

Research Article

# Appraisal of the UN Sustainable Development Goals: A Look Back and a Way Forward

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This study aimed to assess the progress made on the United Nations Sustainable Development Goals (UN SDGs), explore remaining challenges, and analyze the prospects for sustainable development. This study employed a descriptive research design to evaluate the progress, challenges, and prospects of the UN SDGs. The research adopted a multi-disciplinary approach, incorporating elements of economics, sociology, environmental, and political science. The primary data source was secondary data collected from various reputable organizations and databases. The analysis revealed uneven progress on the SDGs, with advancements in some areas like poverty reduction, but significant hurdles in climate change and inequality. The study identified the need for increased focus on financing mechanisms, technological innovation, and public awareness campaigns to accelerate progress. The study emphasizes the continued importance of the SDGs and the urgency of global commitment to achieve them. It concludes with a call to action for various stakeholders to contribute towards a sustainable future.

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## Introduction

The United Nations Sustainable Development Goals (UN SDGs) are 17 interconnected goals adopted by all UN member states in 2015<sup>[1]</sup>. These goals represent a universal call to action aimed at achieving a sustainable future for all by 2030.

The overall goals of the SDGs are to: End poverty in all its forms everywhere; Protect the planet and ensure that nature can continue to provide for the present and future generations; Promote prosperity

that is shared, equitable, and sustainable.

The SDGs address a wide range of global challenges, including poverty, hunger, health, education, gender equality, clean water and sanitation, climate change, and peace and justice<sup>[1]</sup>. They recognize that these issues are interconnected, and that progress in one area will contribute to progress in others.

The SDG Index and Dashboard has provided the Sustainable Development Report (SDR) with up-to-date data to track and rank the performance of all the UN member states (<https://dashboards.sdindex.org/chapters>). Appraising progress towards the UN SDGs is crucial for several reasons. It allows us to understand which goals are on track and which require more focused efforts. This helps in strategically allocating resources and adapting strategies to maximize impact<sup>[2]</sup>. Regular appraisals hold governments and institutions accountable for their commitments towards achieving the SDGs. Transparent reporting builds trust and fosters collaboration among stakeholders<sup>[3]</sup>. As circumstances change and new challenges emerge, appraisals can inform policy adjustments and revisions to the SDG framework itself. Regular assessments ensure the goals remain relevant and address evolving needs<sup>[4]</sup>. Highlighting progress towards the SDGs can be a powerful tool for motivating continued action and inspiring change from governments, businesses, and civil society. Positive results can garner public support and encourage further investment in sustainable solutions<sup>[5]</sup>.

## Methodology

This study employed a descriptive research design to evaluate the progress, challenges, and future prospects of the UN SDGs. The research adopted a multi-disciplinary approach, incorporating elements of economics, sociology, environmental, and political science. The primary source of data were secondary data collected from various reputable organizations and databases. Key sources include: United Nations Development Programme (UNDP), World Bank, International Monetary Fund (IMF), World Health Organization (WHO), Intergovernmental Panel on Climate Change (IPCC), National statistical offices, Academic journals and publications, Government reports and policy documents and Think tank reports and analyses. To provide a clear overview of the data, descriptive statistics was used to summarize key indicators related to the SDGs.

It is essential to acknowledge potential limitations, such as data availability, accessibility, and comparability across different sources. Additionally, the study focused on a macro-level analysis and may not capture nuances at the local level.

While the study provides a comprehensive overview of the SDGs and their progress, it is essential to acknowledge potential limitations. The availability and quality of data can vary across countries and SDGs. This can affect the accuracy and reliability of the analysis. The SDGs are interconnected and influenced by numerous factors. This makes it challenging to isolate the impact of specific policies or interventions on SDG progress. Assessing progress on the SDGs can involve subjective judgments, particularly when considering qualitative factors. The chosen methodology may have limitations in terms of data collection, analysis, and interpretation. Additionally, the study focused on a macro-level analysis and may not capture nuances at the local level. The global context is constantly evolving, with new challenges and opportunities emerging. This can make it difficult to predict future trends and outcomes. It is important to acknowledge these limitations and consider their potential impact on the study's findings.

# A Look Back: Evaluating the Impact of the SDGs

## SDGs with Significant Progress



While the overall progress towards the SDGs (Figure 1) remains uneven, several goals have shown remarkable advancements in recent years.

### 1. Goal 1: End poverty in all its forms everywhere

The global poverty rate has been cut significantly, falling from 36% in 1990 to 8.4% in 2015<sup>[6]</sup>. This translates to lifting over 1.3 billion people out of extreme poverty. More people have access to electricity, clean water, and sanitation compared to 2015<sup>[7]</sup>.

### 2. Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

The global primary school enrollment rate reached 91% in 2020, with significant progress in girls' education<sup>[8]</sup>. Adult literacy rates have risen globally, particularly among women<sup>[8]</sup>.

The UN SDGs recognize the importance of collaboration between governments, businesses, Non-Governmental Organizations (NGOs), and civil society to achieve these ambitious goals. A couple of examples of successful partnerships and initiatives driving progress include:

Educate Girls Initiative in Rajasthan and other underserved states in India. The initiative tackles gender disparity in education, high dropout rates, and poor learning outcomes in rural areas where socio-economic factors often limit educational access for girls. Educate Girls works with local communities to ensure girls' enrollment and retention in schools. The program enlists volunteers from local villages who mobilize communities, advocate for education, and support school systems. The initiative emphasizes foundational literacy and numeracy through remedial programs to bridge learning gaps. Over the years, Educate Girls has helped re-enroll a significant number of out-of-school girls in rural India. The program has reported measurable improvements in literacy and numeracy, benefiting both boys and girls. It has also empowered communities to prioritize education, fostering a culture of lifelong learning and inclusivity<sup>[9][6]</sup>.

### *SDGs with Limited Progress*

While some SDGs have seen significant strides, others face considerable challenges with limited progress:

#### **1. Goal 5: Achieve gender equality and empower all women and girls**

Despite some advancements, women still face significant disadvantages in areas like education, employment, and political participation<sup>[10]</sup>. The global gender pay gap remains high, with women earning an average of 16% less than men<sup>[11]</sup>.

#### **2. Goal 13: Take urgent action to combat climate change and its impacts**

Despite commitments to reduce greenhouse gas emissions, global temperatures continue to rise, putting ecosystems and societies at risk<sup>[12]</sup>. The transition towards clean energy sources is happening too slowly to meet the goals set out in the Paris Agreement<sup>[13]</sup>.

Several factors contribute to limited progress on achieving the SDGs. The estimated annual funding gap to achieve the SDGs in developing countries is currently around \$4 trillion<sup>[5]</sup>. Key funding shortages are observed in areas like health, education, and water sanitation, which require urgent and scaled investments<sup>[14][15]</sup>. This gap is exacerbated by declining aid flows. Official Development Assistance (ODA) from developed nations has stagnated or even declined in recent years<sup>[16]</sup>. There are

competing priorities. Global crises like the pandemic and geopolitical conflicts divert resources away from long-term development goals. Resource inefficiencies have occurred. Even with available resources, inefficiencies can hinder progress. These include inefficient public spending. Corruption, mismanagement, and a lack of transparency in public budgets can prevent resources from reaching their intended targets<sup>[17]</sup>. There is the unmobilized private sector investment. The private sector holds significant resources, but insufficient incentives and risk mitigation strategies limit its engagement in sustainable development projects<sup>[18]</sup>.

The financial divide remains a critical issue, with developing nations often paying double the interest rates on sovereign debt compared to developed countries. This financial strain hampers their ability to invest in sustainable development. Bridging the gap necessitates innovative public and private financing, reforming international financial systems, and enhancing cooperation to enable sustainable development projects<sup>[14][15]</sup>.

Political instability and conflict are significant barriers to achieving the SDGs which often lead to weak or failing institutions, hindering the ability to develop and implement long-term development plans aligned with the SDGs<sup>[19]</sup>. Governments in conflict often prioritize security and immediate survival over long-term SDGs. Conflicts divert resources away from crucial areas like healthcare, education, and infrastructure development, essential for achieving many SDGs<sup>[20]</sup>. Conflict can lead to the destruction of vital infrastructure and economic resources, setting back progress for years. Conflicts often displace populations, creating humanitarian crises and straining resources in host countries. Fragile and post-conflict states struggle to meet the basic needs of their citizens, hindering progress on broader development goals<sup>[21]</sup>. Conflict can create opportunities for exploitation of resources and people. This undermines sustainable development and can lead to environmental degradation and human rights abuses<sup>[22]</sup>.

Public awareness and social acceptance are crucial for achieving the SDGs. Certain cultural norms and traditions may contradict aspects of the SDGs, such as those promoting gender equality or environmental protection. Overcoming resistance requires sensitive and culturally appropriate approaches<sup>[23]</sup>. The spread of misinformation and disinformation can create confusion and distrust around the SDGs, hindering public support for related policies and initiatives<sup>[5]</sup>. Lack of awareness and understanding of the SDGs among the public limits their ability to hold governments and businesses accountable for progress<sup>[17]</sup>.

To addressing these challenges will require investing in education campaigns that effectively communicate the goals and their benefits to diverse communities is essential<sup>[23]</sup>. Encouraging active participation from communities in developing and implementing SDG-related strategies fosters ownership and support<sup>[17]</sup>. Supporting initiatives that promote media literacy and fact-checking can help counter the spread of misinformation hindering progress<sup>[5]</sup>.

## Current State of Affairs for the SDGs: A Snapshot

This is a brief overview of the current state of affairs for each SDG, incorporating progress made and remaining challenges. Data and reports from the UN SDGs Report 2023<sup>[5]</sup> are used as the primary source.

1. **No Poverty:** While extreme poverty rates have been cut significantly, progress has stalled in recent years, and new challenges like COVID-19 threaten to push more people into poverty<sup>[5]</sup>.
2. **Zero Hunger:** Hunger remains a significant issue, with millions facing food insecurity. Climate change and conflict further threaten food production systems<sup>[5]</sup>.
3. **Good Health and Well-being:** Improvements have been made in child mortality and access to healthcare. However, pandemics, rising non-communicable diseases, and unequal access to healthcare remain challenges<sup>[5]</sup>.
4. **Quality Education:** Enrollment rates have increased globally, but learning outcomes and quality education remain uneven across regions<sup>[5]</sup>.
5. **Gender Equality:** Despite progress in girls' education and political participation, significant gender gaps persist in areas like employment, pay equity, and violence against women<sup>[5]</sup>.
6. **Clean Water and Sanitation:** Access to clean water and sanitation has improved globally, but millions still lack these basic necessities. Water scarcity and pollution remain challenges<sup>[5]</sup>.
7. **Affordable and Clean Energy:** Investments in renewable energy are increasing, but the pace of transition is insufficient to meet climate goals. Energy access remains a challenge in developing countries<sup>[5]</sup>.
8. **Decent Work and Economic Growth:** Global unemployment remains high, and informality in the workforce is widespread. Decent work with fair wages and social protection is a challenge for many<sup>[5]</sup>.

9. **Industry, Innovation and Infrastructure:** Significant progress has been made in infrastructure development, but ensuring sustainable and inclusive infrastructure remains a challenge<sup>[5]</sup>.
10. **Reduced Inequalities:** Income inequality is rising within and between countries. Addressing this growing gap requires tackling issues like tax evasion and promoting progressive social policies<sup>[5]</sup>.
11. **Sustainable Cities and Communities:** Urbanization continues rapidly, but challenges include managing waste, providing affordable housing, and ensuring inclusive and safe cities.<sup>[5]</sup>
12. **Responsible Consumption and Production:** Consumption patterns remain unsustainable, with overexploitation of resources and generation of excessive waste. Transitioning towards a circular economy is needed<sup>[5]</sup>.
13. **Climate Action:** Urgent action is needed to mitigate climate change and adapt to its impacts. Global greenhouse gas emissions continue to rise, and investments in climate solutions are insufficient<sup>[5]</sup>.
14. **Life Below Water:** Marine ecosystems face multiple threats, including pollution, overfishing, and climate change. Urgent action is needed to protect and conserve our oceans<sup>[5]</sup>.
15. **Life on Land:** Biodiversity loss and habitat degradation are accelerating. Protecting ecosystems and promoting sustainable land management are crucial<sup>[5]</sup>.
16. **Peace, Justice and Strong Institutions:** Conflicts, violence, and weak institutions continue to hinder development. Strengthening peaceful societies and promoting human rights is essential<sup>[5]</sup>.
17. **Partnerships for the Goals:** International cooperation and partnerships are crucial for achieving the SDGs. However, mobilizing resources and fostering global collaboration remain challenges.  
<sup>[5]</sup>

## Case Studies: Successful SDG Implementation

To effectively discuss the success of specific SDGs in specific countries, it's crucial to consider country-specific context on economic development, political stability, geographical location, and cultural factors which can significantly influence SDG progress. SDG interlinkages which contribute to progress in one SDG often impacts others, creating a complex web of dependencies. Reliable and comparable data is essential for accurate assessment. Progress is evaluated over time, and short-term



fluctuations might not reflect long-term trends. Examples of some countries demonstrating success in specific SDGs are:

### *SDG 3: Good Health and Well-being*

Costa Rica: Known for its universal healthcare system and emphasis on preventive care, Costa Rica boasts one of the highest life expectancies in the Americas<sup>[24]</sup>.

Costa Rica is a prime example of a country that has made significant strides in achieving SDG 3: Good Health and Well-being. Its universal healthcare system, strong emphasis on preventive care, and active promotion of healthy lifestyles have contributed to exceptional health outcomes. Torres<sup>[25]</sup> in his case study captured succinctly the success story of Costa Rica in SDG 3.

Key Factors Contributing to Costa Rica's Success include universal health coverage: Costa Rica's "Caja Costarricense de Seguro Social" (CCSS) provides comprehensive healthcare coverage to all residents, ensuring access to essential medical services. There is a focus on preventive care. The country prioritizes preventive care measures, such as regular check-ups, vaccinations, and disease screening, which help prevent illnesses and reduce healthcare costs. Costa Rica has implemented programs to promote healthy lifestyles, including physical activity, healthy eating, and tobacco control. The government has invested in healthcare infrastructure, ensuring adequate facilities, equipment, and trained personnel. Costa Rica has a strong network of community-based healthcare centers that provide accessible and affordable care, especially in rural areas.

In a recent case study, Castro<sup>[26]</sup> highlighted various factors that has afforded Costa Rica the level of success in SGD 3. Costa Rica consistently ranks among the countries with the highest life expectancy in the Americas. The country has significantly reduced infant and maternal mortality rates through improved access to healthcare and prenatal care. Costa Rica has achieved high immunization rates for preventable diseases. The country has made progress in reducing the prevalence of chronic diseases like heart disease, diabetes, and cancer.

Despite its achievements, Costa Rica faces ongoing challenges. Aging population, rising healthcare costs, and increasing rates of chronic diseases require continued attention. The country also needs to address disparities in health outcomes across different socioeconomic groups. Costa Rica's success in achieving SDG 3 serves as a model for other countries. By investing in universal health coverage, preventive care, and community-based healthcare, countries can improve the health and well-being of their populations.

Thailand has made significant strides in improving health outcomes, demonstrating progress towards SDG 3: Good Health and Well-being. This case study examines key factors contributing to Thailand's success, including its universal healthcare system, primary healthcare initiatives, and public health campaigns.

Thailand's universal health coverage system, the Universal Coverage Scheme (UCS), has played a pivotal role in improving access to healthcare services. The UCS provides subsidized healthcare to all Thai citizens, ensuring that everyone has the opportunity to receive essential medical treatment. There is a significant progress in reducing maternal and child mortality rates through initiatives like the Village Health Volunteer program

Thailand has invested heavily in primary healthcare, establishing a network of community health centers throughout the country. These centers provide basic healthcare services, preventive care, and health education, reducing the burden on hospitals and improving health outcomes in rural areas. Thailand has launched successful public health campaigns to promote healthy lifestyles, prevent diseases, and reduce health risks. These campaigns have focused on issues such as tobacco control, Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) prevention, and maternal and child health.

As key achievements, Thailand has significantly reduced infant and maternal mortality rates through improved access to healthcare, prenatal care, and family planning services. Life expectancy in Thailand has increased steadily over the years, reflecting improvements in overall health and well-being. The country has achieved high immunization rates for preventable diseases, protecting the population from outbreaks. Thailand has successfully implemented programs to control communicable diseases, such as malaria and tuberculosis.

Despite its achievements, Thailand faces ongoing challenges. The aging population, rising rates of non-communicable diseases, and disparities in health outcomes across different regions require continued attention.

Thailand's progress in achieving SDG 3: Good Health and Well-being is a testament to its commitment to providing universal healthcare and promoting public health. Thailand can continue to improve the health and well-being of its population by addressing ongoing challenges and building on its successes.

## *SDG 4: Quality Education*

Finland: Renowned for its high-quality education system, Finland consistently ranks among the top countries in terms of student performance. Finland has consistently ranked high in international education assessments, demonstrating significant progress towards SDG 4: Quality Education. Key factors Contributing to Finland's educational success include early childhood education. Finland places a strong emphasis on early childhood education, providing high-quality care and education for young children. This sets a solid foundation for future learning. Finnish teachers undergo rigorous training and continuous professional development, ensuring they are well-equipped to meet the needs of their students. Education decisions are made at the local level, allowing schools to adapt to the specific needs of their communities. Finland prioritizes equity and inclusion in education, ensuring that all students have equal access to quality learning opportunities. Finland's education system focuses on formative assessment and feedback, providing students with regular opportunities to improve their learning.

Key achievements include high Programme for International Student Assessment (PISA) scores. Finland consistently ranks among the top countries in the PISA, demonstrating high student performance. Finland has achieved high levels of equity in education, ensuring that all students, regardless of their socioeconomic background, have access to quality education. Finnish teachers are highly respected and well-qualified, contributing to the success of the education system. Finland promotes lifelong learning, encouraging individuals to continue their education throughout their lives.

Despite its successes, Finland faces challenges such as increasing diversity and the impact of technology on education. To maintain its position as a global leader in education, Finland must continue to adapt and innovate.

South Korea: There are rapid educational advancements, including high literacy rates and a strong emphasis on Science, Technology, Engineering and Mathematics (STEM) education. South Korea has emerged as a global leader in education, demonstrating significant progress towards SDG 4.

Key factors contributing to South Korea's educational success hinge on strong emphasis on education. South Korea places a high value on education, recognizing its importance for economic development and social mobility. The country's education system is highly competitive, with a focus on academic achievement and standardized testing. South Korea invests a significant portion of its Gross Domestic

Product (GDP) in education, ensuring adequate resources for schools and universities. Teachers in South Korea undergo rigorous training and professional development, ensuring they are well-prepared to teach their students. Parents in South Korea are highly involved in their children's education, providing support and encouragement at home.

As key achievements, South Korea consistently ranks among the top countries in the PISA, demonstrating high student performance. A large percentage of high school graduates go on to higher education, indicating strong educational attainment. South Korea has a well-developed vocational education system, providing students with practical skills and job training. The country promotes lifelong learning, encouraging individuals to continue their education throughout their lives.

Despite its successes, South Korea faces challenges such as increasing diversity and the impact of technology on education. To maintain its position as a global leader in education, South Korea must continue to adapt and innovate.

### *SDG 7: Affordable and Clean Energy*

Norway: Extensive use of hydropower and other renewable energy sources, leading to a low carbon footprint. Norway has been a global leader in the transition to renewable energy, making significant strides towards SDG 7: Affordable and Clean Energy. The country's abundance of hydropower resources, coupled with strategic policies and investments, has enabled it to achieve a high level of energy independence and sustainability.

The following key factors have contributed to Norway's Success. Norway's geography, with its abundant rivers and fjords, is ideal for hydropower generation. The country has harnessed its hydropower resources to meet a significant portion of its electricity demand. Norway has implemented a series of energy policies aimed at promoting renewable energy, reducing emissions, and ensuring energy security. These policies have included subsidies for renewable energy projects, carbon pricing mechanisms, and investments in energy infrastructure. Norway has been at the forefront of research and development in renewable energy technologies, such as wind power and solar energy. The country has successfully integrated these technologies into its energy mix. Norway has prioritized energy efficiency measures to reduce energy consumption and minimize waste. This has included investments in energy-efficient buildings, appliances, and transportation systems. Norway has played an active role in international cooperation on climate change and renewable

energy. The country has shared its expertise and supported developing countries in their transition to clean energy.

As key achievements, Norway has one of the highest shares of renewable energy in its energy mix, with hydropower accounting for a significant portion. The country has achieved a low carbon footprint, making significant progress towards its climate change goals. Norway's reliance on renewable energy has reduced its dependence on fossil fuels, ensuring energy security. The development of renewable energy has created jobs and stimulated economic growth.

Despite its successes, Norway faces challenges in maintaining its leadership in renewable energy. The country needs to continue investing in research and development, adapting to changing energy markets, and addressing the potential impacts of climate change on its energy infrastructure.

Denmark: A pioneer in wind energy, Denmark has successfully integrated renewable energy into its energy mix. Denmark has emerged as a global leader in renewable energy, demonstrating significant progress towards SDG 7: Affordable and Clean Energy. The country's commitment to sustainability, coupled with strategic policies and investments, has enabled it to achieve a high level of energy independence and decarbonization.

The following key factors have contributed to Denmark's Success. Denmark has a strong focus on wind power, with one of the highest shares of wind energy in its energy mix. The country has invested heavily in onshore and offshore wind farms. Denmark has prioritized energy efficiency measures to reduce energy consumption and minimize waste. This has included investments in energy-efficient buildings, appliances, and transportation systems. The Danish government has implemented a series of energy policies aimed at promoting renewable energy, reducing emissions, and ensuring energy security. These policies have included subsidies for renewable energy projects, carbon pricing mechanisms, and investments in energy infrastructure. Denmark has developed an ambitious "Energy Island" strategy, aiming to create artificial islands that can accommodate large-scale renewable energy projects and connect to the European energy grid. Denmark has played an active role in international cooperation on climate change and renewable energy. The country has shared its expertise and supported other countries in their transition to clean energy.

Key achievements include a high share of renewable energy in its energy mix, with wind power being a major contributor. The country has significantly reduced its greenhouse gas emissions, making progress towards its climate change goals. Denmark has reduced its dependence on fossil fuels,

ensuring energy security. The development of renewable energy has created jobs and stimulated economic growth.

Despite its successes, Denmark faces challenges in maintaining its leadership in renewable energy. The country needs to continue investing in research and development, adapting to changing energy markets, and addressing the potential impacts of climate change on its energy infrastructure.

### *SDG 11: Sustainable Cities and Communities*

**Singapore:** Known for its efficient public transportation, green spaces, and waste management practices, Singapore is a global model for sustainable urban development, demonstrating significant progress towards SDG 11. The country's strategic planning, innovative policies, and technological advancements have transformed it into a modern, livable, and sustainable city-state.

Key factors contributing to Singapore's success include urban planning which has focused on creating a compact, efficient, and walkable city. The government has implemented strict land-use regulations and promoted public transportation to reduce urban sprawl and congestion. Singapore has invested heavily in public transportation, developing a world-class metro system, bus network, and taxi services. This has reduced reliance on private cars and improved air quality. The government has prioritized the development of green spaces and parks, enhancing the quality of life for residents and promoting biodiversity. Singapore is known for its extensive network of parks and gardens. Singapore has implemented efficient waste management systems, including recycling programs and waste-to-energy facilities. The country has achieved a high recycling rate and minimized waste disposal. Singapore has embraced technology to create a smart city, using data analytics and digital solutions to improve urban services, enhance efficiency, and promote sustainability.

These efforts have resulted in key achievements where Singapore consistently ranks high in international surveys assessing quality of life, reflecting its efficient infrastructure, clean environment, and high standards of living. The country has successfully balanced economic growth with environmental sustainability, creating a thriving and livable city-state. Singapore has implemented measures to adapt to climate change, including coastal protection and flood prevention measures. The country has pioneered innovative urban solutions, such as vertical farming and sustainable building design.

Despite its successes, Singapore faces challenges such as rising population density, increasing energy consumption, and the need to adapt to climate change. The country must continue to invest in

sustainable development and innovate to address these challenges.

Curitiba, Brazil, is a renowned example of sustainable urban development, demonstrating significant progress towards SDG 11. The city's innovative urban planning, transportation systems, and environmental initiatives have transformed it into a model for sustainable cities worldwide.

Key factors contributing to Curitiba's Success are: Curitiba's urban planning has focused on creating a compact, walkable city with a strong emphasis on public transportation. The city has implemented a comprehensive network of bus rapid transit (BRT) systems, reducing reliance on private cars and improving mobility. Curitiba's BRT system, known as the "Tube Train," is a global model for efficient and sustainable urban transportation. The system features dedicated bus lanes, modern buses, and integrated ticketing, providing a reliable and affordable transportation option for residents. The city has prioritized urban forestry and green spaces, planting millions of trees and creating parks and green belts. These green areas contribute to air quality, biodiversity, and the overall quality of life. Curitiba has implemented a comprehensive waste management system, including curbside recycling and composting programs. The city has also developed innovative waste management technologies to reduce landfill waste. Curitiba has emphasized social inclusion and community participation in urban planning and development. The city has engaged residents in decision-making processes and implemented programs to address social inequalities.

Key achievements include focus on public transportation and urban green spaces which has led to a significant improvement in air quality. The BRT system has helped alleviate traffic congestion and reduce travel times. Curitiba's sustainable development initiatives have improved the quality of life for its residents, providing access to green spaces, affordable transportation, and basic services. Curitiba has received global recognition for its innovative urban planning and sustainable practices.

Curitiba faces ongoing challenges, such as increasing population density, resource scarcity, and the impacts of climate change. The city must continue to adapt and innovate to address these challenges and maintain its sustainability.

## **Case Study: Regions with Challenges in Implementing the SDGs**

Sub-Saharan Africa (SSA) faces significant challenges in achieving the SDGs, due to a confluence of factors including poverty, inequality, conflict, and limited infrastructure. Despite its economic growth, South Asia faces significant challenges in achieving the SDGs. This region is characterized by

a growing population, poverty, inequality, and environmental degradation, which hinder progress on several SDGs. The Middle East and North Africa (MENA) region faces complex challenges in achieving the SDGs. Political instability, conflict, economic disparities, and environmental degradation are key factors hindering progress in this region.

High levels of poverty and inequality persist in many SSA countries, with limiting access to essential services and opportunities. Political instability, civil conflicts, and natural disasters disrupt development efforts and divert resources. SSA is particularly vulnerable to the impacts of climate change, such as droughts, floods, and extreme weather events, which can exacerbate existing challenges. Inadequate infrastructure, including roads, energy, and healthcare facilities hampers development and limits access to essential services. Weak governance, corruption, and lack of transparency can hinder the effective implementation of policies and programs related to the SDGs. There are similar challenges in South Asian countries. High levels of poverty and inequality persist in many South Asian countries. The region is experiencing rapid urbanization, leading to infrastructure strain, housing shortages, and environmental challenges. South Asia is vulnerable to the impacts of climate change, such as extreme weather events, rising sea levels, and air pollution. Social and cultural barriers, such as gender discrimination, caste-based discrimination, and religious intolerance, can hinder progress on certain SDGs. Many MENA countries have experienced political instability, civil unrest, and armed conflicts, which have disrupted development efforts and displaced populations. The region is characterized by significant economic disparities, with some countries experiencing rapid economic growth while others struggle with poverty and unemployment. Many MENA countries face severe water scarcity, which impacts agriculture, energy production, and human development. Overgrazing, deforestation, and pollution contribute to environmental degradation in the region, affecting biodiversity and ecosystem services. The MENA region has been grappling with refugee crises, which place additional strain on resources and infrastructure.

Specific SDGs with limited progress in these regions are SDG 1: No Poverty. Poverty rates remain high in many SSA countries, with millions living below the poverty line. SDG 2: Zero Hunger. Food insecurity and malnutrition are persistent challenges, particularly in conflict-affected areas. SDG 3: Good Health and Well-being. Access to healthcare is limited, especially in rural areas, leading to high rates of maternal and child mortality. SDG 4: Quality Education. Education quality and equity remain significant challenges, with many children unable to access primary education. SDG 5: Gender Equality. Women and girls face discrimination and limited opportunities in many SSA countries.



To overcome these challenges and accelerate progress on the SDGs, the regions need to improve governance, reduce corruption, and enhance the capacity of institutions to implement effective policies. They should invest in human development by prioritizing investments in education, healthcare, and social protection programs. The countries should implement strategies to combat insecurity and create a conducive environment for development. It is important to promote sustainable development by implementing policies and programs that address environmental challenges and promote sustainable practices. They should seek partnerships with international organizations and other countries to mobilize resources and support development efforts. Efforts should be made to implement policies to reduce inequality and ensure that everyone has equal opportunities to participate in development. These regions should support sustainable agricultural practices to improve food security and resilience to climate change.

## **Are We on Track for the SDGs by 2030?**

The short answer is no, the world is not currently on track to achieve all 17 SDGs by 2030. The 2023 SDG Report by UN DESA paints a sobering picture, highlighting significant challenges and setbacks<sup>[5]</sup>. A breakdown of the current situation indicates that while some goals have witnessed advancements (e.g., poverty reduction, access to education), others face significant hurdles (e.g., gender equality, climate change). Global crises like the pandemic, rising inequalities, and geopolitical conflicts further impede progress. A significant funding gap exists, particularly in developing countries, hindering implementation of SDG-related programs. The UN Secretary-General's 2023 SDG Progress Report warns of a possible "derailment" of the SDGs agenda unless course correction and increased efforts occur<sup>[5]</sup>. The World Bank estimates that achieving the SDGs in developing countries requires an additional \$4 trillion annually<sup>[27]</sup>.

However, there's still hope. Increased global commitment, innovative solutions, and a focus on accelerating progress can still get us back on track. The report emphasizes the need for: Enhanced international cooperation and resource mobilization; Strengthening national development strategies aligned with the SDGs; Fostering innovation and technological advancements for sustainable solutions; Engaging stakeholders (governments, businesses, civil society) in collaborative action.

## Potential Solutions and Increased Efforts for Achieving the SDGs

The feasibility of achieving all SDGs by 2030 hinges on our ability to address existing challenges with innovative solutions and increased efforts. In the area of financing the SDGs, we must explore innovative financing mechanisms beyond traditional aid, such as: Attract private sector investment by demonstrating the social and environmental benefits alongside financial returns; Convert developing countries' debt into investments in sustainable development projects; Implement carbon pricing mechanisms to incentivize clean energy and discourage emissions; Developed nations need to fulfill their existing ODA commitments and explore innovative financing models.

In tackling inequality, we should: Implement progressive taxation systems that redistribute wealth and invest in social safety nets. Promote equal opportunities in education, healthcare, and employment. Governments need to prioritize policies that address the root causes of inequality, such as discriminatory practices and lack of access to resources.

To Combating Climate Change; Accelerate the transition to renewable energy sources and invest in energy efficiency. Develop climate-resilient infrastructure and disaster preparedness strategies. Governments and businesses need to set more ambitious emissions reduction targets and invest heavily in clean technologies. Public awareness campaigns can encourage individual action towards a lower carbon footprint.

Building peace and resilience will support peacebuilding initiatives and conflict prevention strategies. Strengthen governance and institutions in fragile states to foster sustainable development. International cooperation is crucial for conflict resolution and post-conflict reconstruction. Investing in early warning systems and addressing the root causes of conflict can prevent violence.

Leveraging on innovation and technology by investing in research and development (R&D) for clean technologies, sustainable agriculture, and healthcare innovations will increase the desired progress. Promote partnerships between public and private sectors to leverage technology for good. Direct research funding towards solutions for specific challenges related to the SDGs. Encourage knowledge sharing and technology transfer between developed and developing countries. Invest in education campaigns that effectively communicate the SDGs and their benefits. Engage diverse communities in developing and implementing SDG-related strategies. Utilize social media and other communication channels to raise awareness about the SDGs. Support educational programs that promote sustainability and responsible citizenship.

### **Feasibility with Increased Efforts:**

While achieving all SDGs in their entirety by 2030 might be challenging, significant progress remains feasible with the solutions and increased efforts outlined above. Collective action, innovative thinking, and a shift in priorities can make a world of difference.

## **Potential Scenarios for the SDGs Beyond 2030: A Glimpse into the Future**

The year 2030 marks the deadline for achieving the SDGs. However, the journey towards a more sustainable future doesn't end there. Let us examine some potential scenarios for the SDGs beyond 2030:

### *Scenario 1: A Sustainable Future (The Ideal Outcome)*

This scenario depicts a world where significant progress has been made on the SDGs. Renewable energy dominates energy production, poverty is significantly reduced, and access to quality education and healthcare is widespread. Innovation has driven solutions for climate change mitigation and adaptation, and global cooperation fosters a more peaceful and equitable world.

Key Drivers are increased global commitment, strong political will, successful implementation of innovative solutions and continued technological advancements. The challenges include overcoming the remaining hurdles like resource gaps, ingrained inequalities, and potential environmental tipping points. This has a political impact where there will be a more prosperous, healthy, and sustainable future for all, with a thriving global economy and a healthier planet.

### *Scenario 2: A Fragmented World (Stagnation or Backsliding)*

This scenario portrays a world where progress on the SDGs stagnates or even regresses. Geopolitical tensions escalate, hindering international cooperation. Climate change impacts worsen, leading to resource scarcity and conflict. Inequalities widen, further hampering development efforts.

Key drivers for this scenario are failure to address current challenges, increased nationalism and isolationism, and insufficient resources for sustainable development. The challenges here are potential for cascading crises related to climate change, resource scarcity, and social unrest. The

political impact will be a world facing significant challenges to human well-being and environmental sustainability.

### *Scenario 3: A Differentiated World (Uneven Progress)*

This scenario portrays a world where progress on the SDGs varies significantly across different regions and countries. Some nations achieve significant advancements towards sustainability, while others struggle to meet basic needs. Technological advancements benefit some, while others are left behind.

Key Drivers here are uneven distribution of resources, differing levels of political will, and varying capacities for innovation and technological adoption. Challenges include exacerbating existing inequalities between nations and potential for social unrest within countries that lag behind. The potential impact is a world with pockets of success stories in sustainability, but also with persistent challenges around poverty, inequality, and environmental degradation.

The specific scenario that unfolds depends on the choices we make today. To increase the chances of achieving a sustainable future, the global community needs to maintain the focus and urgency around the SDGs beyond 2030. The SDGs framework might need revision to reflect new challenges and emerging priorities. Enhanced international cooperation, knowledge sharing, and resource mobilization are essential.

## **Will the SDGs be revised or expanded upon?**

The question of revising or expanding the SDGs is a topic of ongoing discussion. The 17 SDGs and their 169 targets were adopted by UN member states in 2015 with a deadline of 2030 for achievement. Arguments for revision hinge on new global challenges, like pandemics and technological advancements which might necessitate incorporating new goals or targets. Some argue that certain goals and targets lack specificity or clear metrics for measurement, hindering progress tracking. The SDGs might not fully address the unique challenges faced by different regions or countries, suggesting a need for adaptation.

Arguments Against Revision focus on opening the framework for revision which could lead to mission creep and dilute efforts towards achieving the existing goals. Many countries are still struggling to implement the current framework effectively, and revision might divert resources. Reaching a new global consensus on revised or expanded goals could be a lengthy and challenging process.

There is potential for a Middle Ground. The framework could undergo a review process to consider adjustments to targets or indicators without fundamentally changing the core goals. Countries and regions could develop context-specific strategies aligned with the overall SDG framework. New global initiatives could be developed to address emerging challenges without necessarily revising the SDGs. However, the ultimate decision on whether or not to revise or expand the SDGs will likely involve negotiations and consensus building among UN member states.

The pursuit of sustainable development is a dynamic process, and as we navigate existing challenges, new priorities are likely to emerge. The rapid advancement of technologies like artificial intelligence, robotics, and bioengineering presents both opportunities and challenges. New priorities might include establishing ethical frameworks for technology development and ensuring equitable access to its benefits. A growing recognition of the interconnectedness between human and planetary well-being could elevate "planetary health" as a critical priority. This could involve increased focus on biodiversity conservation, ecosystem restoration, and mitigating climate change beyond just its impact on human societies. Mental health has historically received less attention in development discussions. However, its growing recognition as a crucial factor in individual and societal well-being could lead to it becoming a more prominent SDG priority. The increasing frequency and intensity of extreme weather events highlight the need for stronger disaster risk reduction strategies and building resilience in communities around the world. As resource scarcity becomes a more pressing issue, promoting a circular economy that focuses on resource efficiency, waste reduction, and product lifecycles might become a higher priority. The complex challenges of the 21st century require effective global governance and collaboration. Strengthening international institutions and fostering global partnerships could be a future priority for ensuring coordinated action towards sustainability.

These are just some potential future priorities, and their specific nature will depend on evolving global circumstances. However, it's important to be adaptable and constantly re-evaluate our goals and strategies to ensure continued progress towards a sustainable future for all.

## A Call for Global Commitment to a Sustainable Future



Figure 2. Decision tree for recommended actions to achieve the SDGs

The decision tree diagram (Figure 2) provides a structured visual representation of recommended actions to overcome challenges in achieving the SDGs<sup>[28]</sup>. It is organized into six thematic branches:

**Poverty and Inequality:** Focuses on implementing social protection systems and creating equitable economic opportunities.

**Hunger and Food Security:** Highlights the need for sustainable agricultural practices, improved food distribution systems, and access to markets for smallholders.

**Education:** Addresses barriers to enrollment and emphasizes the importance of quality education through better resources, teacher training, and innovative learning methods.

**Clean Water and Sanitation:** Suggests strategies to combat water scarcity, expand infrastructure, and establish sustainable water management practices.

**Climate Action:** Proposes actions for reducing greenhouse gas emissions and preparing communities for climate impacts through adaptation and resilience planning.

Partnerships and Financing: Encourages mobilizing financial resources, fostering inclusive partnerships, and ensuring the effective use of funds.

Each branch contains decision points and corresponding actionable steps tailored to specific challenges. By following these pathways, stakeholders can identify targeted interventions, foster collaboration, and promote sustainable progress toward achieving the 2030 Agenda.

This decision tree is an essential tool for policymakers, educators, and advocates to visualize and prioritize strategies for SDG implementation.

The state of our planet and the well-being of humanity hang in the balance. The SDGs offer a roadmap, a beacon of hope, a blueprint for a future where we can thrive together. Achieving them requires a global commitment – a collective effort that transcends borders, cultures, and ideologies.

We've witnessed progress. Poverty rates have declined, access to education has expanded, and innovation is sparking solutions for climate change and resource scarcity. Yet, the challenges remain significant. Inequality festers, the climate crisis escalates, and conflicts disrupt development.

This is a call to action for all of us. To world leaders: Champion the SDGs on the global stage. Increase investments, foster collaboration, and prioritize policies that support sustainable development. To businesses: Integrate sustainability into your core practices. Invest in renewable energy, adopt responsible sourcing, and prioritize social well-being alongside profits. To educators: Empower the next generation with the knowledge and skills to build a sustainable future. Integrate the SDGs into your curriculum and foster critical thinking about environmental and social challenges. To individuals: Make conscious choices in your daily lives. Reduce your waste, conserve resources, and support sustainable businesses. Use your voice to advocate for change. Together, we can create a ripple effect. Imagine a world powered by clean energy, where food nourishes all, and education empowers every child. Imagine a world where peace prevails and nature thrives. This is the future we can achieve by working together. Let the SDGs be our guiding stars. Let's hold ourselves and each other accountable. Let's harness the power of innovation and collaboration. Let's rise to the challenge and build a future where the well-being of people and planet are intertwined.

## References

1. <sup>a</sup>, <sup>b</sup>UN DESA. (2015). "Sustainable Development Goals". United Nations Department of Economic and Social Affairs [UN DESA]. <https://sdgs.un.org/goals>.

2. <sup>△</sup>IPBES (Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services). (2021). "The IPBES methodological assessment on the diverse conceptualisations of multiple values of nature and their integration". <https://www.ipbes.net/the-values-assessment>.
3. <sup>△</sup>ICTSD (International Centre for Trade and Sustainable Development). (2016). "Implementing the SDGs: Accountability for a Transformative Agenda". <https://sustainabledevelopment.un.org/content/documents/10329Business%20and%20Industry.pdf>.
4. <sup>△</sup>Sachs JD (2012). "From Millennium Development Goals to Sustainable Development Goals". *The Lancet* 379(9832): 2206–2211. [https://www.thelancet.com/journals/a/article/PIIS0140-6736\(12\)60685-0/fulltext](https://www.thelancet.com/journals/a/article/PIIS0140-6736(12)60685-0/fulltext).
5. <sup>a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x</sup>UN DESA (United Nations Department of Economic and Social Affairs). (2023). "The Sustainable Development Goals Report 2023: Special Edition". <https://unstats.un.org/sdgs/report/2023/>.
6. <sup>a, b</sup>World Bank. (2020). "Poverty Reduction". <https://www.worldbank.org/en/topic/poverty>.
7. <sup>△</sup>World Bank. (2022). SDG 6: Clean Water and Sanitation. <https://datatopics.worldbank.org/sdgdatalatlas/goal-6-clean-water-and-sanitation/?lang=en>.
8. <sup>a, b</sup>UNESCO Institute for Statistics. (2020). "Global Education Monitoring Report 2020: COVID-19 and education: Disruption and opportunity". <https://unesdoc.unesco.org/ark:/48223/pf0000373718>.
9. <sup>△</sup>UNDP (2019). *Educate Girls: A Community–Driven Initiative in India*. United Nations Development Programme. Retrieved from <https://www.undp.org>.
10. <sup>△</sup>UN Women. (2023). "The urgency of transforming gender relations to achieve the Sustainable Development Goals".
11. <sup>△</sup>International Labour Organization (ILO). (2022). "Global Wage Report 2022–23: Wage inequality in the time of COVID–19". <https://www.aranagenzia.it/attachments/article/13376/ILO%20-%20Global%20Wage%20Report%202022%E2%80%9323.pdf>.
12. <sup>△</sup>Intergovernmental Panel on Climate Change (IPCC). (2022). *Climate Change 2022: Impacts, Adaptation, and Vulnerability*.
13. <sup>△</sup>International Energy Agency (IEA). (2023). *World Energy Outlook 2023*. [<https://www.iea.org/reports/world-energy-outlook-2023>]
14. <sup>a, b</sup>UNCTAD. (2023). *How to Narrow the Investment Gap for Global Goals*. Retrieved from <https://unctad.org/news/how-narrow-investment-gap-global-goals>.



15. <sup>a, b</sup>DESA. (2024). *Financing for Sustainable Development Report 2024*. Retrieved from <https://desapublications.un.org>.
16. <sup>^</sup>OECD (Organisation for Economic Co-operation and Development). (2022). *Development Assistance Committee (DAC) Statistics*.
17. <sup>a, b, c</sup>World Bank. (2021). "Governance and Anticorruption". <https://www.worldbank.org/en/topic/governance/overview>.
18. <sup>^</sup>UNCTAD (United Nations Conference on Trade and Development). (2022). *Bottlenecks to Access SDG Finance for Developing Countries*.
19. <sup>^</sup>World Bank. (2023). *Fragility, Conflict and Violence*.
20. <sup>^</sup>UNDP (2023). "Pathways to Peace: The Role of Sustainable Development in Preventing Conflict and Building Peace". (United Nations Development Programme). <https://www.undp.org>.
21. <sup>^</sup>UNHCR (United Nations High Commissioner for Refugees). (2023). *Global Trends Report: World Refugee Survey 2022*.
22. <sup>^</sup>UN Environment Programme (UNEP). (2022). "Environment, Peace and Security: A Holistic Approach to Conflict Prevention and Sustainable Development".
23. <sup>a, b</sup>UNESCO. (2018). "Education for Sustainable Development Goals". <https://unesdoc.unesco.org/ark:/48223/pf0000371706>.
24. <sup>^</sup>Bala A (2022). "Costa Rica prioritizes health". *International Monetary Fund (IMF)*. [www.imf.org](http://www.imf.org).
25. <sup>^</sup>Torres FM (2013). "UNESCO Studies Series 14 Costa Rica Case Study: Primary Health Care Achievement and Challenges within the framework of the Social Health Insurance". *The World Bank, Washington D C*.
26. <sup>^</sup>Castro FL (2020). "Costa Rican Health Care System". *Conference: Costa Rican Health Care System 2020*. doi:10.13140/RG.2.2.20430.08009.
27. <sup>^</sup>World Bank. (2023). *Financing for Sustainable Development Report 2023*.
28. <sup>^</sup>United Nations (2015). *Transforming our World: The 2030 Agenda for Sustainable Development*. Retrieved from <https://sdgs.un.org/2030agenda>.

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