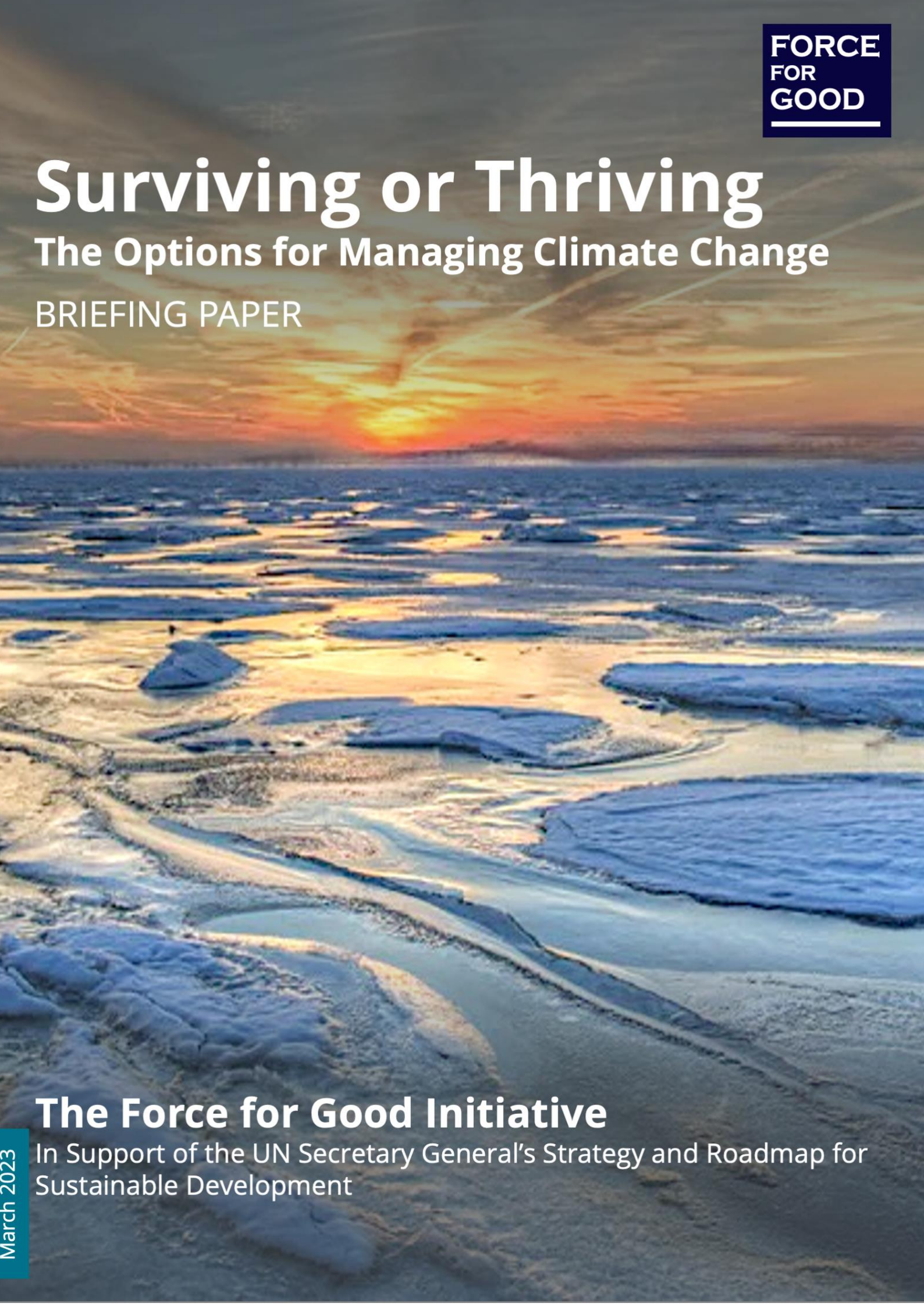


FORCE FOR GOOD

Surviving or Thriving

The Options for Managing Climate Change

BRIEFING PAPER

The Force for Good Initiative

In Support of the UN Secretary General's Strategy and Roadmap for Sustainable Development

March 2023

SURVIVING OR THRIVING
The Options for Managing Climate Change

About Force for Good

Force for Good is an impact-driven institution focused on transforming capitalism for a secure, sustainable, and superior future. The organization seeks to influence the deployment of capital to address major global issues and opportunities in this regard. Force for Good engages key stakeholders, conducts research, publishes thought leadership and has an active outreach program to major global financial institutions as well as development banks, NGOs, and other stakeholders with the potential to act as a force for good in the world. It works with major institutions to accelerate their efforts to tackle increasingly complex and interrelated challenges like climate change, social inclusion, and sustainable development in the spirit of encouraging collaboration and spurring a race to the top in making an impact for good in the world.

The Force for Good Initiative is a project of the F4G Foundation, a non-profit limited liability company incorporated under the laws of England and Wales.

F4G/006
A Force for Good publication
ISBN 978-1-7392590-3-7
ISBN (e-pub) 978-1-7392590-4-4
ISBN (pdf) 978-1-7392590-5-1

The IPCC's Message is Very Clear

"You have built the case, setting out the science of climate change and the urgency for climate action. The evidence has been clear, convincing, and irrefutable. The facts are not in question, but our actions are. It is not too late, as you have shown…

Leaders must understand the enormous consequences of delay and the enormous dividends from making the tough but essential choices to accelerate the phasing out of fossil fuels and close the emissions gap, to race to a carbon-free, renewables future, and to secure climate justice, helping communities adapt and build resilience to the worsening impacts."

UN Secretary-General António Guterres

Opening Speech 58th Session of the Intergovernmental Panel on Climate Change, March 13, 2023

"It is clear that man-made climate change is a threat to the health of our planet and to the wellbeing of all species inhabiting it…

The extent and magnitude of climate change impacts are larger than estimated in previous assessments. Widespread deterioration of ecosystem structure and function, resilience, and natural adaptive capacity, as well as shifts in seasonal timing have occurred due to climate change, with adverse socioeconomic consequences…

Maintaining planetary health is essential for human and societal health and a pre-condition for climate-resilient development."

IPCC Chair Hoesung Lee

Remarks During the 2nd World Ocean Summit Asia-Pacific, Nov 2022

Executive Summary

Choices, Future, and Climate Consequences

I. The IPCC Includes Five Key Scenarios for the Future. The UN Intergovernmental Panel on Climate Change's Sixth Assessment Report includes five 'Shared Socioeconomic Pathways' (SSPs) which describe alternative trajectories for the world in terms of political, economic, and social developments to accompany future climate projections.

II. The Scenarios Describe a Sustainable Path, and Divergence from that Based on Political, Social and Economic Choices The SSPs include alternative futures for the world based on moving to a sustainable path, a 'business as usual' scenario, a world of increasing rivalry focused on nationalism and security, a world of increasingly unequal progress, and a future focused on growth using any means necessary, including fossil fuels.

III. Each Scenario, if Considered as a Choice, Has a Very Different Feasibility, Risk Profile, and Potential Outcome. The scenarios lead to very different worlds in 2100, with critical factors like global GDP or GHG emissions varying by up to c.4x, significantly impacting the humankind's ability to mitigate or adapt to inevitable climate impacts. The feasibility and risks associated with each of the pathways need to be considered carefully by policy makers weighing long term strategic options.

IV. These Scenarios Provide Essential Inputs for Decision Makers to Understand the Consequences of their Choices. These scenarios provide an indication to policy makers, businesses, investors, NGOs, and individuals on how their choices can affect not just climate change, but the overall trajectory of the world in the 21st Century.

V. Ambitious Sustainability and Growth Scenarios May Appear Attractive but Rely on Potentially Unrealistic Optimism. The more optimistic scenarios (SSP1 "Sustainability" and SSP5 "Fossil-fueled Development") rely on levels of global cooperation and inclusion that the world has not yet seen and unrealistic give current global trends, unless geopolitics changes significantly.

VI. The Middle Path Between Them Appears Susceptible to being Derailed by Real World Events and Shocks. The achievability of the middle scenario (SSP2 "Middle of the Road") on the other hand faces significant challenges from the interrelated geopolitical and economic shocks that the world has experienced in the third decade of the 21st century, such as pandemic, war and recession, placing the world at risk of sliding into other scenarios defined by rivalry or inequality.

VII. These Scenarios Throw Light on Dangerous Choices that Some States Have Already Implictly Made. The SSPs include alternative futures for the world based on moving to a sustainable path, a 'business as usual' scenario, a world of increasing rivalry focused on nationalism and security, a world of increasingly unequal progress, and a future focused on growth using any means necessary, including fossil fuels.

VIII. Risks, Realism and Rationality Point to a Path Aligned on Scaled Investment in Solutions and Sustainable Growth. Given these risks, perhaps the best strategy for the world it to attempt to claw back the global progress and alignment lost in recent years to place the world on a middle path (much like SSP2), while investing heavily in technological innovation to potentially deliver a breakthrough that makes a sustainable green transition at scale possible.

Introduction

A World of Choices, but with a Closing Window

Last year, the world suffered devastating natural disasters; Europe saw extreme heatwaves in that killed over 16,000 people, the US was hit by a major hurricane, causing in excess of US$50 billion in damage, and floods in Pakistan impacted an estimated 33 million people and destroyed nearly one million homes.[i] It is estimated that natural disasters caused US$313 billion in global economic loss during, of which only approximately one-third was insured.[ii]

The UN IPCC's Sixth Assessment Report issued last year painted a somber picture for the world in terms of its current climate trajectory, concluding that massive and immediate cuts in greenhouse gas emissions are required to avoid warming of 1.5 °C or 2 °C, and that even within these limits increasing heat waves, more violent storms, more frequent droughts, and shorter winters were likely to occur for decades to come. In addition to a series of climate models, the report also incorporated a collection of scenarios, named Shared Socioeconomic Pathways (SSPs), that explored a range of possible climate futures for the world.

Developed over several years by teams of climate scientists, economists, and energy systems modelers, the SSPs lay out a set of alternative trajectories for the world, describing plausible major global developments, including population and economic growth projections as well as technological and geopolitical trends, impacting both global emissions and the world's capacity to reduce or adapt to them.

The UN IPCC's Sixth Assessment Report issued last year painted a sombre picture for the world in terms of its current climate trajectory, concluding that massive and immediate cuts in greenhouse gas emissions are required to avoid warming of 1.5 °C or 2 °C, and that even within these limits increasing heat waves, more violent storms, more frequent droughts, and shorter winters were likely to occur for decades to come

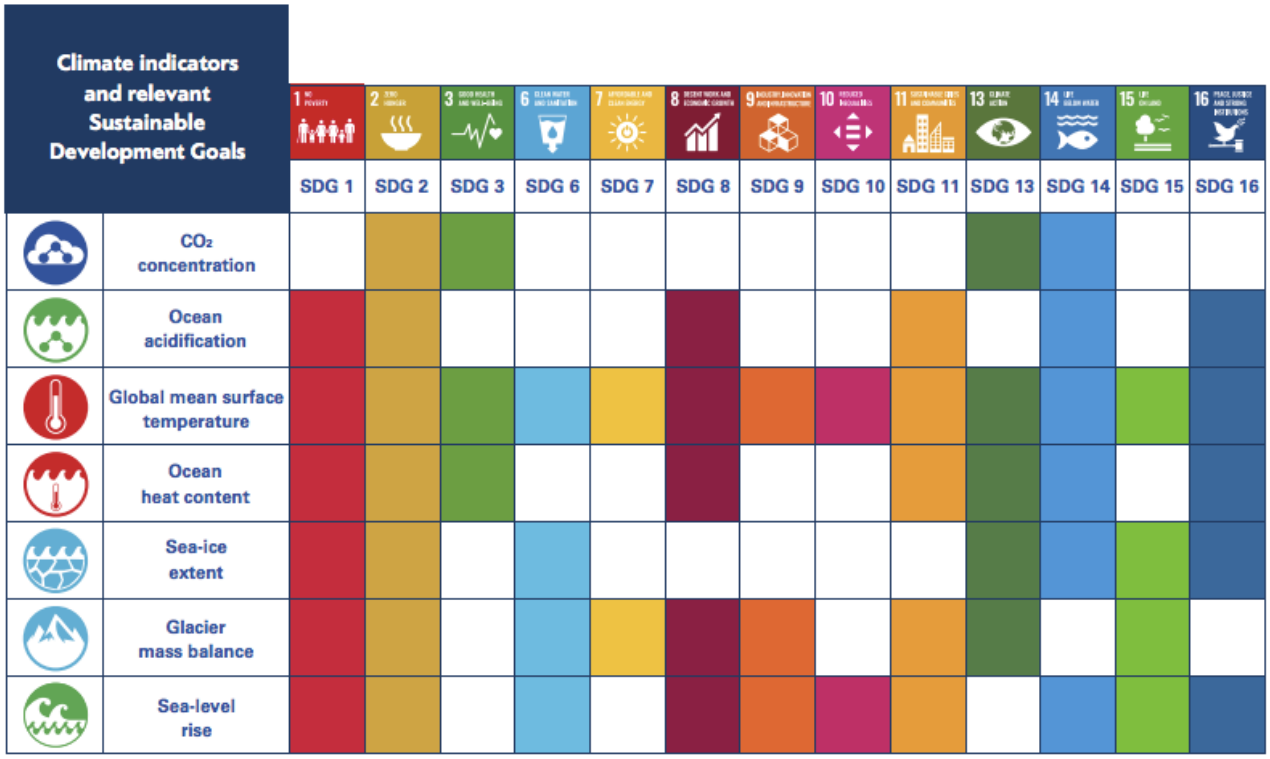
For the first time, the SSPs make the socio-economic factors related to climate change explicit, rather than hidden in the emissions projections that previous models assumed as an input. This allows for a better understanding of how people and economic activity are affected by climate change and climate policies. Although primarily conceived as a tool for researchers, the SSPs can also be invaluable to global leaders, describing in detail the potential long-term consequences for the world of many of the choice facing leaders today.

Alternative Pathways for the Future

Climate change plays a critical role in the UN's 17 Sustainable Development Goals. Captured explicitly as SDG13: Climate Action, it is a threat multiplier (or amplifier) with the potential to negatively impact many of the interconnected SDGs. Through a series of complex and in many cases interdependent mechanisms, climate change affects nearly all the SDGs, regardless of whether they relate to people, the planet, or the creation of broad based and inclusive prosperity. Indeed, in part because of this multiplier effect an increasing number of people perceive climate change as the most critical challenge of the decade, if not the 21st Century.[iii]

The IPCC has been one of the world's leading institution advancing knowledge and awareness about global climate change and its links to human activities. Since its inception in 1988 the IPCC has published a series of assessment reports based on a comprehensive multi-year review of the latest climate science, designed to inform government leaders about the latest knowledge on climate change, as well on possible policy response options.

Figure 1: Climate Change Impact on Sustainable Development Goals



Source: World Meteorological Institute

The findings of the Second Assessment Report in 1995 for example provided important material for governments in the run-up to the adoption of the Kyoto Protocol in 1997, while the Fifth Assessment Report, released in 2014, provided the basis for negotiations of the 2015 Paris Agreement in the following year.

The release of the Sixth Assessment Report in 2022 was widely covered by international media as were some of its key findings including that the world's current trajectory is set to significantly overshoot the 1.5c temperature increase limit agreed in the Paris Agreement, and that the world needs to accelerate its transition away from carbon energy sources. These findings largely confirm and build on the findings of previous reports. An important novel feature of the report that was however largely overlooked was the integration of geopolitics into the IPCC's climate modelling work.

While previous reports focused largely on modelling different emission trajectories for the world, the sixth report begins with five scenarios, or SSPs, for the world's overall development, describing alternative pathways for future society based on global social, demographics and economic changes through the end of the century. The SSPs contain both narratives and quantitative information and each makes assumptions of how population, education, energy and land use, and technology may change over the next century. The resulting climate impacts of the five SSPs lead to very different worlds in terms of the global climate at the end of the century, ranging from worlds in which the Paris Goals are met to ones in which increasing parts of the globe are rendered uninhabitable for humankind.

While previous reports focused largely on modelling different emission trajectories for the world, the sixth report describes five scenarios, or SSPs, for the world's overall development, describing alternative pathways for future society based on global social, demographics and economic changes through the end of the century

Importantly the SSPs themselves do not include assumptions about future climate policies, instead providing the baseline worlds in which any policies will be implemented. The report states that: "Each pathway is an internally consistent, plausible and integrated description of a socio-economic future, but these socio-economic futures do not account for the effects of climate change, and no new climate policies are assumed."

What the SSPs powerfully illustrate however are worlds in which different climate policies would be more or less difficult (or in some cases, even impossible) to implement, specifically differentiating between climate action focused on mitigation and adaptation. Mitigation is centered around managing the causes of climate change by preventing or reducing GHG emissions or by capturing existing atmospheric carbon. Adaptation on the other hand focuses on managing the effects of climate change, building social and economic resilience to reduce the impact of inevitable change.

The resulting climate impacts of the five SSP scenarios lead to very different worlds in terms of the global climate at the end of the century, ranging from worlds in which the Paris Goals are met to ones in which increasing parts of the globe are rendered uninhabitable for humanity

Five Potential Scenarios for the Future

As a result, the SSPs are a potentially powerful tool not just for climate modelers but for policy makers as well, who need to balance the often-competing demands of economic growth, security, social justice, and environmental protection, among others. By describing and quantifying different worlds and their likely impact on all these factors, the SSPs provide a basis for examining how different policies might impact not just the global climate but also critical factors like global trade, migration, global cooperation, innovation, and the adoption of new technologies and ultimately peace, prosperity, and freedom in the world.

Each of the five SSPs and their impact on potential climate policies is described in summary below.

SSP1: Sustainability – Taking the Green Road; Shift to a Global Sustainable Path

Description.[iv] "The world shifts gradually, but pervasively, toward a more sustainable path, emphasizing more inclusive development that respects perceived environmental boundaries. Management of the global commons slowly improves, educational and health investments accelerate the demographic transition, and the emphasis on economic growth shifts toward a broader emphasis on human well-being. Driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries. Consumption is oriented toward low material growth and lower resource and energy intensity."

Implications for climate policy. The positive developments in both environmental and human sustainable development provide a strong basis for enacting global climate mitigation policies at scale, with countries collaborating to deploy the most effective adaptation measures locally where most required.

SSP2: Middle of the Road; Playing Out the Historic (Mediocre) Trendline

Description.[v] "The world follows a path in which social, economic, and technological trends do not shift markedly from historical patterns. Development and income growth proceeds unevenly, with some countries making relatively good progress while others fall short of expectations. Global and national institutions work toward but make slow progress in achieving sustainable development goals. Environmental systems experience degradation, although there are some improvements and overall the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain."

Implications for climate policy. Slow but steady progress towards decarbonization and sustainable development provide the technological innovation, wealth creation and the potential for global

alignment required to manage scaled climate mitigation and adaptation projects, albeit over extended periods and unevenly distributed.

SSP3: Regional Rivalry – A Rocky Road; Nationalism and Security

Description.[vi] "A resurgent nationalism, concerns about competitiveness and security, and regional conflicts push countries to increasingly focus on domestic or, at most, regional issues. Policies shift over time to become increasingly oriented toward national and regional security issues. Countries focus on achieving energy and food security goals within their own regions at the expense of broader-based development. Investments in education and technological development decline. Economic development is slow, consumption is material-intensive, and inequalities persist or worsen over time. Population growth is low in industrialized and high in developing countries. A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions."

Implications for climate policy. The emphasis on security in this scenario provides a significant alternative call on global resources to compete with sustainability, while the high degree of nationalism and interstate competition provide a barrier to the political coordination required for scaled climate action. As a result, both climate adaptation and mitigation face significant challenges globally.

SSP4: Inequality – A Road Divided; Disunited, Unequal Progress Across World

Description.[vii] "Highly unequal investments in human capital, combined with increasing disparities in economic opportunity and political power, lead to increasing inequalities and stratification both across and within countries. Over time, a gap widens between an internationally-connected society that contributes to knowledge- and capital-intensive sectors of the global economy, and a fragmented collection of lower-income, poorly educated societies that work in a labor intensive, low-tech economy. Social cohesion degrades and conflict and unrest become increasingly common. Technology development is high in the high-tech economy and sectors. The globally connected energy sector diversifies, with investments in both carbon-intensive fuels like coal and unconventional oil, but also low-carbon energy sources. Environmental policies focus on local issues around middle and high-income areas."

Implications for climate policy. High rates of technological development, and the build-out of low carbon energy sources particularly in high growth economies allow for effective climate mitigation policies. However, across much of the still impoverished Global South even basic climate adaption actions will remain unaffordable and therefore out of reach.

SSP5: Fossil-fueled Development – Taking the Highway; Unfettered Global Growth

Description. "This world places increasing faith in competitive markets, innovation, and participatory societies to produce rapid technological progress and development of human capital as the path to sustainable development. Global markets are increasingly integrated. There are also strong investments in health, education, and institutions to enhance human and social capital. At the same time, the push for economic and social development is coupled with the exploitation of abundant fossil fuel resources and the adoption of resource and energy-intensive lifestyles around the world. All these factors lead to rapid growth of the global economy, while global population peaks and declines in the 21st century. Local environmental problems like air pollution are successfully managed. There is faith in the ability to effectively manage social and ecological systems, including by geo-engineering if necessary."

Implications for climate policy. Sustained global wealth creation and rapid technological progress provides a strong basis for widespread climate adaptation measures, be it infrastructure based, nature-based solutions or financial adaptation measures (like risk pooling). However, the almost total reliance on fossil fuels severely limits the impact that any climate mitigation policies may have.

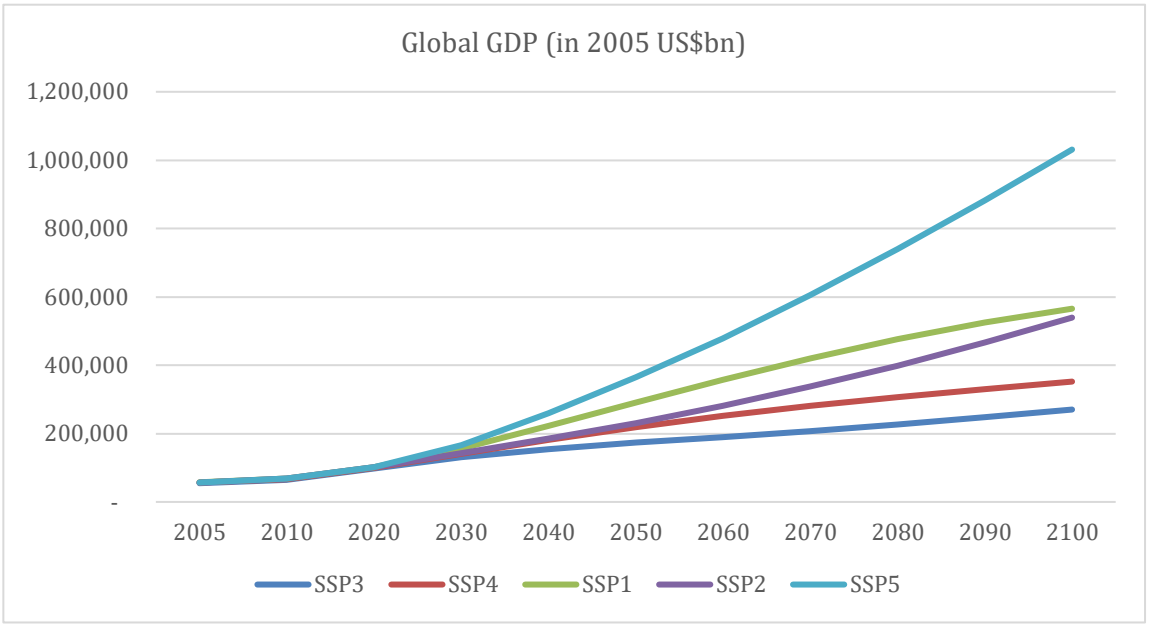
These five scenarios provide a high-level framework for examining the consequences of current choices, or lack of.

Economics and Environment Interlinked

Each of the five pathways makes assumptions about inputs like economic development, demographics, and resource availability and use, leading to very different socio-economic outcomes for the world, across energy production, land usage and agricultural production, population growth and key economic and technological indicators. While individual differences are small initially the pathways diverge significantly over time leading to very different endpoints by the end of this century.

The development of global economic output (GDP) is a good example of the diverging paths the SSPs model for the future. Each SSP's GDP projection is built bottom up using the population growth, trade flow, technological development and other assumptions included in the respective narrative, and all SSPs project a rapid and (and more or less) sustained growth, with global GDP growing by at least 5x over the course of the 21st century. However, the difference between pathways is considerable by the end of the century, with a nearly four-fold difference in global GDP between the highest and lowest growth pathways (see figure 2 below.)

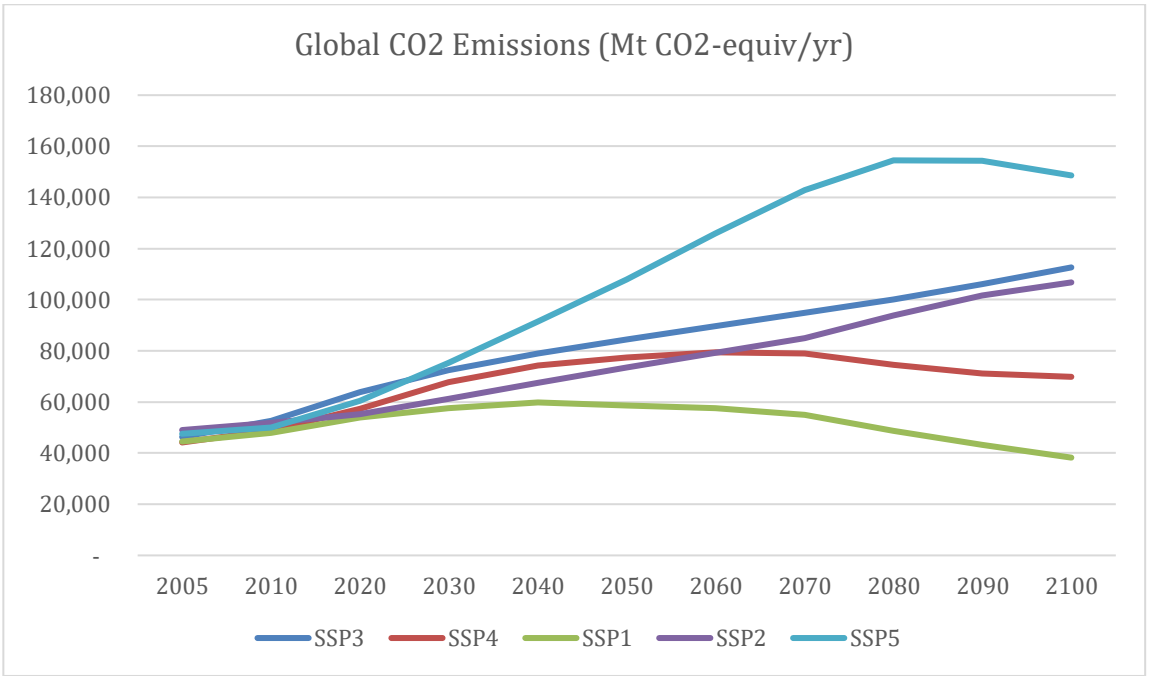
Figure 2: Global GDP Divergence Predicted by Shared Socioeconomic Pathways



Source: IPPC Sixth Assessment Report

This economic growth is perhaps one of the most basic drivers of projected future CO_2 emissions. However, while the correlation between GDP growth and CO_2 emissions is almost always positive, the different assumptions around energy intensity, decarbonization and technological development across the pathways leads to very different levels of coupling between economic growth and emissions. The chart below captures the annual global CO_2 emissions of the different pathways, with only the most optimistic scenario (SSP1) forecasting a future drop in emissions in below current levels, and only in the final decade of the 21st century.

Figure 3: Global Greenhouse Gas Emissions Projections by SSP



Source: IPPC Sixth Assessment Report

Implications for Global Strategy & Planning

The scenarios described in the SSPs provide a valuable framework to understand various endgames and their consequences. While, they have primarily been conceived as platforms for climate modelling, and the geopolitical and social-economic factors they describe are inputs to the individual pathways, they are a potentially invaluable tool for leaders to set long-term national strategies and agree international strategies for cooperation and development. They also provide a framework for other stakeholders including corporations, financing and investment institutions, NGOs and local communities seeking to evaluate risk, determine strategy and gain an appreciation of the consequences of their actions.

Taking the world each pathway describes as a potential target or outcome that leaders might seek to achieve gives rise to several observations around the feasibility and risks associated with each of the pathways. Policy makers weighing long term strategic options will accordingly need to consider the following:

I. SSP1: Taking the Green Road – Is highly ambitious, and highly challenging to achieve. SSP1 and the sustainable, prosperous low carbon future it leads represents the best of all worlds, and like most utopian scenarios is likely to remain out of reach. SSP1 presupposes a global society that is more just, more inclusive, and more altruistic than it has been at any point in time in recorded history. While the argument might be made that the world is headed in this direction (albeit slowly and unevenly),[viii] SSP1 also assumes a shift in human nature away from materialism, with global priorities shifting from growth to well-being, and the material basis of global consumption contracting as ongoing effort of measure of Progress "Beyond GDP" emphasize.

   Belief in such shifts appears excessively optimistic: even if the citizens of advanced industrialized countries (i.e., OECD members) were to make significant changes to their consumption patterns, it remains highly unlikely that the over 6.6bn people currently living in middle- and low-income countries would be willing to forfeit adopting the consumption patterns (and accompanying standards of living) the West has enjoyed for decades.

II. SSP2: The Middle of the Road – Continuing the trend line derails the world off that path. SSP2 was built on a path that extrapolated historical social, economic, and technological trends into the future, and was meant to describe a 'business as usual' scenario. Moreover, in term of its macro-economic and climate outcomes, it also delivers a middle ground for the world relative to the other four SSPs. While it was perhaps originally envisaged as a fallback or default scenario for the world, the assumption that future trends will match historical paths has proven to be faulty given the economic, political and energy shocks of 2022 and resulting global security risks.

   The real-world shocks that arise periodically – the last three years including a global pandemic, recession, and a war in Ukraine – risk pushing the world onto a development

trajectory that is more closely described by SSP3 than by SSP2, indicating that in the absence of active intervention and engagement the world risk heading to the worst-case scenario considering both economic and environmental considerations.

III. SSP3: Regional Rivalry – Highlights the limits of the 'limits to growth' idea. SSP3, describing a world of rivalry and division, does not a represent a realistic goal for policy makers, and instead results in the spectacular failure to meet economic and environmental goals. However, beyond being a warning to policy makers regarding the risks associated with inaction or the failure of the world to come together, SSP3 also illustrates that global challenges like climate change cannot be solved in the absence of economic growth. SSP3, despite delivering the lowest economic growth leads to the second highest level of emissions, trailing only the world in which carbon-based energy sources are consciously embraced.

This result highlights the shortcomings of the 'limits to growth' approach to sustainable development, which posits that sustainability in a world of finite resources can only be achieved by reducing growth. SSP3 implies that effectively managing climate change will require not just cutting back on growth, but also making massive cuts to global standards of living and/or demographics, neither of which appears to be feasible across large parts of the world.

IV. SSP4: Inequality – A Road Divided – Warns of the danger of National Populists. SSP4's combination of high economic growth and lack of global solidarity makes at an attractive scenario for the current generation national populists around the world, delivering growth and prosperity at home while not sharing its benefits with the rest of the world, combining populist sentiments like 'America First' and 'Taking Back Control'.[ix] Indeed SSP4 describes a world very much in line with populists' proposed policies and their likely consequences: high levels of domestic investment, a focus on capital-intensive sectors (for employment) and knowledge-intensive sectors (for wealth creation) a mix of high and low carbon energies (in a nod to all stakeholders), while accepting the loss of social cohesion that these policies ultimately lead to. However, SSP4 appears to assume a world which is much less integrated and interconnected than it in fact is.

Economic and security shocks reverberate around the globe, near term disruptions to supply chains create longer-term global shortages, and widening economic discrepancies create migration on a scale yet unseen, putting the targeted local progress at risk. Moreover, as shocks inevitably occur the lack of global coordination and solidarity risks having the pathway SSP4 describes slip into that of SSP3, and outcome that nobody would aim for.

V. SSP5: Fossil-fueled Development – A high risk gamble on timely breakthrough innovation. SSP5 offers one of the best outlooks for humankind in the 21st Century, delivering increasing standards of living, improved health and education outcomes and the capital generation required to adapt to climate change, and one that (in a best case scenario) can

meet the global target of limiting temperature rises to below 2C despite further exploitation of carbon resources, assuming significant innovation and investment in energy efficiency, industrial decarbonization, and cleaner energy sources. The underlying assumption is that the world can behave in a manner that is inclusive, sharing the benefits across the world.

Much like SSP1, SSP5 assumes an unrealistic integrated global world that shares the benefits of global growth and invests heavily in (human) sustainable development, implying a level of cooperation and inclusion that the world has not yet seen (and is unlikely to deliver based on current global trends). Moreover, SSP5 has a finite window in which significant technological breakthroughs need to be made to counteract the continuing scaled exploitation of carbon energy source, effectively placing a blind bet on hitherto unidentified technologies and their timing, with a loss leading the world to ending up in the worst-case climate scenario, a very high-risk gamble.

Conclusion:
Aligning and Investing with Urgency and Confidence in the Future

As the United Nations Secretary General, Antonio Guterres, says, "Humanity is waging war on nature. Nature always strikes back – and it is already doing so with growing force and fury. The fallout of the assault on our planet is impeding our efforts to eliminate poverty and imperilling food security. And it is making our work for peace even more difficult, as the disruptions drive instability, displacement, and conflict."[ix]

The SSPs provide a way to understand the implications of various paths from here to the future. What is clear is that the current path the world is taking is both unsustainable and susceptible to being derailed by event risks driving regional and national rivalry which in turn creates sharp divisions between the global north and south and within nations.

In their desire to create a better future for the world, sincere global leaders will likely be drawn to the sustainable green road (SSP1), to a riskier high growth through innovation approach (SSP5), or a combination of both if that were possible. However, given the first path is subject to event risks of the type recently experienced in the world in the guise of pandemics, recession and wars which set-back cohesion, sharing and finances, and that the second path is subject to the additional risk that the gamble that critical innovations will arrive in time and of a quality that allow mitigation of mass industrial development, any strategies focusing on either face a high likelihood of failure, with significant costs for the world.

The strategy for the way ahead may well need to be one that invests boldly to create human security for all, leveraging current technologies, and invests in the breakthroughs that provide for a superior built on a clean energy for the path ahead … thereby providing for the growth aspiration of citizens in the developing world and the advanced economies alike

Given the predicament facing the world, the most appropriate strategy is one that accounts for the shortcomings of the world we live in today while leveraging the potential of innovation to create a superior future that delivers prosperity and human security for all. Such a strategy begins with reestablishing the global alignment around long-term priorities that places the world back on a middle path of growth and sustainability (much like SSP2). However, given that this path has proven to be fragile and prone to derailment world events, the world concurrently will need to invest heavily in the energy and technological breakthroughs delivering the decarbonization described by the sustainable green road (of SSP1), and the economic growth achieved by the path of fossil-fueled development (SSP5).

Two recent Force for Good reports - 'Capital as a Force for Good, Capitalism for a Secure and Sustainable Future' and 'Technology for a Secure, Sustainable and Superior Future' - both explore the way ahead. The first report makes clear that the funding required to meet the SDGs cannot be addressed with the current approach. The latter report finds that technology can address c.40% of the SDG gap to 2030. The report explores and contrasts two options - 'A world in retreat: preservation and mitigation mode' and 'A world in growth: moving rapidly to a future model' - along the dimensions of energy, industry, materials, people, travel, finance and planet. One of the key conclusions is that to create a more secure, sustainable, and superior future, the world will need to pursue a path that addresses pressing existential challenges, levelling up the world, while investing to deliver fundamental technological breakthroughs that will transform the world and raise the whole platform. The IPCC offers the high-level scenarios that inform the choices that leaders need to make to pursue such a way ahead.

The world's current path is a retrograde one and inferior to many other paths that could be followed. The SSPs incorporated in the IPCC's Sixth Assessment Report forewarn us of the consequences of our choices, or lack thereof. The consequences of not working towards a sustainable, secure, and superior future are clearly negative. Now it remains for world leaders to make, or be forced by the citizens to make, the choices that create a better world.

ANNEX

Bibliography

Key reference documents include the contributions to the IPCC's Sixth Assessment Report (AR6), specifically:

Climate Change 2021: The Physical Science Basis (Working Group I), *released on 9 August 2021, available at https://www.ipcc.ch/report/ar6/wg1/*

Climate Change 2022: Impacts, Adaptation and Vulnerability (Working Group II*), released on 28* February 2022, *available at https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/*

Climate Change 2022: Mitigation of Climate Change (Working Group III), *released on 4 April 2022, available at https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/*

Climate Change 2023: Synthesis Report, *released on 20 March 2023, available at https://www.ipcc.ch/report/ar6/syr/*

The SSP Database is maintained by the International Institute for Applied Systems Analysis (IIASA) and can be accessed at https://tntcat.iiasa.ac.at/SspDb/dsd?Action=htmlpage&page=about#v2

Capital as a Force for Good, Capitalism for a Secure and Sustainable Future, Report, 2022, *available at https://www.forcegood.org/report-2022*

Technology for a Secure, Sustainable and Superior Future, Technology as a Force for Good, Report, 2023, *available at https://www.forcegood.org/report-2023*

Report references

[i] Source: RMS, Reuters
[ii] Source: Aon 2023 Weather, Climate and Catastrophe Insight report
[iii] Sources: World in 2030 Report, UNESCO; European Environment Agency, et al
[iv] Description of the SSPs excerpted from the IPCC Sixth Assessment Report
[v] ibid
[vi] ibid
[vii] ibid
[viii] Source: S. Pinker, The Better Angels of Our Nature
[ix] A popular Brexit slogan focused on reclaiming sovereignty supposedly ceded to the EU.
[x] Speech at World Leaders' Forum, Columbia University 2 December 2020

Disclaimer

purpose, currency, and non-infringement. Force for Good and its affiliates specifically do not make any warranties or representations as to the accuracy, authenticity, completeness, or currency of any of the information contained herein. The inclusion of, or reference to, any information in this publication does not mean that they are in any way approved, endorsed, or recommended by Force for Good. This material should not be reproduced or distributed without the prior consent of Force for Good.

38 Wigmore Street, London, W1U 2RU, United Kingdom

ISBN: 978-1-7392590-3-7

www.forcegood.org