

Human Development in Sudan: Evaluating Progress and Addressing Challenges

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ABSTRAK

Tujuan Penelitian: Studi ini mengevaluasi lintasan pembangunan manusia di Sudan, dengan fokus pada Indeks Pembangunan Manusia (HDI), Indeks Pembangunan Gender (GDI), dan HDI yang disesuaikan dengan Ketimpangan (IHDI) dari tahun 1990 hingga 2022. Hal ini bertujuan untuk mengidentifikasi kemajuan dan kegigihan tantangan di bidang kesehatan, pendidikan, dan pendapatan. **Metodologi:** Dengan memanfaatkan data sekunder dari laporan internasional, penelitian ini melakukan analisis kuantitatif dan kualitatif terhadap nilai-nilai HDI, GDI, dan IHDI, mengkaji tren dan kesenjangan selama tiga dekade. **Temuan Penelitian:** HDI Sudan meningkat dari 0,322 pada tahun 1990 menjadi 0,516 pada tahun 2022, namun negara ini masih berada dalam kategori pembangunan manusia 'Rendah', berada di peringkat 170 dari 193 negara. IHDI menunjukkan penurunan sebesar 35,9% karena kesenjangan. Nilai GDI sebesar 0,868 pada tahun 2022 menunjukkan kesenjangan gender yang besar, dengan HDI perempuan tertinggal dibandingkan HDI laki-laki. Temuan-temuan ini menyoroti distribusi manfaat pembangunan yang tidak merata dan tantangan yang ada dalam mencapai pembangunan manusia yang adil. **Kontribusi:** Studi ini meningkatkan pemahaman tentang pembangunan manusia di Sudan dengan memberikan analisis komprehensif tentang tren HDI, GDI, dan IHDI. Laporan ini menggarisbawahi dampak kesenjangan dan pentingnya kesetaraan gender bagi kemajuan berkelanjutan. **Implikasi Kebijakan:** Para pembuat kebijakan harus fokus pada pengurangan kesenjangan dan mendorong kesetaraan gender melalui kebijakan kesehatan, pendidikan, dan ekonomi yang ditargetkan untuk meningkatkan hasil pembangunan manusia. **Keterbatasan Penelitian:** Penelitian ini bergantung pada data sekunder, yang mungkin tidak mencerminkan realitas terkini. Penelitian di masa depan dapat menggunakan data primer untuk mendapatkan wawasan yang lebih terkini.

ABSTRACT

Research Aims: This study evaluates the human development trajectory of Sudan, focusing on the Human Development Index (HDI), Gender Development Index (GDI), and Inequality-adjusted HDI (IHDI) from 1990 to 2022. It aims to identify progress and persistent challenges in health, education, and income. **Methodology:** Utilizing secondary data from international reports, this research conducts a quantitative and qualitative analysis of HDI, GDI, and IHDI values, examining trends and disparities over three decades. **Research Findings:** The HDI of Sudan increased from 0.322 in 1990 to 0.516 in 2022, yet the country remains in the 'Low' human development category, ranked 170 out of 193 countries. The IHDI shows a 35.9%

reduction due to inequalities. The GDI value of 0.868 in 2022 reveals substantial gender disparities, with female HDI lagging behind male HDI. These findings highlight the uneven distribution of development benefits and ongoing challenges in achieving equitable human development. **Contribution:** This study enhances the understanding of human development in Sudan by providing a comprehensive analysis of HDI, GDI, and IHDI trends. It underscores the impact of inequalities and the importance of gender equality for sustainable progress. **Policy Implications:** Policymakers should focus on reducing inequalities and promoting gender equality through targeted healthcare, education, and economic policies to enhance human development outcomes. **Research Limitations:** The study relies on secondary data, which may not reflect the most recent realities. Future research could incorporate primary data for more up-to-date insights.

Introduction

Sudan, the third-largest country in Africa, boasts a rich historical and cultural heritage but has faced numerous challenges in its pursuit of sustainable human development (Nwali, 2021). Despite its vast natural resources and strategic geographical position, Sudan's socio-economic progress has been hindered by decades of conflict, political instability, and economic mismanagement (Siddig, 2014). This introduction delves into the multifaceted aspects of human development in Sudan, examining the progress made and the persistent challenges that continue to impede the nation's growth. Sudan's history is marked by a series of complex socio-political dynamics that have significantly shaped its human development trajectory (Awad, 2022). The country gained independence from British-Egyptian rule in 1956, embarking on a tumultuous journey characterized by civil wars, military coups, and prolonged political unrest. The prolonged conflict between the north and the south culminated in the secession of South Sudan in 2011, which significantly altered the demographic and economic landscape of the remaining Sudan (Musa & Musa, 2023).

The Comprehensive Peace Agreement (CPA) of 2005, which ultimately led to South Sudan's independence, was a pivotal moment in Sudan's history. However, the peace and stability anticipated from the agreement have been elusive. Instead, Sudan has continued to grapple with internal conflicts, particularly in the Darfur region, as well as in South Kordofan and Blue Nile states (Aalen, 2013). These conflicts have had devastating effects on human development, resulting in loss of life, displacement, and destruction of infrastructure. Sudan's economy has traditionally been reliant on agriculture, which employs a significant portion of the population. The discovery and subsequent exploitation of oil in the late 20th century provided a temporary economic boost, transforming Sudan into an oil-exporting nation. However, the secession of South Sudan in 2011, which took with it approximately 75% of the former united Sudan's oil reserves, dealt a severe blow to the economy. The loss of oil revenue exacerbated the country's fiscal deficit and triggered a period of economic decline (Ahmed, 2010).

In recent years, Sudan has faced hyperinflation, currency devaluation, and a severe foreign exchange crisis. These economic challenges have had profound implications for human development, contributing to high levels of poverty, unemployment, and food insecurity (Mohamed, 2020). Despite efforts to diversify the economy and implement economic reforms, the structural weaknesses and legacy of economic mismanagement continue to pose significant obstacles. Sudan's healthcare system has been strained by decades of conflict and underinvestment. Access to healthcare services remains limited, particularly in rural and conflict-affected areas. The country faces high maternal and infant mortality rates, malnutrition, and a high prevalence of communicable diseases such as malaria and tuberculosis. Efforts to improve healthcare infrastructure and services have been hampered by inadequate funding, shortage of healthcare professionals, and limited access to essential medicines (Mahendradhata et al., 2021).

Education is a critical component of human development, yet Sudan's education sector faces significant hurdles. Literacy rates have improved over the years, but regional disparities persist, with rural and conflict-affected areas lagging behind. Primary school enrollment rates have increased, but the quality of education remains a concern due to overcrowded classrooms, insufficient teaching materials, and poorly trained teachers. Secondary and tertiary education opportunities are limited, and there is a significant gender gap in educational attainment, with girls often facing cultural and economic barriers to education. The standard of living in Sudan is characterized by high levels of poverty and inequality. According to the United Nations Development Programme (UNDP), a significant proportion of the population lives below the poverty line, with limited access to basic services such as clean water, sanitation, and electricity (Nuryakin et al., 2023). Rural areas are particularly disadvantaged, with many communities lacking essential infrastructure and services. Urban areas, while better off in terms of infrastructure, are not immune to poverty and unemployment, with many urban dwellers living in informal settlements with precarious living conditions (Hutchings et al., 2022).

Effective governance and strong institutions are essential for sustainable human development. In Sudan, governance has been undermined by prolonged political instability, corruption, and weak institutions. The transition to democracy following the ousting of President Omar al-Bashir in 2019 raised hopes for political and economic reform (Kostelyanets, 2022). However, the transitional government has faced significant challenges, including managing the legacy of past conflicts, addressing economic woes, and navigating complex political dynamics. Corruption remains a pervasive issue, with public resources often mismanaged or siphoned off for personal gain. This has eroded public trust in government institutions and hindered efforts to implement effective development policies. Strengthening

governance and building robust institutions are crucial for creating an enabling environment for human development (Mamokhere, 2022).

Sudan's humanitarian crisis, driven by conflict, natural disasters, and economic hardships, has had severe implications for human development. Millions of Sudanese are internally displaced, and many have sought refuge in neighboring countries. Displacement has disrupted livelihoods, education, and access to healthcare, exacerbating the already dire humanitarian situation. The conflict in Darfur, which began in 2003, has led to widespread displacement and human rights abuses. Despite the signing of peace agreements, violence and insecurity persist, hindering humanitarian efforts and development initiatives. The humanitarian needs in Sudan are vast, and addressing them requires coordinated efforts from the government, international organizations, and civil society (Musa et al., 2022).

Gender inequality is a significant barrier to human development in Sudan. Women and girls face numerous challenges, including limited access to education, healthcare, and economic opportunities. Gender-based violence, early marriage, and cultural norms that restrict women's participation in public life further exacerbate their vulnerability. Efforts to promote gender equality and empower women are crucial for achieving sustainable human development. This includes implementing policies that protect women's rights, increasing women's participation in decision-making processes, and providing opportunities for education and economic empowerment. Human development in Sudan is a complex and multifaceted issue, shaped by historical, economic, social, and political factors (LeRoux-Rutledge, 2020). While there has been progress in certain areas, significant challenges remain. Addressing these challenges requires a comprehensive and coordinated approach that prioritizes peace, stability, and inclusive development. By strengthening governance, investing in health and education, promoting gender equality, and addressing the humanitarian crisis, Sudan can pave the way for a more prosperous and equitable future for its people (Sanatani, 2020).

The research objectives are to evaluate Sudan's progress in human development over the past three decades, particularly in health, education, and income, identify and analyze inequalities focusing on gender, economic, and regional disparities, assess the effectiveness of policies addressing human development challenges, investigate the impact of environmental pressures on human development, and develop evidence-based recommendations for policymakers to enhance human development outcomes in Sudan.

Research Questions

1. What progress has Sudan made in human development indicators such as health, education, and income since 1990?

2. What are the key inequalities affecting human development in Sudan, and how do they vary by gender, region, and socio-economic status?
3. How effective have government policies been in addressing human development challenges in Sudan?
4. What are the main environmental pressures impacting human development in Sudan, and how can sustainable practices be integrated to mitigate these pressures?
5. What targeted interventions can be recommended to improve human development outcomes and reduce inequalities in Sudan?

Method

This study employs a literature review methodology, focusing on secondary data to assess human development in Sudan (Mishra et al., 2021). The approach involves systematic collection, analysis, and interpretation of existing data from various credible sources, including international development reports and academic literature (Musa et al., 2024). The aim is to provide a comprehensive understanding of Sudan's progress and challenges in human development. This study's literature review methodology provides a structured approach to understanding human development in Sudan through the analysis of secondary data (Alam, 2021). By synthesizing information from multiple credible sources, the study aims to present a comprehensive overview of the progress, challenges, and policy implications related to human development in Sudan. The findings will offer valuable insights for policymakers, researchers, and stakeholders involved in promoting sustainable human development in the country.

The primary sources of secondary data for this study include Human Development Reports (HDR), these reports by the United Nations Development Program (UNDP) provide detailed data on the Human Development Index (HDI), Gender Development Index (GDI), Inequality-adjusted HDI (IHDI), Gender Inequality Index (GII), Multidimensional Poverty Index (MPI), and Planetary Pressures-adjusted HDI (PHDI) for Sudan (Kohler & Bowra, 2020). The World Bank database offers extensive data on various socio-economic indicators, including health, education, income, and environmental sustainability for Sudan. Also, Peer-reviewed journals and articles provide insights into specific aspects of human development in Sudan, including policy analyses, case studies, and theoretical discussions. Reports from Sudanese government agencies and ministries provide context-specific data and policy information relevant to human development. Publications and reports from NGOs operating in Sudan offer valuable perspectives on ground-level human development issues and interventions.

Data Collection and Data Analysis

The data collection process involves the Relevant sources being identified through a comprehensive search of online databases, libraries, and official websites of

international organizations, government agencies, and NGOs, Key data and information are extracted from the identified sources. This includes statistical data, trends, and findings related to HDI, GDI, IHDI, GII, MPI, and PHDI for Sudan. A thorough review of the extracted data is conducted to synthesize the information, identify patterns, and highlight significant findings (Rafiq et al., 2021). The analysis of secondary data involves both quantitative and qualitative techniques, Statistical data from the reports are analyzed to identify trends, changes, and comparisons over time. Descriptive statistics are used to summarize the data, and graphical representations such as charts and graphs are employed to visualize trends. Qualitative data, including narratives and policy analyses, are reviewed to understand the contextual factors influencing human development in Sudan. Thematic analysis is used to identify key themes and insights from the literature. Only data from credible and reliable sources are used to ensure the accuracy and validity of the findings. All sources of secondary data are properly cited and acknowledged to maintain academic integrity and respect for intellectual property. There may be gaps in the available data for certain indicators or periods, which could limit the comprehensiveness of the analysis. Differences in data collection methodologies and reporting standards across sources may affect the consistency and comparability of the data. Secondary data may not fully capture the current on-the-ground realities in Sudan, particularly in rapidly changing contexts (Rafiq et al., 2021).

Results and Discussion

This section presents the findings from the literature review on human development in Sudan, drawing on secondary data from various credible sources. The results are organized into key themes corresponding to the research objectives, including overall human development progress, inequalities, policy impacts, and environmental sustainability. Each theme is discussed in detail, highlighting significant trends, challenges, and implications for future development strategies in Sudan. The discussion integrates quantitative data with qualitative insights to provide a comprehensive understanding of the current state and potential pathways for improving human development in the country.

Trends in Sudan's HDI 1990 – 2022

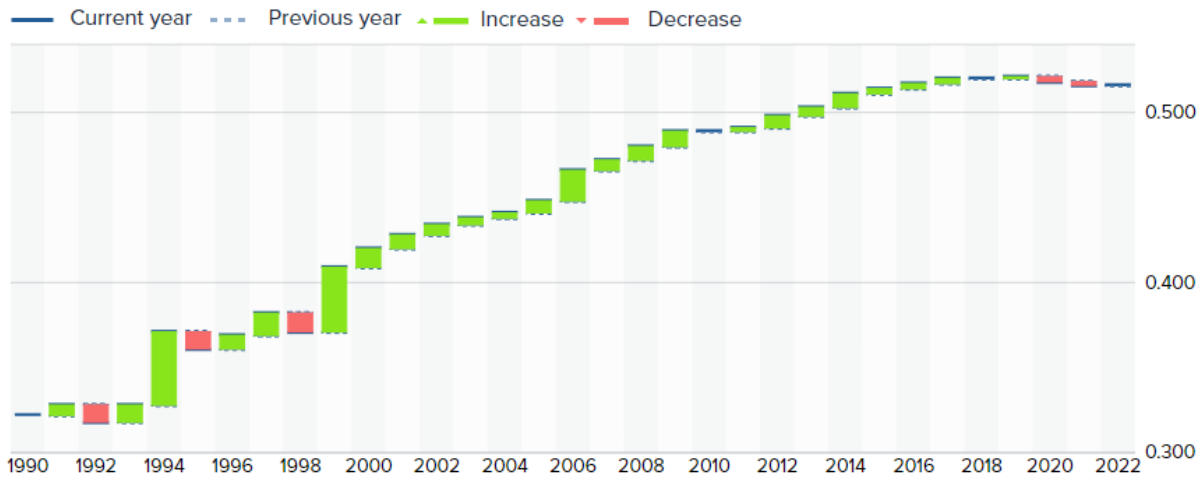


Figure 1 Human Development Index

Source: UNDP Reports Updated on March 13th, 2024

The figure 1 depicts the trends in Sudan's Human Development Index (HDI) from 1990 to 2022, highlighting the annual changes in HDI values. The chart uses color coding to indicate increases (green) and decreases (red) in HDI from year to year, providing a clear visual representation of the country's developmental trajectory over three decades. From 1990 to 2022, Sudan's HDI shows an overall upward trend, reflecting significant improvements in the three fundamental dimensions of human development: health (life expectancy), education (mean and expected years of schooling), and income (GNI per capita). However, the path to this improvement has not been linear, with periods of both progress and setbacks.

In the early 1990s, Sudan experienced several years of stagnation and slight decreases in HDI, as indicated by the presence of red bars in the chart. This period of minimal progress can be attributed to various factors, including political instability, economic challenges, and social conflicts that adversely affected the country's development efforts. Starting around 1998, there is a noticeable shift towards more consistent increases in HDI values, marked by the prevalence of green bars. This period indicates a phase of recovery and improvement, likely due to increased efforts in policy reforms, economic development, and social programs aimed at enhancing health and education outcomes. The early 2000s, in particular, show sustained growth in HDI, reflecting successful interventions and a more stable socio-political environment.

Between 2006 and 2012, the figure shows a continuation of this positive trend with substantial year-on-year increases in HDI. These years likely saw enhanced investments in healthcare infrastructure, educational systems, and economic policies that collectively contributed to improved living standards. The gradual but steady progress during this period underscores the effectiveness of long-term development strategies. However, the chart also highlights

some years with minor decreases or stagnation in HDI values, particularly around 2015 and 2020. These fluctuations can be attributed to various external and internal shocks, including economic downturns, conflicts, and global crises such as the COVID-19 pandemic, which disrupted progress and posed significant challenges to the country's development agenda. Despite these fluctuations, the overall trajectory remains positive, culminating in an HDI value of approximately 0.516 in 2022. This represents a significant improvement from the 1990 baseline but still places Sudan within the 'Low' human development category. The persistent challenges reflected in the occasional red bars indicate areas where development efforts need to be intensified to ensure sustainable and inclusive growth.

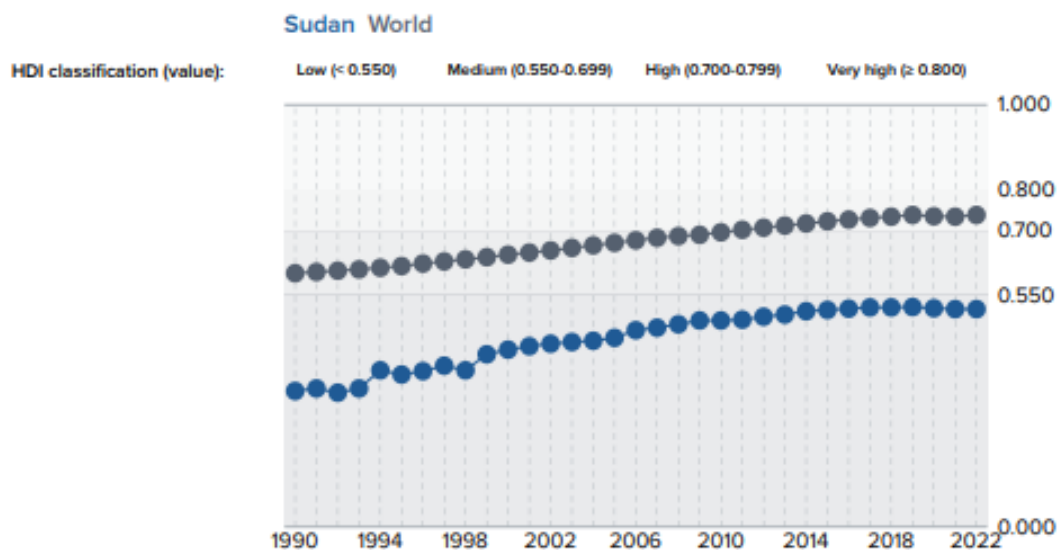


Figure 2 Human Development Index (HDI) trends

Source: UNDP Reports Updated on March 13th, 2024

Figure 2 illustrates the Human Development Index (HDI) trends for Sudan compared to global averages from 1990 to 2022. This comparison provides a clear visualization of Sudan's progress relative to the global context. The HDI values are categorized into four classifications: Low (below 0.550), Medium (0.550-0.699), High (0.700-0.799), and Very High (0.800 and above). Sudan's HDI value has shown a steady increase over the past three decades, moving from a very low base towards the higher end of the 'Low' category (Gudo et al., 2022). From 1990 to 2022, Sudan's HDI rose significantly, reflecting improvements in key dimensions of human development such as life expectancy, education, and income. Despite this upward trend, Sudan's HDI has consistently lagged behind the global average. The global HDI values have remained relatively high, steadily progressing within the 'High' to 'Very High' categories, while Sudan's HDI has remained in the 'Low' category throughout the period.

This persistent gap between Sudan's HDI and the global average highlights the substantial disparities in human development outcomes. While the world has seen considerable advancements in human development, Sudan's progress, though notable, has not kept pace with the global trends (Buny & Apet). The improvements in Sudan's HDI indicate efforts towards enhancing health services, educational access, and economic opportunities (Saleh et al., 2022). However, the rate of improvement has been insufficient to bridge the gap with global standards. Several factors contribute to this disparity. Historical and ongoing conflicts, economic sanctions, political instability, and socio-economic inequalities have significantly hindered Sudan's human development. These challenges have resulted in slower progress compared to global advancements, which have benefited from more stable political and economic environments. The figure underscores the need for sustained and targeted interventions to accelerate Sudan's human development. Focused efforts on improving healthcare, education, and economic policies are essential to elevating the country's HDI towards medium or high human development categories. Additionally, addressing systemic issues such as inequality, gender disparities, and environmental sustainability will be crucial in fostering inclusive and sustainable development.

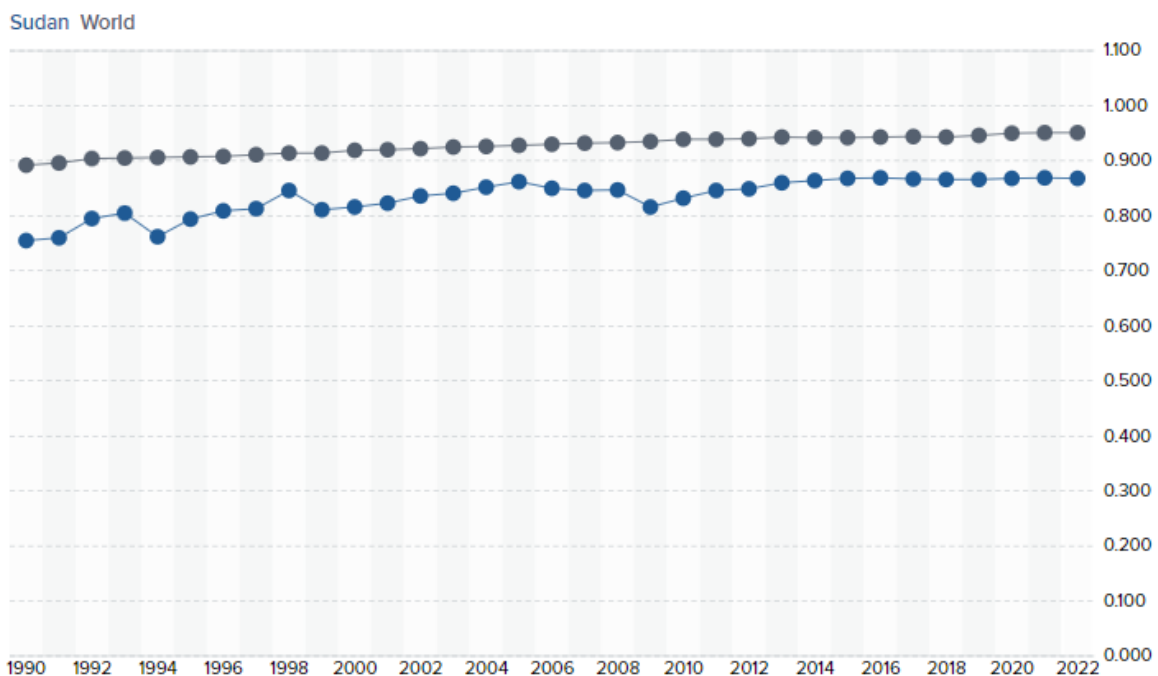


Figure 3 Gender Development Index (GDI)

Source: UNDP Reports Updated on March 13th, 2024

Figure 3 illustrates the Gender Development Index (GDI) for Sudan in comparison to the global average from 1990 to 2022. The GDI measures gender gaps in achievements across three core dimensions of human development: health, education, and living standards. It is

calculated as a ratio of the female HDI to the male HDI, providing insight into gender-based disparities.

For Sudan, the 2022 GDI value is 0.868, indicating significant gender gaps. Specifically, the female HDI value for Sudan is 0.472, whereas the male HDI value is 0.544. This discrepancy places Sudan in Group 5, highlighting substantial gender inequality in the country.

Analyzing the trend over time, it is evident that Sudan has faced persistent gender disparities since 1990. While there have been periods of improvement, particularly in the early 2000s, the overall GDI has remained relatively low compared to the global average. The global GDI values are consistently higher, typically above 0.900, indicating smaller gender gaps in human development worldwide. The graph shows that from 1990 to the early 2000s, Sudan's GDI saw fluctuations, reflecting varying progress in addressing gender disparities. Notably, there were some declines around the mid-1990s and early 2010s, which could be attributed to socio-political instability, economic challenges, and policy inefficacies that disproportionately affected women's health, education, and economic opportunities.

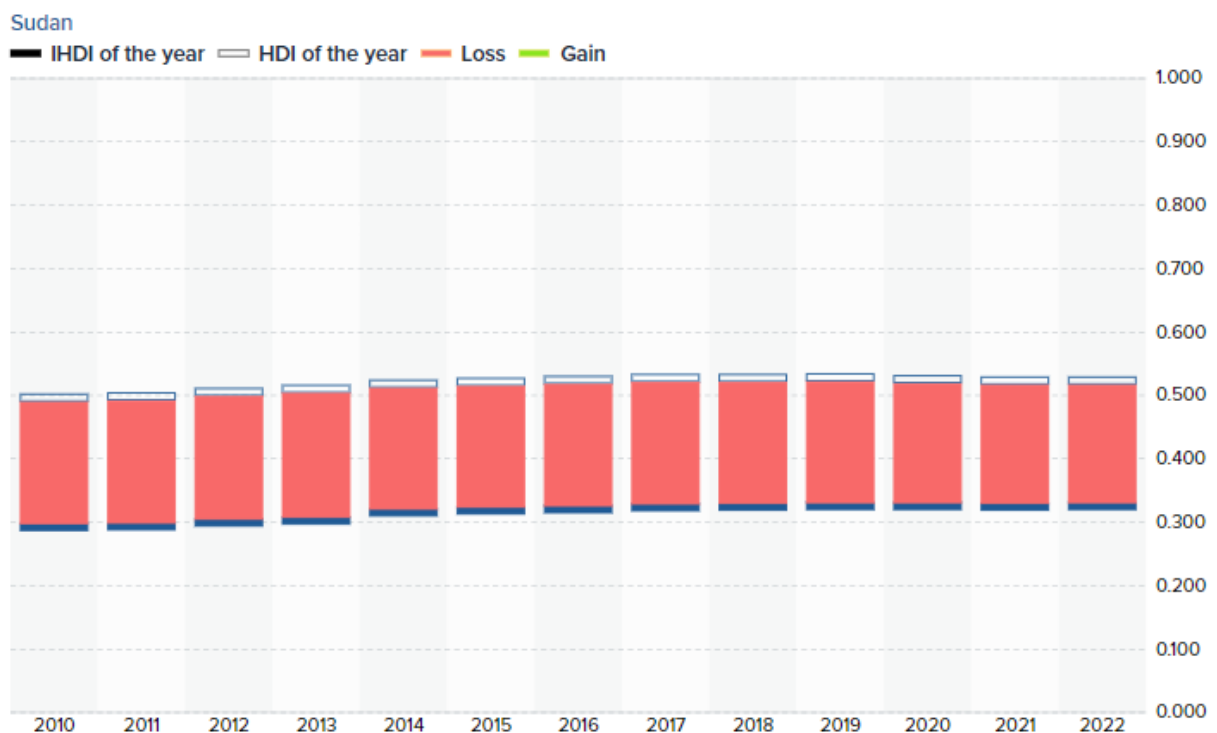


Figure 4 Inequality-adjusted Human Development Index (IHDI)

Source: UNDP Reports Updated on March 13th, 2024

Figure 4 presents the Inequality-adjusted Human Development Index (IHDI) for Sudan from 2010 to 2022. The IHDI modifies the traditional HDI by accounting for inequalities in the

distribution of each dimension of human development across the population. The 'loss' in human development due to inequality is illustrated by the difference between the HDI and the IHDI. As inequality increases, the loss in human development becomes more pronounced. In 2022, Sudan's HDI was 0.516. However, when adjusted for inequality, the IHDI value drops to 0.331, indicating a significant loss of 35.9%. This substantial reduction highlights the pervasive inequalities affecting Sudanese society across health, education, and income dimensions. The figure shows that the overall loss in human development due to inequality has been relatively consistent over the years, fluctuating around the 35% mark. This consistently high level of loss underscores persistent and significant disparities that undermine the overall progress in human development.

Breakdown of Inequality Dimensions

1. **Inequality in Life Expectancy:** The loss due to inequality in life expectancy is 26.3%. This suggests that significant disparities exist in health outcomes across different population groups. Factors contributing to this include unequal access to healthcare services, differences in health conditions, and varying life expectancy rates between different regions and socio-economic groups.
2. **Inequality in Education:** The educational dimension experiences the highest inequality, with a loss of 42.5%. This indicates stark disparities in access to and quality of education among different groups, likely influenced by factors such as gender, region, and socio-economic status. Such high inequality in education severely impacts overall human development, as education is a critical determinant of economic opportunities and quality of life.
3. **Inequality in Income:** The income inequality loss is 39.3%, reflecting significant disparities in income distribution. High-income inequality indicates that economic growth and resources are not equitably shared among the population, leading to substantial sections of the population living in poverty while a smaller segment enjoys higher standards of living.

Trends and Implications

The figure demonstrates that while Sudan has made some strides in improving its HDI, these gains are substantially eroded when adjusted for inequality. The consistent red bars from 2010 to 2022 illustrate the ongoing and pervasive nature of these disparities.

Policy Implications

To address these inequalities and improve the IHDI, comprehensive and targeted policies are required:

- 1) **Health Equity:** Implementing policies that ensure equitable access to healthcare services, particularly for marginalized and rural populations. This includes improving healthcare infrastructure, increasing the availability of healthcare professionals, and addressing specific health needs of disadvantaged groups.

- 2) Educational Reforms: Ensuring that educational opportunities are equally accessible to all, irrespective of gender, socio-economic status, or geographical location. This involves increasing investments in educational infrastructure, providing scholarships and financial support for disadvantaged students, and promoting gender equality in education.
- 3) Economic Policies: Formulating economic policies that promote inclusive growth and equitable income distribution. This can be achieved through progressive taxation, social safety nets, and programs that support small and medium enterprises (SMEs), particularly those led by women and underrepresented groups.

Conclusion

The comprehensive analysis of Sudan's Human Development Index (HDI) reveals significant progress and persistent challenges in the country's human development trajectory. Over the past three decades, Sudan has made commendable strides in improving health, education, and economic outcomes, as evidenced by the gradual increase in its HDI from 0.322 in 1990 to 0.516 in 2022. This improvement signifies a substantial, though uneven, advancement in key development indicators. Despite these gains, Sudan remains categorized within the 'Low' human development category, highlighting ongoing deficiencies in various dimensions of human development. The Inequality-adjusted HDI (IHDI) underscores the significant impact of inequality on overall development, with a loss of 35.9% in 2022 due to disparities in health, education, and income. This indicates that the benefits of development are not evenly distributed among the population, with marginalized groups experiencing substantial deprivation.

The Gender Development Index (GDI) further illustrates the gender disparities that hinder human development in Sudan. With a GDI value of 0.868 in 2022, the analysis reveals significant gender gaps in life expectancy, education, and income. Addressing these gender disparities is critical for ensuring equitable development and improving the overall HDI. To foster sustainable human development, Sudan must implement comprehensive policies that address the root causes of inequality and poverty. This includes investing in healthcare and educational infrastructure, promoting gender equality, ensuring equitable economic growth, and improving access to basic services and amenities. By adopting an inclusive development strategy that prioritizes the needs of the most disadvantaged groups, Sudan can make significant progress towards higher human development classifications. In conclusion, while Sudan has made notable advancements in human development, the challenges of inequality, gender disparities, and multidimensional poverty remain significant barriers to achieving sustainable and inclusive development. Continued efforts and targeted interventions are essential to build on the progress made and ensure that all Sudanese citizens can benefit from and contribute to the country's development. Addressing these issues holistically will be

crucial for Sudan to enhance its human development outcomes and achieve its full potential in the coming years.

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