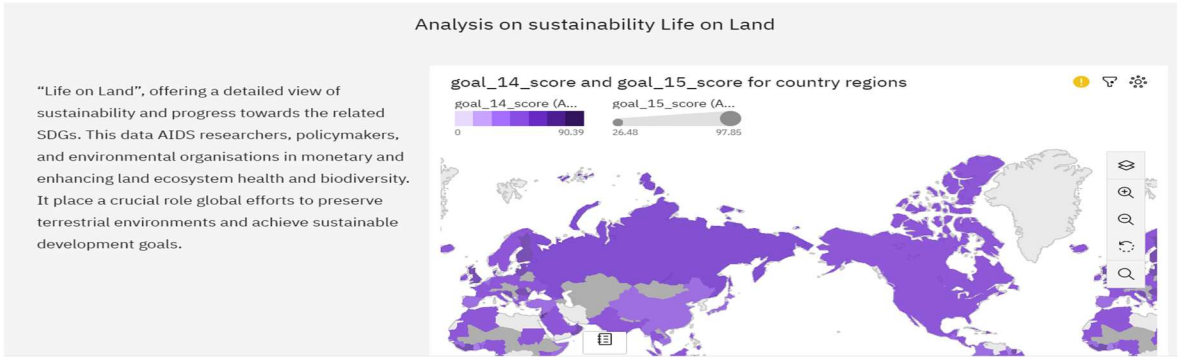
This flowchart provides a high-level overview of the project's main stages, starting from data collection to the generation of reports and communication of findings. The actual flowchart may need further detailing based on specific tasks, decision points, and feedback loops within each stage.

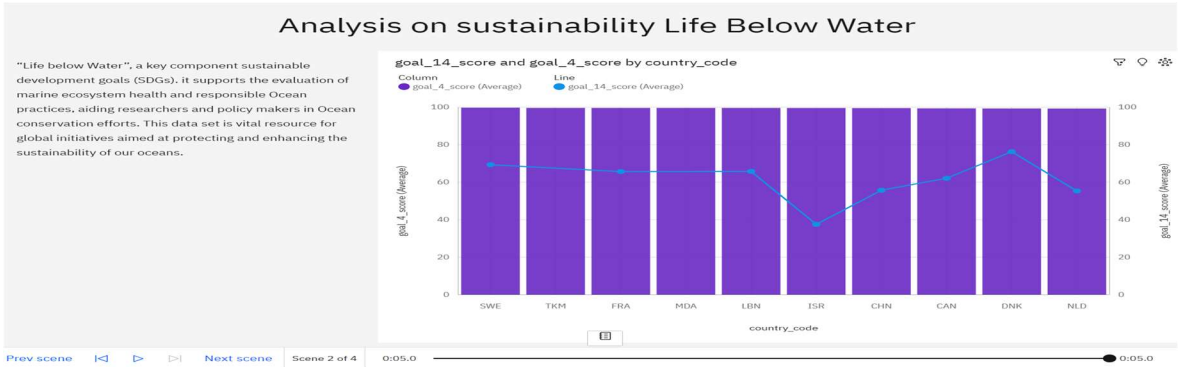
## 5 RESULT

## Dashboard


## Story



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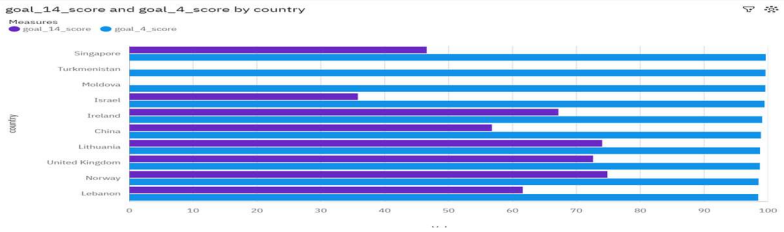
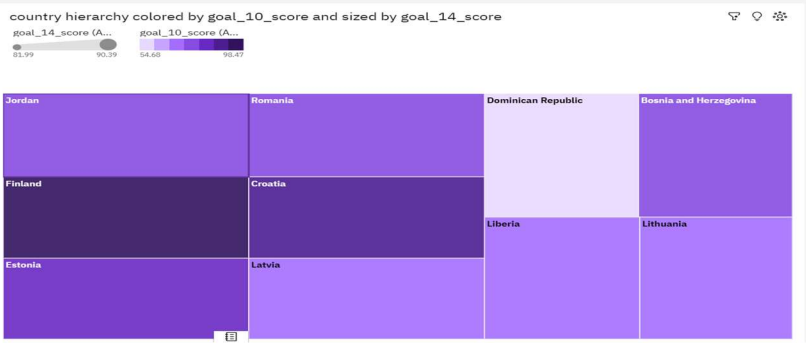
## Analysis on sustainability Quality Education

"Quality Education" , a fundamental sustainability development goal. This data set is a valuable resource educational access, quality, and equality across countries. Researchers, policy makers, and educational institutions can utilise this data to monitor progress, identify area for improvement, and develop Strategies for enhancing global education standards. On focusing on "Quality Education", this data set plays a significant role in advance in the mission of ensuring inclusive, equitable, and quality education for all.

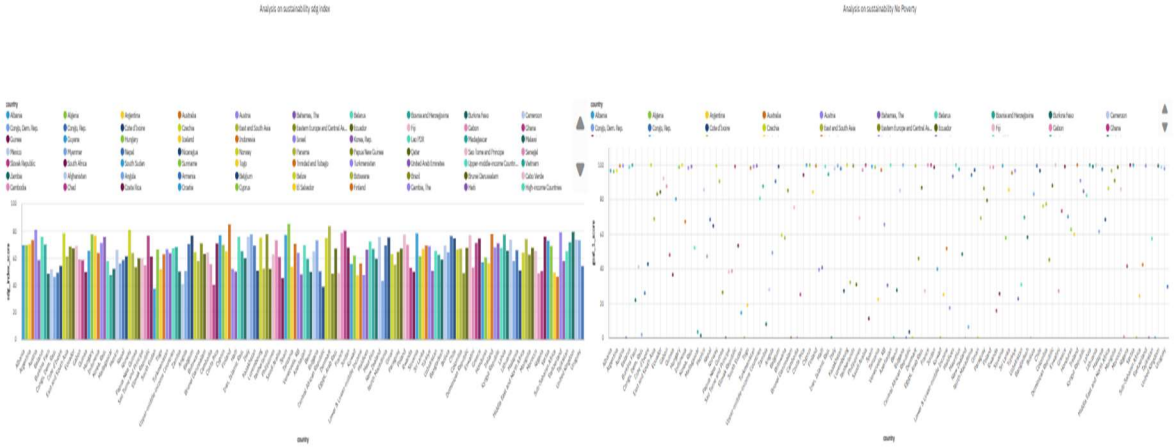


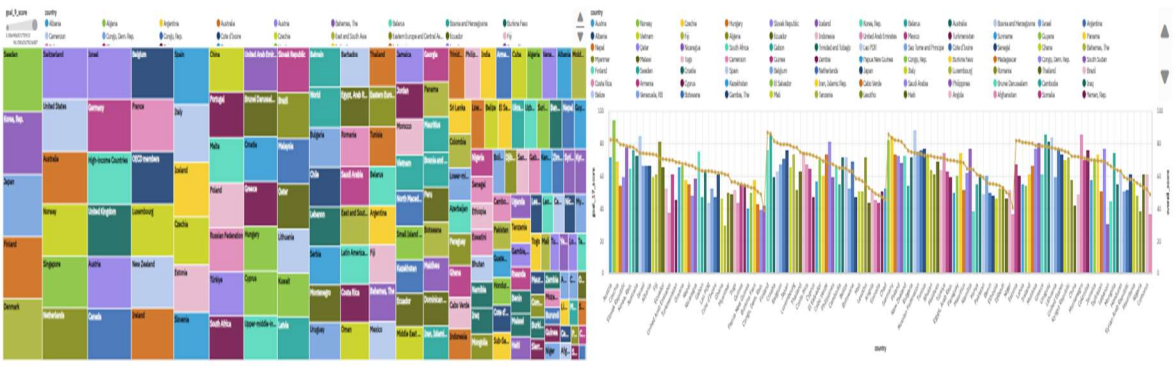

## Analysis on sustainability Reduce Inequalities

"Reduced Inequalities" , a key component of sustainable development goals (SDGs). A comprehensive view disparities and socio economic imbalance between countries, adding researchers and policy makers in the efforts to create more equitable societies worldwide. This data set plays a pivotal in promoting social justice and ensuring inclusive development.




# Report





## 6 ADVANTAGES & DISADVANTAGES

A Cognos-Based Analysis Of Global Trends (2000-2023)" project.

**Advantages:**

Comprehensive Data Analysis:The project allows for in-depth analysis of global sustainability trends by leveraging IBM Cognos Analytics and Planning Analytics, providing a comprehensive view of various factors influencing sustainable development.

Interactive Dashboards: The use of IBM Cognos facilitates the creation of interactive and dynamic dashboards, enabling stakeholders to explore data visually and gain actionable insights.

Scenario Modeling and Forecasting: The incorporation of IBM Cognos Planning Analytics allows for scenario modeling and forecasting, enabling decision-makers to anticipate future trends and plan interventions accordingly.

Experimental Investigations: The incorporation of experimental investigations provides an opportunity to gain deeper insights into specific aspects of the project, leading to more informed decision-making.

Comparative Analysis of SDGs: The project's ability to conduct a comparative analysis of different Sustainable Development Goals (SDGs) contributes to a nuanced understanding of progress across various dimensions of sustainability.

**Disadvantages:**

Data Quality and Availability: Dependence on the quality and availability of data from various sources may introduce inaccuracies or limitations in the analysis.

Complex Implementation: The integration of IBM Cognos Analytics, Planning Analytics, and other tools may require specialized knowledge and skills, leading to potential complexities in implementation.

Resource Intensiveness: The project may require significant resources, including time, budget, and personnel, for data collection, analysis, and the development of interactive dashboards.

Limited Predictive Accuracy:While scenario modeling and forecasting are valuable, predictive accuracy may be limited by uncertainties in future events and the complexity of global sustainability dynamics.

Potential Stakeholder Overwhelm:The complexity of the project, especially with interactive dashboards and detailed analyses, may overwhelm certain stakeholders, impacting effective communication of findings.

Dependence on External Factors:The success of the project may depend on factors outside its control, such as global policy changes, economic shifts, or unforeseen events, introducing uncertainties.

Security Concerns: Handling sensitive sustainability data poses security concerns, requiring robust measures to ensure the confidentiality and integrity of the information.

## 7 APPLICATIONS

The "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" project has diverse applications across various sectors due to its focus on analyzing global sustainability trends. Here are several potential applications:

1. Government Policy Development: - Governments can utilize the project's insights to inform the development and refinement of policies related to sustainable development, climate action, and environmental conservation.
2. International Organizations and NGOs: - International organizations and non-governmental organizations (NGOs) can leverage the project to assess progress towards global sustainability goals, guide advocacy efforts, and prioritize interventions.
3. Corporate Sustainability Reporting: - Corporations can use the project's findings to enhance their sustainability reporting, align business strategies with global trends, and make informed decisions regarding environmental and social responsibility.
4. Academic Research and Education: - The project's data and analyses can serve as valuable resources for academic researchers studying global trends, environmental science, and sustainability. It can also be used as an educational tool for students in relevant disciplines.
5. Community Development Initiatives: - Local governments and community organizations can apply the project's insights to identify areas for targeted community development initiatives, addressing specific sustainability challenges at the regional level.
6. Investment and Finance: - Investors and financial institutions can use the project's data to assess the sustainability performance of companies and industries, informing investment decisions aligned with environmental, social, and governance (ESG) criteria.
7. Environmental Conservation Organizations: - Organizations focused on environmental conservation can benefit from the project's geospatial visualizations to identify critical regions for conservation efforts and monitor the impact of climate change on ecosystems. The project's data can contribute to global collaborative initiatives, fostering international cooperation on shared sustainability goals and promoting transparency in progress reporting. By catering to these diverse applications, the project extends its impact beyond analytical insights, influencing decision-making processes and contributing to broader global efforts towards sustainable devel

## CONCLUSION

In conclusion, the project "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" has provided a comprehensive exploration of global sustainability dynamics, offering invaluable insights into the complex interplay of environmental, socio-economic, and developmental factors over the past two decades. Through the integration of advanced analytics, geospatial visualization, and scenario modeling within the IBM Cognos platform, this project has aimed to contribute to informed decision-making and strategic planning across diverse sectors.

The findings from this project underscore the critical importance of understanding global sustainability trends in shaping policies, fostering international collaboration, and driving positive change. By visualizing data on a regional and global scale, stakeholders across governments, NGOs, corporations, and communities can gain a nuanced understanding of the challenges and opportunities that define the sustainable development landscape.

The project's emphasis on user training and interactive dashboards within IBM Cognos ensures that stakeholders are not just recipients of data but active participants in the exploration and interpretation of trends. This approach fosters a data-driven culture, empowering decision-makers with the tools needed to navigate the complexities of sustainable development.

The experimental investigations conducted as part of the project, including impact assessments, geospatial analyses, and user interaction studies, have enriched our understanding of specific facets of sustainability. These experiments not only provide valuable insights for immediate decision-making but also lay the groundwork for continuous improvement and refinement of strategies in the pursuit of sustainable development goals.

While the project has yielded substantial advantages in terms of data analysis capabilities, user engagement, and scenario planning, it is not without its challenges. The dependence on data quality and availability, the complexity of IBM Cognos implementation, and the need for substantial resources are acknowledged as areas for consideration in future endeavors.

## 8 FUTURE SCOPE

The "Visualizing Sustainability: A Cognos-Based Analysis Of Global Trends (2000-2023)" project lays a robust foundation for future endeavors aimed at advancing sustainability and informed decision-making. The project's success and insights pave the way for several avenues of future exploration and enhancement: Integration of Advanced AI and Machine Learning: Incorporate advanced artificial intelligence (AI) and machine learning (ML) algorithms to further enhance predictive modeling, trend analysis, and anomaly detection within the sustainability landscape. Enhanced Geospatial Analytics: Expand geospatial analytics capabilities by incorporating real-time satellite data, remote sensing technologies, and finer granularity in regional mapping. This evolution would provide more accurate and timely insights into localized sustainability challenges. Continuous Data Refinement and Augmentation: Establish mechanisms for continuous data refinement and augmentation, ensuring that the project benefits from the latest and most accurate datasets. Explore partnerships with data providers, research institutions, and international organizations. Incorporation of Emerging Technologies: Explore the integration of emerging technologies such as blockchain for enhancing data security and transparency, and immersive technologies like virtual reality (VR) for more immersive and engaging data exploration experiences. Community Engagement and Citizen Science Initiatives: Develop platforms for community engagement and citizen science initiatives, empowering local communities to contribute data, share insights, and actively participate in the sustainability dialogue. This approach fosters a sense of ownership and inclusivity.

## 9 BIBILOGRAPHY

[1] United Nations. (2015). Transforming our World: The 2030 Agenda for Sustainable Development.

[2] World Bank. (2021). World Development Indicators.

[3] IPCC. (2018). Global Warming of 1.5°C. [

[4] IBM Corporation. (Year). IBM Cognos Analytics Documentation.

[5] ESRI. (2022). ArcGIS Documentation.

[6] Data Sources (https://www.kaggle.com/datasets/sazidthe1/sustainable-development-report).

**APPENDIX**

**INDEX.HTML**

```
<nav id="navbar" class="navbar">
        <ul>
          <li><a class="nav-link scrollto active" href="#hero">Home</a></li>
          <li><a class="nav-link scrollto" href="#about">Report</a></li>
          <li><a class="nav-link scrollto"
href="#services">Dashboard</a></li>
          <li><a class="nav-link scrollto" href="#portfolio">Story</a></li>
          <li><a class="nav-link scrollto" href="#team">Team</a></li>
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amp;ui_navbar=false&amp;shareMode=embedded&amp;action=run&amp;format=HTML&am
p;prompt=false" width="1100" height="1000" frameborder="0" gesture="media"
allow="encrypted-media" allowfullscreen=""></iframe>
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    </section><!-- End About Section -->
 <!-- ======= Services Section ======= -->
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```

```
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frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
      </div>

    </section><!-- End Portfolio Section -->
```

**APP.py**

```
from flask import Flask, render_template

app=Flask(__name__)

@app.route("/")
def home():
    return render_template("index.html")

if __name__ == "__main__":
    app.run(debug=False, port=5000)
```