مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

THE FUTURE OF PROGRESS

A FORESIGHT REPORT ON THE GLOBAL TRANSITION BEYOND GDP

SEPTEMBER 2024

DUBAIFUTURE.AE

Data, signals, trends, benefits and risks mentioned in this report are non-exhaustive and were based on information available at hand at the time of publication.

Ideas and content within this report are by DFF. GenAI was used to aid in grammar, copyediting and translation with human editorial oversight.

Recommended Citation

Dubai Future Foundation (2024) 'The Future of Progress: A foresight report on the global transition beyond GDP'.
www.dubaifuture.ae/the-future-of-progress

TABLE OF CONTENTS

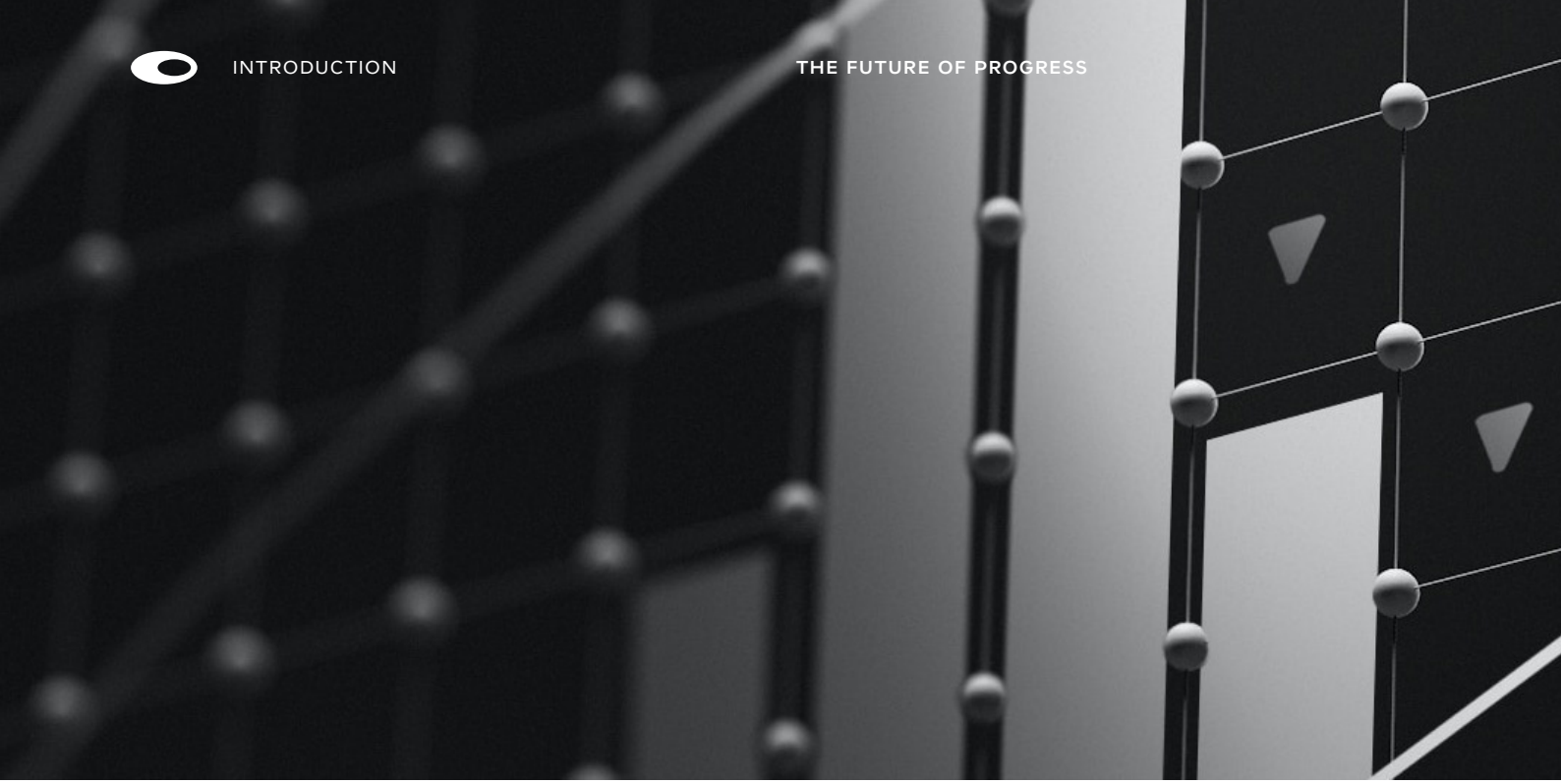
INTRODUCTION

- The history and the evolving discussions around GDP and the future of GDP

Gross domestic product (GDP) – based on the value of goods and services produced and consumed within national boundaries, savings and investments made within those same boundaries, government expenditure, tax revenues and net exports made over a period of time – has long been accepted as the global gauge for the economic and, increasingly, the social progress of a nation. While the word 'progress' is laden with meaning and has philosophically challenging connotations (Lange, 2011), by **'progress', we refer to the pursuit of integrated economic, social and environmental betterment for people and the planet today and in the future.** However, GDP has played a limited role in accounting for developments that have generated new economies and – as a gauge for progress – has not evolved in line with environmental imperatives, technological advances, or socially redefined forms of value such as well-being and inclusion. The world has evolved, and even if GDP is positively correlated with many aspects of societal progress and development, the way we measure progress will need to evolve.

In 2008, then French president Nicolas Sarkozy called leading economists to create a commission, later named the Commission on the Measurement of Economic Performance and Social Progress (CMEPSP), to study whether GDP was a reliable indicator of socio-economic progress (Stiglitz *et al.*, 2009). The seminal Stiglitz–Sen–Fitoussi report was published in 2009 as a result. This report was pivotal because it concluded that while 'statistical indicators are important for designing and assessing policies aiming at advancing the progress of society … what we measure affects what we do; and if our measurements are flawed, decisions may be distorted. … It has long been clear that GDP is an inadequate metric to gauge well-being over time particularly in its economic, environmental, and social dimensions, some aspects of which are often referred to as *sustainability*' (Stiglitz *et al.*, 2009: 7–8).

Following the Stiglitz–Sen–Fitoussi report, in 2013 the Organisation for Economic Co-operation and Development (OECD) set up the High-Level Expert Group (HLEG) on the Measurement of Economic Performance and Social Progress, co-chaired by Joseph E. Stiglitz, Jean-Paul Fitoussi and Martine Durand (Nobel laureates and leading economists on the topic of going beyond GDP). Then, in 2018, the HLEG published *Beyond GDP: Measuring What Counts for Economic and Social Performance* (OECD, 2018a) and *For Good Measure: Advancing Research on Well-Being Metrics Beyond GDP* (OECD, 2018b), which stated that the 169 targets established and agreed as part of the Sustainable Development Goals (SDGs) were too many and recommended that countries should choose a set that aligned with their priorities (OECD, 2018b).



In 2021, the UN Secretary-General's report *Our Common Agenda* made a call to reimagine measurements of progress and socio-economic performance, as GDP does not fully account for the human and environmental harm of some business activities. The report also argued that we should seek measures that matter to people and the planet and that complement GDP as part of a reimagined social contract (United Nations, 2021).

These efforts simultaneously continue to pave the way for and shape an ongoing intellectual debate and conversation calling for a collective effort to develop ideas around a new metric of national progress that would capture more dimensions than those encompassed by GDP. Some cities, US states, countries and regions have implemented or started to consider more inclusive measures of economic growth. For example, Australia (SGS Economics and Planning, n.d.), Bhutan (World Bank, 2023a), institutions in the European Union (EU) (European Parliament, 2016), the Netherlands (Boelhouwer, 2023), the Canadian city of Vancouver (Vancouver Economic Commission, n.d.) and the US state of Vermont (Ceroni, 2014) have developed or adopted frameworks and indicators capturing elements such as anxiety levels, education, employment, health, life satisfaction, liveability, noise pollution, non-renewable energy resource depletion, poverty, research and innovation, safety, sustainability, volunteering and general well-being to gauge progress beyond GDP.

In addition to regional, country and city-level efforts, there are several global indices that attempt to look at progress beyond just economic growth – i.e. beyond GDP. They include the World Bank's Global Database of Shared Prosperity (World Bank, 2023b) and the United Nations Environment Programme's (UNEP) Inclusive Wealth Index (UNEP, 2018), which focus on inclusive wealth. Other examples include the United Nations' SDG Tracker (Our World in Data, 2023) and SDG Index (Sachs *et al.*, 2023b), which track countries' progress towards the SDGs. Based on research frameworks, the Wellbeing Economy Alliance (https://weall.org), Earth4All (https://earth4all.life) and the Doughnut Economics Action Lab (https://doughnuteconomics.org) represent a more significant shift towards a transition to fully fledged well-being economies. The Wellbeing Economy Alliance is pursuing a shift towards an equitable future that considers poverty, empowerment, inequality, food and energy for well-being; by Earth4All acknowledges the planet's finite resources; and doughnut economics concentrates on the boundaries around life's basic needs and the planet's ecological limits.

Despite these efforts, a multitude of approaches and methodologies, numerous calls for advancement, and more than a decade of serious consideration by the academic, government and civil society communities, GDP continues to be the reference for global and national socio-economic progress and a key part of the international finance and trade system. Additionally, efforts – with some exceptions – have thus far remained complementary to GDP and none have been scaled globally. Some experts believed that it is only a matter of time before any of the current indices or approaches is scaled globally as an alternative to GDP; however, this view was not unanimous. What we have identified is that while there are several challenges that act as **barriers to the transition beyond GDP**, the lack of scalability largely results from the difficulty of developing a suitable set of standard metrics or a single metric. These metrics or metric would integrate all relevant dimensions across contexts and remits; distinguish between nation, city, community, neighbourhood and individual levels; enable global comparability (OECD, 2018b); and remain relevant and adaptable to technological advances over time. Some have argued that the ongoing shift to increase reporting on environmental and social metrics – for example, through the introduction of environmental, social and governance (ESG) approaches – will advance the conversation; however, ESG has largely been driven by the capital markets, is not inclusive of all sectors and domains, and still requires more accurate and robust disclosure (Pérez *et al.*, 2022).

As the world evolves towards a future that is even more complex and varied (DFF, 2022), a new or evolved measure (or measures) of progress is needed – one that provides a clear view of how economies are truly doing and that encompasses people and planet. Often referred to as going 'beyond GDP', this is not a trivial challenge, particularly when dealing with interdisciplinary domains, multiple philosophical perspectives, and interacting elements of people and planet, most importantly because it requires a transformative mindset shift from the approach that has been used for nearly eight decades, since the Bretton Woods Agreement in 1944 (Allin *et al.*, 2022).

Futures studies are designed to support decision-making in the face of uncertainty (Bibri, 2018). Backcasting is a form of foresight that is used when dealing with complex phenomena with inherent uncertainty and ambiguity – such as the transition beyond GDP – and that may require a shift from existing dominant narratives (Quist and Vergragt, 2006) towards a preferred future (Hines *et al.*, 2019). Backcasting is the opposite of forecasting and, together with the development of scenarios, provides 'pathways for governments or enterprises in the early stage of their policy-making or strategic decision-making process' (Kishita *et al.*, 2023).

We define the **global transition to 'beyond GDP' as the shift from GDP as the sole standard for determining national progress and development.** This report is a summary of the research carried out, including a review of journal articles, organisational publications and thought pieces published since 2012; core articles central to understanding the history and emerging global narrative on moving beyond GDP; a global benchmarking exercise including various worldwide indices and approaches adopted by cities and countries; and discussions with 29 global experts. The goal was to answer three questions:

- **Why beyond GDP?**
- **Where are we today on practically moving beyond GDP?**
- **What are the barriers to scalability and how might we overcome them?**

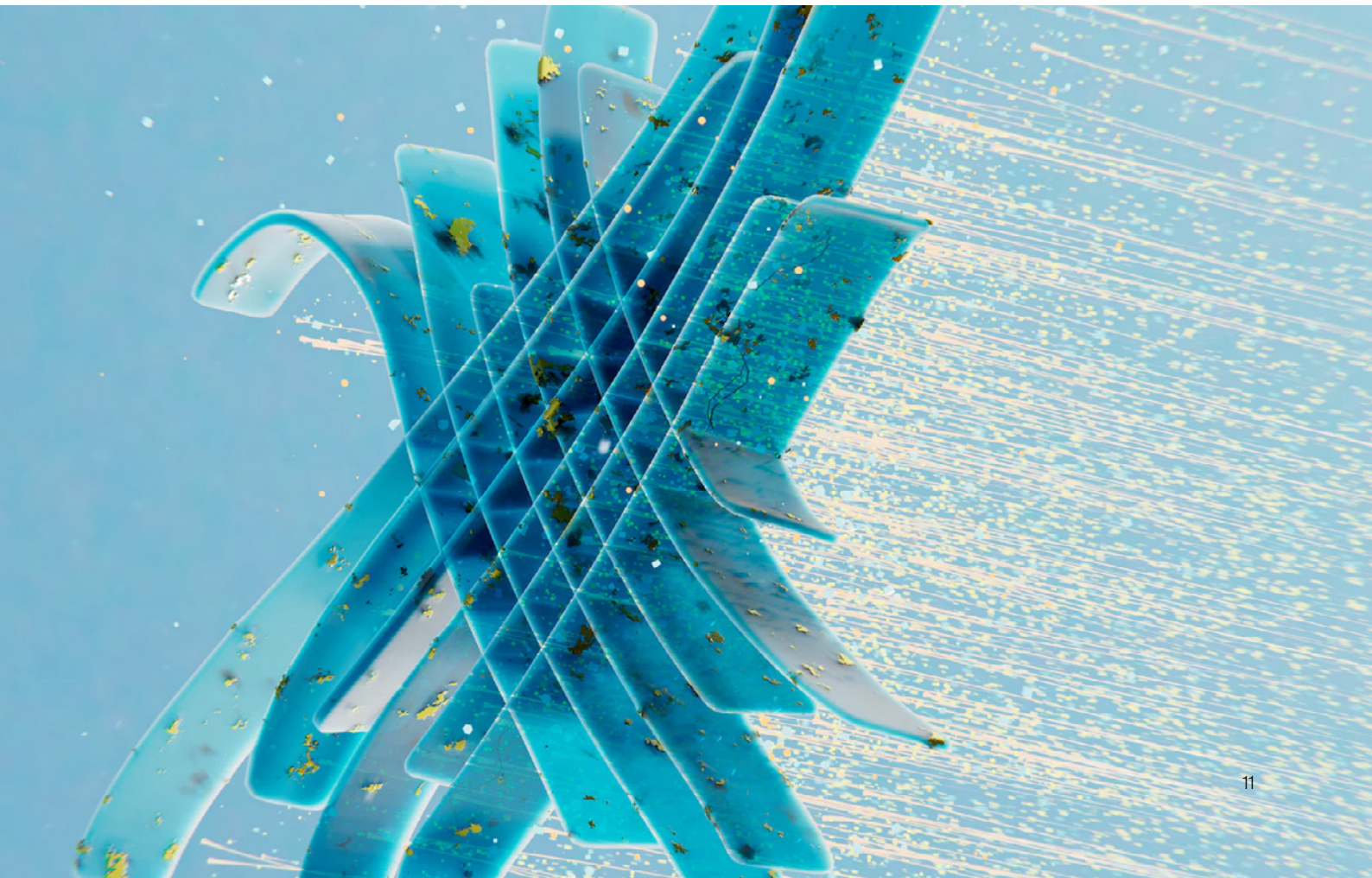
1

THE CASE FOR ‘BEYOND GDP’

→ While GDP has helped countries grow, it has limitations

A BRIEF SUMMARY OF GDP

GDP is considered one of the most significant innovations of the 20th century (Landefeld, 2012). It is a number that provides insight into the aggregate economy at the global and national levels (OECD, 2018a). Just a brief look at international media depicts that GDP is a matter of global attention and both people and governments use GDP as a measuring stick for the economy and the future. It regularly features in the media around the world in articles that provide forecasts about economic growth indicating, for example, that a given country's GDP growth will accelerate, decelerate or stay at a certain level. It also features in news articles that report on the largest or smallest economies by GDP. Some press releases comment on how much a sector, activity, debt or stock market has contributed or will contribute to GDP. Some news stories announce new or reviewed credit ratings that are linked to GDP, and others, provide deep dives into the causes or impacts of GDP growth or contraction, including relating to inflation, currency shifts, consumer sentiment and spending, unemployment, trade, interest, commodity prices, government spending and much more.



GDP uses the System of National Accounts (SNA) to calculate the total value[1] of all finished goods and services produced within a nation's borders during a specific period of time (Oulton, 2018). In the SNA, the total value is the gross value added to an economy by income and final expenditure including the production of goods and services, consumer and government spending, internal and foreign direct investments, net exports, and taxes (World Bank, 2008). As defined by the UN Statistics Division, the SNA is an internationally agreed set of standards, procedures, measures and accounting rules that statisticians, economists and financial analysts use to comprehensively measure economic activity in a given country (UNSD, n.d.-a). While the SNA includes the statistics needed for GDP, this is not the SNA's only purpose (World Bank, 2008). When reported as gross national income, GDP includes overseas residents' incomes and excludes non-residents' domestic incomes (UNSD, n.d.-b). When converted into GDP per capita, GDP is meant to tell us whether an individual in a country is better or worse off in a specified period of time compared to another period of time (Callen, n.d.).

GDP is typically reported on quarterly and/or annually (World Bank, n.d.-b) even though the underlying metrics and indicators – if available – may be monitored and reported at different frequencies (Callen, n.d.). This is dependent on technological, logistical and resource capacities to monitor, capture and consolidate data (Callen, n.d.), as well as decisions – if data is available – made to overcome challenges related to valuation or pricing (Callen, n.d.). It is worth noting that the OECD and G20 countries have attempted weekly tracking of GDP in real time via Google Trends as a proxy (Woloszko, 2020); however, while these efforts continue, no new data has been published since April 2023 (OECD, n.d.-a).

[1] The SNA provides three approaches: by production, by income and by expenditure.

GDP was presented to the US Congress after the Great Depression (Dickinson, 2011) and adopted at the Bretton Woods Conference in 1944,[2] near the end of the Second World War (Vanham, 2021). It took another nine years, until 1953 (UNSD, n.d.-c), for GDP to be operationalised through the SNA with guidance sufficient to enable national accounting and statistical organisations to understand and apply the guidelines in a comparable manner (Oulton, 2018). Since then, countries around the world have adopted the SNA and GDP to measure economic activity and participate in the global economic and financial system. The elements within the SNA are structured so that countries can skip them if they are not relevant, given countries' varied levels of economic development (IMF, 2009).

The SNA, and by extension GDP, affects various aspects within the global and national economic and financial systems; its greatest impact is on decision-making (World Bank, 2008). Monetary, fiscal, trade, tax and regulatory policies are guided by GDP, and GDP is frequently used to allocate funds and make budgeting and business decisions (Stobierski, 2021). Considered an objective measure of the economy (Landefeld *et al.*, 2020), decisions linked to GDP affect communities, businesses, charities and governments at the national, regional and global levels.

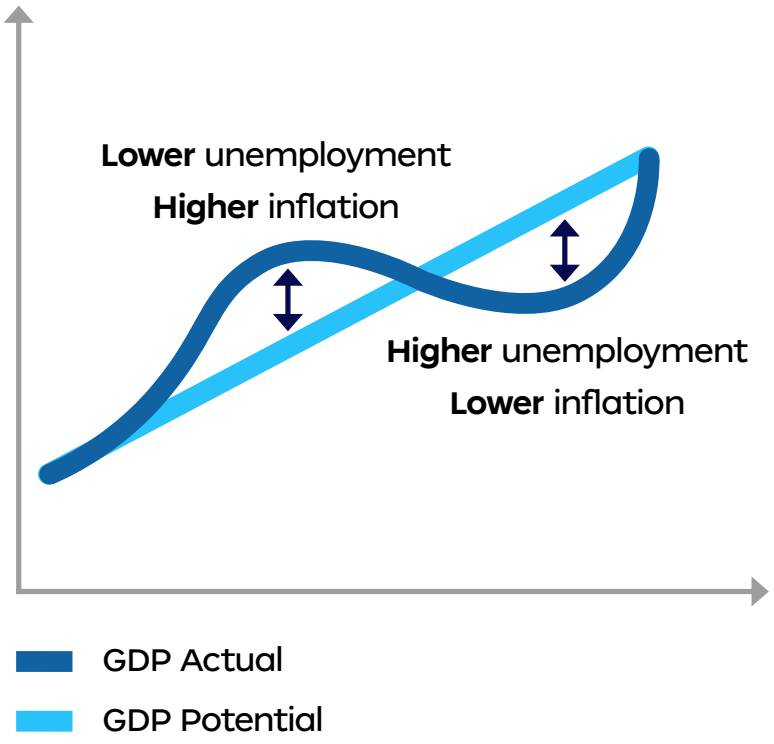
Based on neoclassical economics (Brand-Correa *et al.*, 2022), central banks and governments track GDP to assess the status of their economies and make informed policy decisions to ensure that their economies continue to be healthy. If economic growth appears to be weaker than expected, central banks typically consider 'loosening' monetary policy – for example, by lowering interest rates with the aim of stimulating economic growth and employment (Reserve Bank of Australia, n.d.). On the other hand, if economic growth appears to be stronger than expected, central banks consider 'tightening' monetary policy – for example, by raising interest rates in order to dampen economic activity and soften inflation (Reserve Bank of Australia, n.d.). In terms of fiscal policy, national governments may consider increasing spending or reducing taxes (Reserve Bank of Australia, n.d.). Should GDP growth seem to be weakening or strengthening more than expected, policy-makers will also look at the various components of GDP to identify why this may be (Claessens and Kose, n.d.).

[2] It is worth noting that after the Bretton Woods Agreement there were the Jamaica Accords (1976), in which the par value or fixed exchange rate system ended. This followed the United States' decision in 1971 to drop the convertibility of US dollars into gold; it took until 1976 for a new way forward to be agreed (de Vries, 1976; Halm, 1977).

Neoclassical economics on the principle of continued economic growth where trade-offs are inevitable (Brand-Correa *et al.*, 2022). Nevertheless, GDP growth has been seen to positively impact societal quality of life and life expectancy (IMF, 2020), particularly in high-income countries (Brand-Correa *et al.*, 2022).

Figure 1

GDP, economic growth and indicators of monetary policy (simplified)



Source: Reserve Bank of Australia, n.d.

Yet, governments also track other key indicators besides GDP before making key monetary and fiscal policy decisions. For example, the European System of Central Banks monitors a wider set of economic indicators including real GDP growth,[3] wages, prices, balance of payments and currency exchange rates (European Central Bank, 2004). Similarly, in the United States, the private, non-profit National Bureau of Economic Research monitors and reports on a comprehensive set of measures over and above GDP (www.nber.org) – including employment, income, sales and production – to analyse trends in national economic activity (White House, 2022a). These measures function as an extended set of 'satellite accounts' that are not reported or included in GDP updates but are looked at by policy-makers in the United States (BEA, n.d.).

Among others, both the World Bank (n.d.-b) and the International Monetary Fund (IMF) (2022) notably monitor GDP to gauge global financial stability and volatility and to forecast the probability of future recessions through past trends in GDP. They also use GDP and related measures to aid decision-making on access to financing (Wolverson, 2013). In a similar manner, development banks provide financial aid to countries to promote economic growth, which often depends on the underlying quality of the country's institutions, such as the rule of law and the existence of a good policy environment (Burnside and Dollar, 2004), although this relationship has been challenged in the past (Easterly *et al*., 2004).

When it comes to indices, when GDP is examined from a per capita perspective, in many (but not all) countries it positively correlates with non-economic global data, such as the United Nations' Human Development Index (Islam, 1995), the World Happiness Ranking (WHR, 2022), measures of life satisfaction (Bertolucci, 2018) and measures of employment (International Labour Organization, n.d.). GDP is also included in both Goal 8 and Goal 12 of the SDGs (Alexander *et al*., 2018) and GDP per capita is positively correlated with SDG-related spending (Kharas and McArthur, 2019) and green growth (Tawiah *et al*., 2021).

[3] Real GDP is GDP adjusted for inflation.

Based on research conducted and discussions with global experts, **GDP has served its purpose for decades.** It is a universal and transparent measure of economic development based on a solid statistical system. It indicates the general health and size of an economy, provides a clear methodology, limits subjectivity, allows for cross-country comparisons and (as mentioned above) has been seen to positively correlate with productivity, happiness and living standards.

THE CHALLENGE WITH GDP

For many, there is no need to go beyond GDP: GDP is already very powerful as it is included in the indices we consider when designing policies and in itself informs national policies related to the economy, development, healthcare, spending and other important areas of global concern. Moreover, even if well-being were used to gauge the economy, GDP would still be important (Bannister and Mourmouras, 2018) as income, production and consumption – parts of GDP – positively contribute to welfare (IMF, 2020). Measures of well-being would still need to include GDP in some way, taking into account factors such as the quality of the environment, levels of crime, the availability of essential social services (UNESCWA, n.d.) and the ability to access necessities such as food, housing, transportation and medicine (Hulten and Nakamura, 2022).

However, there are several aspects that make the case for moving beyond GDP universally relevant, irrespective of nations' stages of economic development. As noted as early as 1977 (Department of Economic and Social Affairs Statistical Office, 1977), GDP is based on a static and linear view of the world with an outdated baseline of analysis relating to some underlying measures captured within the SNA. GDP is also based on the past and is not inclusive of a nation's future as seen through the availability (or stock) of human, social and natural capital resources, which may be consumed at rates beyond sustainable limits.

Notably, and even though it was not designed to do so, a key critique of GDP is that it **does not capture social progress or human well-being** (Kapoor and Debroy, 2019). GDP overlooks social costs, environmental effects and disparities in income (Costanza *et al.*, 2014). GDP also does not fully capture the means for social progress (UNEP, 2022). Yet, over time, GDP – especially when reported per capita – has come to be perceived as a measure of well-being, despite the fact that it is calculated as the mean of an aggregate and an underlying distribution that masks potential inequalities (Stiglitz *et al.*, 2009). GDP highlights the economic dimension more than the individual well-being or welfare dimension (Hulten and Nakamura, 2022).

Additionally, and contrary to what is often assumed, **GDP's comparative power across countries is limited**, particularly at the sector and industry levels (Sen, Fitoussi and Stiglitz, 2009). It also varies with the reference years used (Silungwe, 2020) and is significantly impacted by rebasing (Bittencourt, 2021; Ohuocha, 2014). For example, while GDP was effective at demonstrating the tangible productivity of the 20th century, economies in the 21st century have become increasingly intangible, with growing digital components (Hulten and Nakamura, 2022).

Notions of investment returns and labour are changing (Hulten and Nakamura, 2022) – for example, productivity levels are now much more affected by skill level than by company size, but GDP uses the latter as it is part of the SNA (Stiglitz, 2011). GDP gives limited consideration to key inputs, such as higher education spending, investment in research and development (Landefeld *et al.*, 2020) or sale of intermediate goods and used goods (Masterson, 2022).

From another perspective, **GDP is non-exhaustive**: it overlooks the full range of productive activities that have no monetary value, such as volunteer work and other activities that are not directly measurable or difficult to assign a monetary value (IMF, 2009). Neither does it consider all non-monetary externalities (unintended implications of activities), such as health consequences, traffic and social impacts more generally, or factors such as ecological stability and the sustainability of food systems (Wolverson, 2013). Similarly, GDP excludes sustainability related elements that do not have a market value such as natural capital and other secondary impacts (both positive and negative) such as avoided emissions of greenhouse gases, and air and water pollution (UNEP, 2022). Even when proxies are used, they are often outdated (Wealth Accounting and the Valuation of Ecosystem Services, 2012), as is the case with social capital (Osberg and Sharpe, 2001). For example, GDP has historically improved employment rates, incomes and productivity, and prevented or resolved many social conflicts (Landefeld *et al.*, 2020); however, today GDP is exacerbating unequal distribution in some locations and, ironically, leading to another set of social problems including poor mental and physical health and drug abuse (Costanza *et al.*, 2014).

GDP growth since the Second World War has brought higher standards of living in parallel to ushering in the golden age of capitalism (Smith *et al.*, 2022), but, more broadly, while **GDP tells us about economic flows and financial capital in a given country over a period of time, it does not fully convey information about the human and natural assets that bring about those flows or the impacts of those economic activities on the future of the assets** (Smith *et al.*, 2022). This is a concern given that those very assets are the key to future prosperity and sustainable development (World Bank, 2021). Increased output today may, for example, come at the cost of environmental damage tomorrow (Callen, n.d.), with limited consideration for the long-term effects and consequences of actions (World Bank, 2021).

The Problem with GDP and Drivers of 'Beyond GDP'

- **Excludes new value forms and economic streams, misses balance between aggregate and local economic drivers**
- **GDP growth has not always led to greater prosperity, with much politics associated with it**
- **Natural, human and capital assets (in some contexts) are degrading at rates not sustainable for the future**
- **GDP ignores secondary impacts – both positive and negative – well-being and non-monetary contributions that may be critical to national growth**
- **Gap between data collection, analysis and technological progress and capability**
- **Static and linear view of the world, excluding inequality and financial stability**

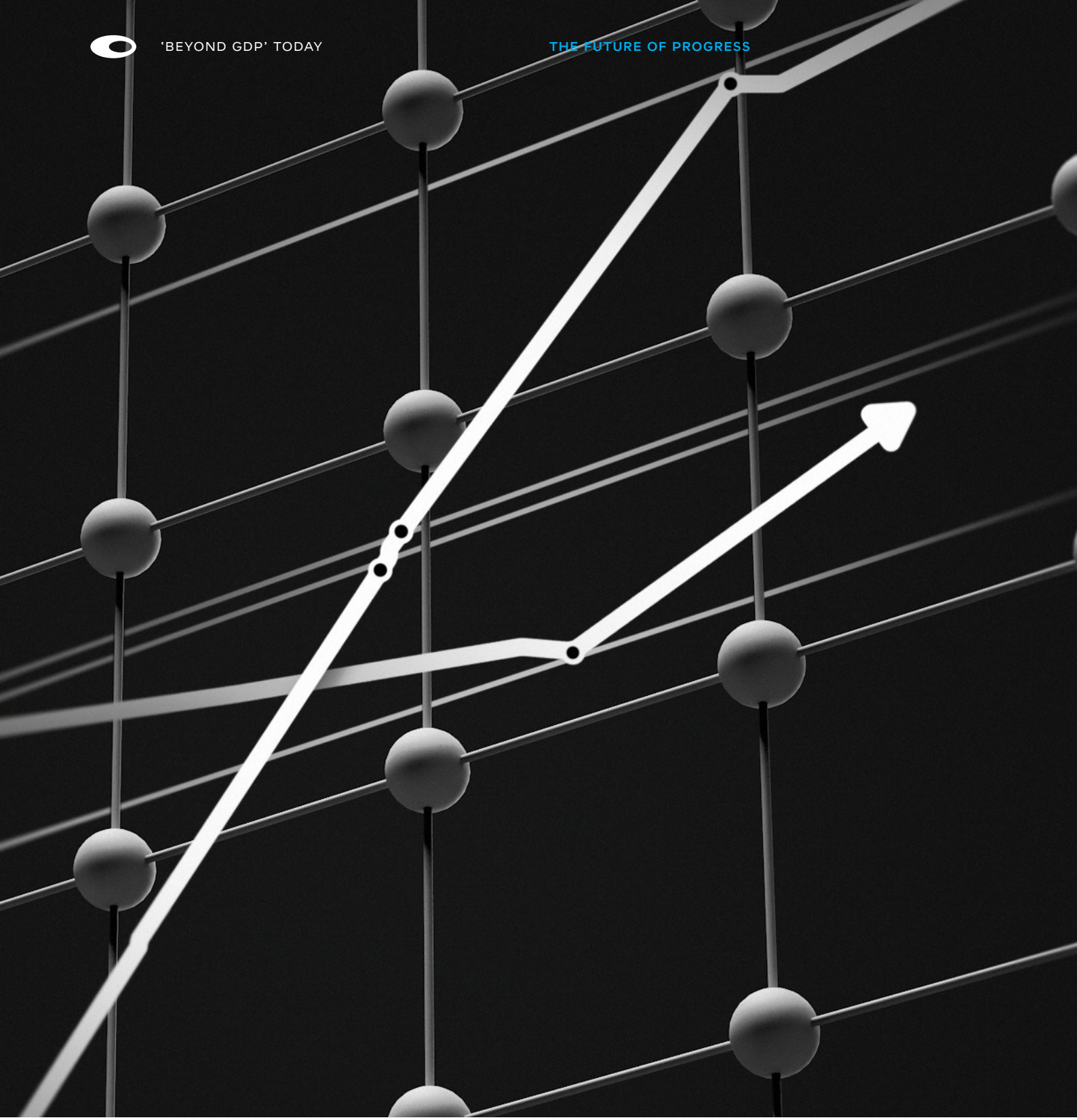
There is a call to move beyond GDP (Think20, 2022a) with an approach that provides guidance on more sustainable policy decisions and ways of overcoming conceptual shortcomings or issues with weighting and aggregation. The calls are even louder after the onset of recent global crises such as the 2008 financial crisis, the COVID-19 pandemic, the Ukraine–Russia war, and the energy (IEA, 2023) and food (World Bank, 2023c) crises. Given the perception that such events are opportunities to build back better in a world seemingly in a state of permanent crisis (Zuleeg *et al.*, 2021), there is often an expectation to make post-crisis improvements more permanent.

Rising healthcare costs, concerns about the impact of advancing technologies on economies, slow growth in middle-class incomes, rising inequality, the need for sustainable economic growth, the depletion of natural resources, trade deficits, and worries about the future of employment and income (Landefeld et al., 2020) all make the case for going beyond GDP even greater.

2

‘BEYOND GDP’ TODAY

- There are numerous global indices and frameworks that have been designed to gauge progress beyond just economic growth



There are several terms associated with the 'beyond GDP' discourse, including but not limited to 'sustainable growth', the 'circular economy', 'inclusive growth', 'sustainable prosperity', 'beyond national accounts', 'de-growth', 'ecological economics', 'well-being economics', 'beyond statistics', 'post-growth' and 'green growth'. There are also numerous global indices and frameworks that have been developed to gauge progress beyond economic growth at both national and city levels.

GLOBAL INDICES

Several international indices and frameworks have been developed to capture progress beyond economic growth. We reviewed 12 widely recognised indices and frameworks, some of which directly or indirectly include GDP, such as the Human Development Index (HDI), the Global Competitiveness Index (GCI) and happiness rankings in the World Happiness Report (WHR, 2022). Some of the indices share several common dimensions, although some are more comprehensive than others; others have a narrow focus, or are not applicable or practical for all countries.

From an **environmental or natural resource** perspective, the most developed statistical standard that links environmental inputs and outputs to economic activity and that is aligned with the SNA is the System of Environmental Economic Accounting (SEEA). The SEEA was developed by the United Nations in partnership with the European Commission, the IMF and the OECD (https://seea.un.org). Building on this, the UNEP introduced the Inclusive Wealth Index (IWI), in which natural, human and produced capital are adjusted for carbon damage and financial gains from oil to assess economic sustainability and contribution to well-being (UNEP, 2022). Covering 140 countries and published every two years,[4] the IWI accounts for natural capital assets through weighted price estimates of associated benefits and risks, referred to as shadow prices, to address challenges related to the absence of relevant market pricing (Yamaguchi and Managi, 2019).

Focusing on **well-being** rather than on the environment and developed by the United Nations, the HDI, which captures data from 191 countries, measures human development based on progress in three areas: health, education and standard of living (UNDP, n.d.). The OECD has a well-being framework (OECD, n.d.-b) that is designed to measure well-being and social progress by accounting for people's and households' living conditions. It also has a related index (the Better Life Index) that covers citizens' well-being (www.oecdbetterlifeindex.org). With an online dashboard of the underlying data (OECD.Stat, 2023), this related framework and index chart whether life is getting better for people in 37 OECD and 4 partner countries through indicators covering 11 topics relating to current well-being outcomes, inequality and resources likely to positively affect future well-being.

An annual measure capturing progress in 168 countries, the Social Progress Index (www.socialprogress.org) displays a country's performance by integrating metrics

[4] Skipped in 2020 due to the COVID-19 pandemic.

relating to human needs, well-being and social opportunities, including social and environmental indicators. It aims to create a clear picture of what actual life outcomes are in various areas, from shelter and nutrition to rights and education. Also covering well-being, albeit subjectively, the WHR – based on data from the Gallup World Poll – ranks 146 countries based on respondents' self-rating of life satisfaction (https://worldhappiness.report), according to the Cantril scale's life-evaluation question (Gallup, n.d.).

Beyond natural capital and well-being, there are indices that capture other relevant elements beyond GDP. The Global Innovation Index, conducted annually by the World Intellectual Property Organization, ranks 132 countries based on their capacity for and success in innovation. It evaluates the rate of technological advancement and adoption, and the overall innovation ecosystem (www.globalinnovationindex.org).

The IMD World Digital Competitiveness ranking is conducted annually and assesses 64 countries on their adoption of digital technologies. The ranking is focused on the transformation of government practices, business models and society (IMD, n.d.). The World Bank's Human Capital Index visualises the capital losses of low health and education and their impact on the productivity of the next generation. It is updated annually for 157 countries (World Bank, 2019). Paused in 2020 and not released in either 2021 or 2022, the GCI annually assesses the long-term prosperity of 141 countries. Through the evaluation of 12 pillars based on data from the World Economic Forum, a further index, the GCI aims to prompt policy-makers to look beyond short-term growth towards long-term prosperity (World Economic Forum, 2020). Lastly, the SDG Index, developed by the United Nations and the University of Cambridge, is reported annually. It covers 163 countries and assesses a country's performance against the SDGs as a proxy for progress beyond GDP (Sachs *et al*., 2023a).

Through our research analysis and expert discussions, we identified data quality, weighting, methodology, transparency and coverage as gaps in some indices and rankings. In some cases, reports have not been published since 2020. The closest global alternatives to GDP are the HDI, IWI, and the WHR. However, as uncovered in our discussion with experts, the IWI is perceived as being complex and subjective, the HDI is sometimes criticised for not adequately capturing all inequalities and having inconsistent data frequency for key dimensions and the WHR aggregates happiness data, prioritising individual perspectives with an emphasis on the present.

Some gaps in existing global indices

Incomprehensive

Some indices, frameworks or approaches do not consider factors such as inequality, poverty or gender disparities and do not cover dimensions such as the environment in a holistic way.

Ambiguity

In some cases, qualitative data are based on subjective views and unclear bases of measurement, particularly when it comes to social science phenomena (e.g. what counts as 'decent'? How is poverty or inequality defined or measured?).

Equivalence

Some dimensions are treated equally with the same weights when they may not always be equally valuable.

Loss of detail

Results may remain unpublished or may be presented as rankings or aggregate values rather than specific scores.

Bias

In some cases, quantitative measures focus on factors and dimensions that are more common in developed economies and potentially not applicable to or challenging to capture in developing countries.

Inconsistency

Different methods of measurement may be used for the same indicators across datasets, geographies and (in some instances) time periods.

Reduction

The need to increase comparability across countries has led to the adoption of reductive indicators as proxies for some factors and dimensions or the aggregation of scores to attain a single number, diluting the depth of the analysis.

Subjectivity

The weights applied to some dimensions and elements might be influenced by the publisher of the index or ranking.

Rigidity

There may be a lack of adaptability and flexibility in the data proxies adopted, limiting the possibility of factoring in the local context.

Validity

Some survey-based indices use small – and not necessarily representative – samples of respondents, which challenges the statistical validity of the results.

Unavailability

Gaps in data availability have led to a reliance on extrapolated values.

CITY-LEVEL INDICES

Although the primary focus of our research is GDP (a national metric) and going beyond GDP, it is valuable to explore city-level indices that also seek to capture progress beyond economic growth. We reviewed nine widely recognised indices and frameworks.[5] More than three-quarters include indicators related to the natural environment and sustainability; more than half cover health, education and skills; and more than half also cover culture, entertainment and mobility. For example, UN Habitat's Global Urban Competitiveness Report measures the economic and sustainable competitiveness of cities globally, looking at economic, environmental and cultural interactions; liveability; research and development; and accessibility (Pengfei *et al*., 2021).

Similarly, IMD's Smart City Index assesses residents' perceptions of cities' abilities to apply technology to enhance the benefits and diminish the shortcomings of urbanisation (IMD, 2023). With an additional focus on the future, the Kearney Global Cities Index tracks how cities grow and plan for their future status as global hubs along five dimensions with different weights: business activity (30%), human capital (30%), information exchange (15%), cultural experience (15%) and political engagement (10%) (Kearney, 2022).

Likewise, the Arcadis Sustainable Cities Index assesses the degree to which a city is sustainable, including in the areas of education, tourism and ease of doing business (Arcadis, 2022). The Global Power City Index assesses and ranks the world's leading cities according to their ability to attract people, capital and businesses (Mori Memorial Foundation, 2022). Focusing on quality of living, the Global Liveability Index evaluates which cities around the world offer the best and the worst living environments (EIU, 2023). While it is meant to inform multinational corporations on how to compensate expatriate employees, Mercer's Quality of Living City Ranking evaluates living conditions based on various factors that affect quality of life (Mercer, 2019). The Numbeo Safety Index assesses cities' level of perceived safety, gathering data through an online survey (Numbeo, 2023).

Exploring these indices provides insights into the diverse approaches that have been adopted to gauge progress beyond economic growth and warrant consideration in future discussions about moving beyond GDP.

[5] The Arcadis Sustainable Cities Index, the EIU's Global Liveability Index, the Global Power City Index, the Global Urban Competitiveness Report, the IESE Cities in Motion Index, the IMD Smart City Index, the Kearney Global Cities Index, the Mercer Quality of Living City Ranking and the Numbeo Safety Index by City.

RECENT AND UPCOMING DEVELOPMENTS

Countries globally have been adopting measures complementary to GDP.[6] These approaches vary in terms of metrics, operationalisation, reporting and governance. Some countries – as in the case of the United States – have cities, counties or states that have adopted more than one approach. Across countries globally, 11 key themes were identified, each with its distinct set of metrics: children and young people; environment and sustainability; culture, recreation and leisure; economic life and prosperity; education, knowledge and creativity; well-being and material welfare; health; work and leisure activities; fair work and business; international engagement and reputation; and poverty.

Approaches to measuring progress beyond GDP at the regional, country and city levels have been widely documented in regional and country websites and publications. Consequently, in this report, we focus on the more recent advancements since 2021. Broadly, however, country-level approaches are diverse and some are more expansive than others. Some cover a set of dimensions that include market and non-market components while some focus only on one of these components. Some countries include societal priorities and consider final outcomes rather than intermediary outputs as measures of progress and/or include subjective metrics to capture how people feel about their lives. Some countries use surveys and some use interviews or other secondary sources of data to measure and report on progress. Some report on outcomes at the individual, household and community levels, and some emphasise sustainability for future generations. Some have adopted existing global indices, and some have retained the independence of dimensions and kept them separated in a dashboard or combined some.

Countries have adopted varied strategies to embed the results of their respective country-level frameworks on progress into government decision-making. For example, Finland and New Zealand have appointed entities with executive powers (i.e. ministers) to enact initiatives and regulations with a well-being lens. Wales has appointed a consultative commissioner who has influenced policy development.

[6] We reviewed Australia, Belgium, Bhutan, Canada, China, Ecuador, Finland, France, Germany, Iceland, Italy, the Netherlands, New Zealand, Scotland, Sweden, the United Arab Emirates and the United Kingdom.

Australia and Iceland have used insights from their measurement to actively influence their policy development and budgeting decisions. Canada and Scotland have appointed bodies to strengthen the role of well-being in their respective policy development processes. The United Arab Emirates (UAE) has established the National Wellbeing Council (www.hw.gov.ae) along with a National Wellbeing Strategy (MOCDUAE, 2023) that aligns the efforts of different government entities.

Since 2021, several high-profile initiatives have also been announced or launched, particularly since the United Nations published the report *Our Common Agenda*, which calls for the international community to look at 'activities and outcomes that a society truly values and then use the data to better inform ... policy and financial decisions' (United Nations, 2023a, 13).

To support the European Commission and EU member states in moving beyond GDP, the European Economic and Social Committee (EESC) released a statement on a decision made in March 2021 proposing a concise dashboard that would supplement GDP along with improvements to indicators that track climate change (Dandea, 2021). The EESC proposed 14 indicators, based on doughnut economics (https://doughnuteconomics.org), to inform decisions and policies related to the circular economy, addressing environmental sustainability, well-being and resilience (Dandea, 2021).

The EESC recommended that without dropping important commitments – such as the 8th Environment Action Programme monitoring framework, the Social Scoreboard, the SDGs or the European Green Deal dashboard (Eurostat, n.d.) – by 2030 the EU member states should each have developed a dashboard selecting relevant UN or OECD indicators per their needs (Dandea, 2021). In response, in November 2021 at an EESC hearing, the ZOE Institute for Future-Fit Economies proposed an EU-wide dashboard with 30 indicators (Barth, 2021) that would shift the focus from economic growth to sustainability, well-being and resilience (Barth *et al.*, 2021). Furthermore, the European Parliament held a 'Beyond Growth' conference in May 2023 with 20 members of the European Parliament; supporting research was presented highlighting the complexity of the topic and the absence of a one-size-fits-all response in moving beyond GDP (Jensen, 2023).

In the United Kingdom, the Measuring National Well-Being initiative was launched in 2010 (ONS, 2023). Then, in May 2022, the United Kingdom introduced two new approaches designed to be inclusive measures of progress: gross inclusive income (GII), which reports on other income streams not included in the national accounts, and net inclusive income (NII), which adjusts GII by accounting for the depreciation of natural assets. The first official annual reports including GII and NII (for 2021 and 2022) are planned to be released in the first quarter of 2025 due to issues with the availability of relevant data (ONS, 2022). In May 2023, the Office of National Statistics released an initial set of metrics looking beyond GDP, integrating well-being alongside GDP (Stickland, 2023).

In 2022, Australia introduced a new set of indicators to track progress on prosperity and well-being with an emphasis on health, education and the environment. Referred to as the Measuring what Matters framework, it is Australia's first national well-being framework (Australian Government, 2023). Australia plans to publish an online dashboard, which is intended to be updated annually with what matters to Australians, and has announced plans to embed the framework into policy-making and other government decisions (Australian Government, 2023, n.d.).

Prime Minister Mia Mottley of Barbados held a high-level gathering in Bridgetown, Barbados, which led to the Bridgetown Initiative (Ministry of Foreign Affairs and Foreign Trade, Barbados, 2022). The initiative is a call to come up with a way of meeting the immediate financial needs of the Global South and vulnerable countries in the face of ongoing and future crises. It also argues for the transformation of the financial system and efforts to address the urgent requirements of countries facing debt issues and liquidity difficulties. It further argues that training is needed to help countries achieve the SDGs as the international financial system is no longer fit for purpose (Prime Minister of Barbados, 2022). With the aim of making international financial institutions more representative, equitable and inclusive, the initiative calls for a new international trade system that supports green growth. This system would either decouple the international financial system from developing economies (which commonly have to borrow at rates of up to 14% and pay more than 20% of their revenue to service their debt) or align the financial system to the world today (Prime Minister of Barbados, 2022).

Since the launch of the Bridgetown Initiative, progress has been achieved in various areas, notably through an agreement to set up a loss and damage fund during the 27th UN Climate Change Conference (COP27), held in December 2022 in Egypt (UNFCCC, 2022). The Paris Summit, held in June 2023, aimed to put in place agreements and mechanisms to enable vulnerable countries facing climate-related risks to access finance (Focus2030, 2023). It also set the foundations for reforming the international finance infrastructure to address climate change, biodiversity and development challenges, particularly in the Global South (Heine, 2023), and for rethinking policies in favour of climate and the planet, digital technologies and women's empowerment (Focus2030, 2023).

At the 2022 annual Group of Twenty (G20)[7] summit in Indonesia, the Think20 research engagement group put forward five research-based policy recommendations. One of these was 'making the economy more inclusive and people-centred' (Think20, 2022a). A key element of this recommendation was to move beyond GDP through the measurement of inclusive wealth and well-being using both the stock of assets and the value produced and consumed through those assets (Think20, 2022b). Another of the five recommendations was to form a working group that would agree on a concise set of relevant indicators that would be monitored alongside GDP for the G20 countries (Think20, 2022b).

The United States has since released the National Strategy to Develop Statistics for Environmental–Economic Decisions for public comment (White House, 2022b). This strategy lays out the country's plan to officially measure natural capital and include it in its own SNA, using the SEEA as a basis, starting with pilot accounts in 2023 and with the trials continuing until 2036 (American Economic Association, 2023). Finally, a significant milestone was reached during COP28, held in December 2023 in Dubai, UAE, addressing the $6 trillion climate financing gap in developing countries by 2030 (UNFCCC, 2023) enabling the aforementioned commitments to the loss and damage fund announced at COP27. Shortly after, the World Economic Forum published the 'Future of Growth report' in 2024 (WEF, 2024) along with the launch of the 'Future of Growth Initiative'—a two-year project aimed at enabling global action— to identify alternative approaches to economic growth (WEF, 2024).

[7] Made up of 19 countries and the EU.

Future

The Intersecretariat Working Group on National Accounts (ISWGNA)[8] – set up by the United Nations Statistical Commission and composed of five members – and the Advisory Expert Group on National Accounts (AEG) – composed of 16 members[9] (UNSD, n.d.-d) – have been working together on an update to the 2008 SNA that is forecast to be released in 2025 (UNSD, n.d.-e). While there have been several updates to the SNA since its launch (Zwijnenburg and Rompaey, 2021), the limited available information on the 2025 update suggests that it is intended to align the SNA with the economic developments and realities of the 21st century, such as new economies and value chains, and the impacts of digitalisation and evolved globalisation (UNSD, n.d.-f). Whereas it will retain aspects that it is sometimes criticised for, such as alignment with the SEEA (Harper, 2022), it will also update key elements related to well-being, sustainability, insurance and pensions, the informal economy, Islamic finance, and new and evolved financial instruments such as ESG investing and climate finance (UNSD, n.d.-e). Together with the anticipated United Nations' Summit of the Future, which calls on members states to consider metrics beyond GDP for progress (United Nations, n.d.), the SNA update represents a significant change directly relevant to the ongoing debate on transitioning beyond GDP.

Today's approaches in looking at progress beyond GDP differ in terms of their dimensions and valuation methodologies, they also vary in the extent to which they include or exclude GDP, how prescriptive they are, the degree to which they have been implemented, how people and planet are integrated into their approach, and how they are embedded within existing governance, decision-making and institutional structures – if at all.

Despite many reports, papers, points of view, public discourses, indices, approaches, events, and calls to define and measure progress in moving beyond GDP, global advances on this topic have stalled. To the outside observer, GDP is simple and transparent, and appears to provide a global comparable standard; this should not be underestimated as it is a key strength of GDP. **Going beyond GDP will be far more complicated than simply monitoring production and economic flows, complex interdependencies between people and planet. Core topics up for discussion include data quality, weighting, methodology, transparency and coverage.**

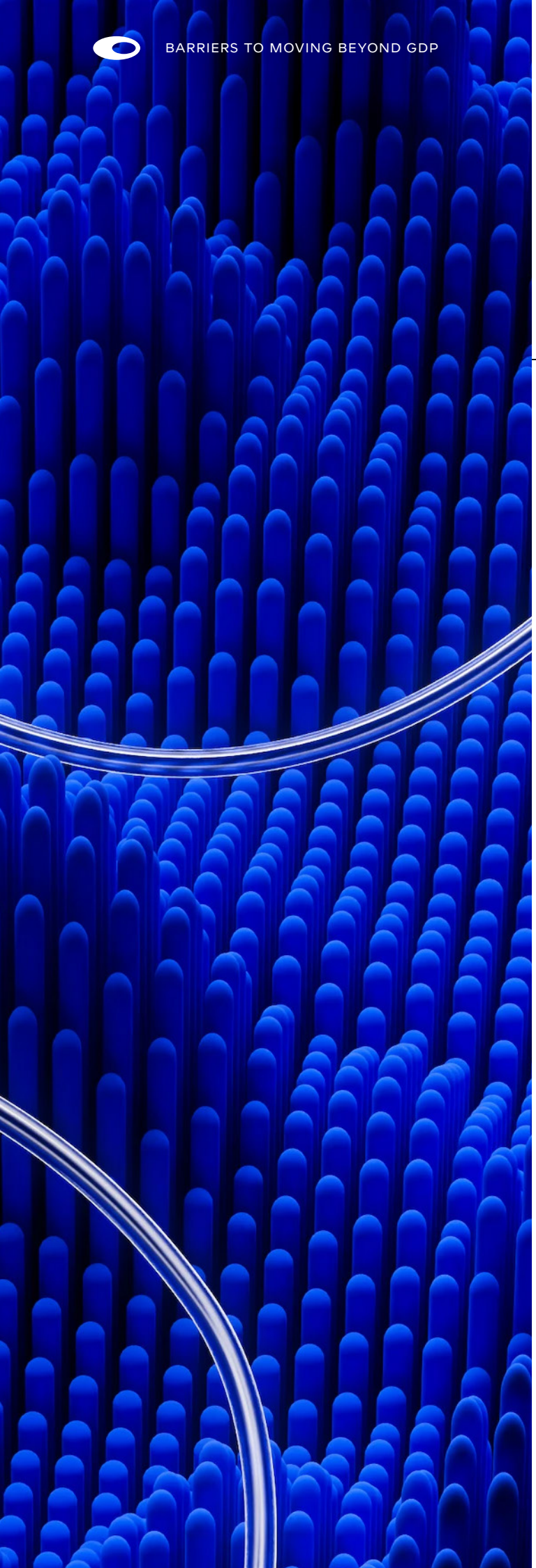
[8] Set up by the United Nations Statistical Commission and composed of five members: the European Commission, the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Bank.

[9] The members hold posts for at least three years and have supported the ISWGNA on the SNA updates since 2002.

3

BARRIERS TO MOVING BEYOND GDP

→ Despite efforts, there are non-trivial challenges that have slowed the transition beyond GDP



One of the questions we sought to answer as part of our research and discussions with global experts was: when it comes to moving beyond GDP for progress measurement, **what are the barriers to scalability and how might we overcome them?** In other words, why has moving beyond GDP – for decades – been slow and fragmented, and yet remained at the centre of global discussion and ongoing debate?

While we identified four key barriers, two of them are especially significant and part of the critical path in the transition beyond GDP. The first is the lack of agreement around the concept of progress and theoretical underpinnings of economic growth.[10] The second is whether it would be best for new measures to complement, replace or extend/improve GDP. Two additional barriers encompass practical aspects of how, what and when dimensions are incorporated (including trade-offs, weights and pricing – where applicable), and different levels of buy-in concerning moving beyond GDP.

Besides Bhutan (www.gnhcentrebhutan.org), the global position has been that it is predominantly economic growth that leads to greater well-being at a societal level. However, this has been brought into question with persistent inequalities, inconsistent climate action, and the financial and health crises of the 21st century (Jensen, 2023).

In parallel, other perspectives have emerged.

[10] Also referred to as the growth debate.

BARRIER 1: THE 'ONTOLOGY' OF ECONOMIC GROWTH

For over 50 years, US economist Herman Daly championed the idea of the steady-state economy, arguing that a constant focus on economic growth is a losing battle within the confines of ecological boundaries (Marchese, 2022). Along similar lines, research by Earth4All indicates that after a certain point, GDP growth does not result in greater well-being and may continue to mask inequalities and hide critical environmental degradation (Dixson-Declève and McLead, 2023). Some advanced economies, particularly in the EU, have also been rethinking the definition of socio-economic progress means post-growth (Widuto *et al.*, 2023): shifting focus from development and lifting individuals out of poverty in the post-Second World War era to a focus on well-being, equity, better government services, greater welfare and self-realisation (Hulten and Nakamura, 2022).

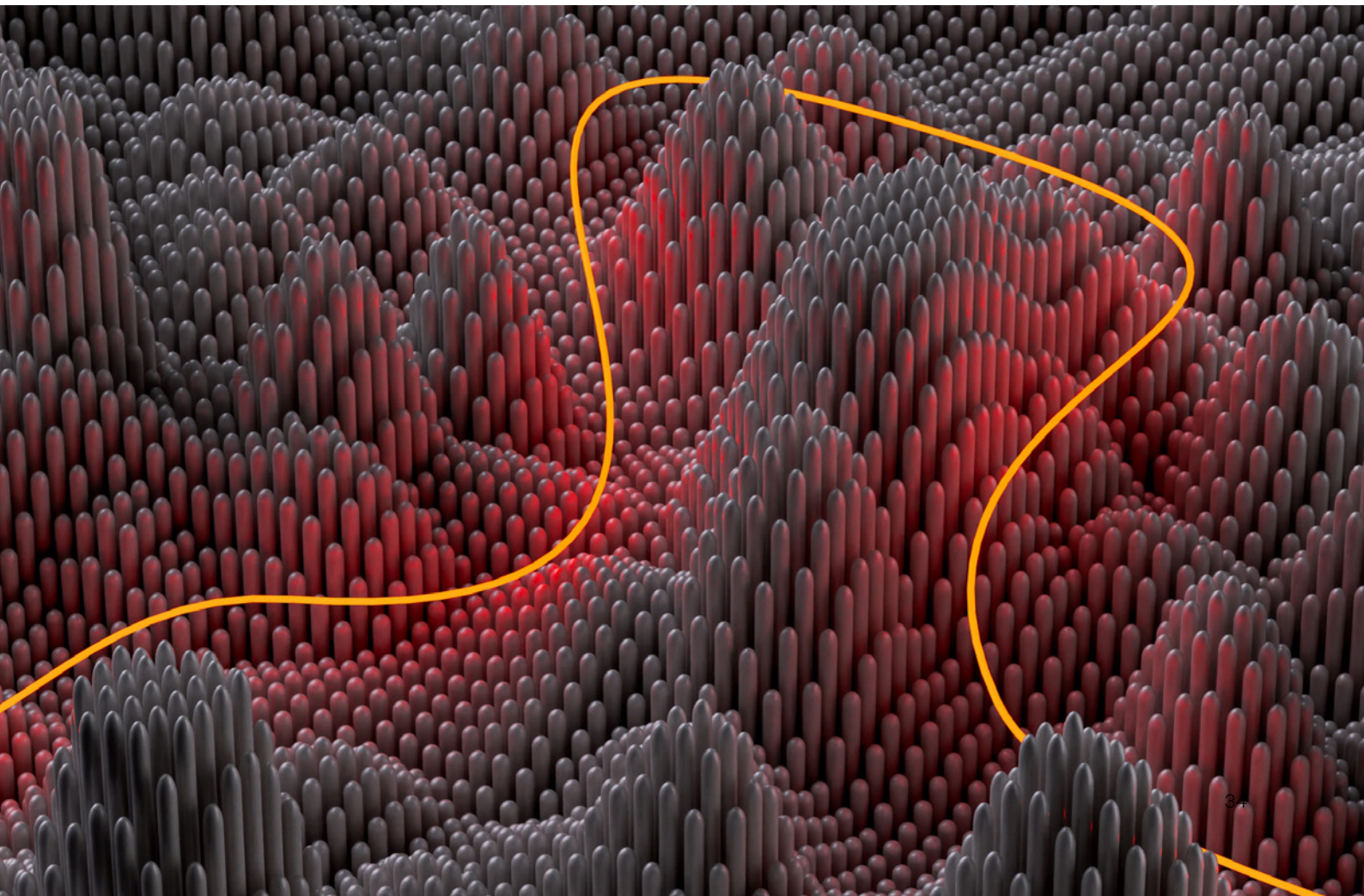
However, this debate is not occurring everywhere, particularly not in countries that have only just started capturing measures and proxies for GDP. Indeed, GDP remains a critical gateway to global economic participation and access to international growth finance leading to improved living standards, decreased poverty and increased tax revenues (Widuto *et al.*, 2023).

With countries at various levels of economic development, financial need and maturity, agreeing on one concept of growth is not a trivial matter (Jensen, 2023). If the answer is decided upon too hastily, there may be significant impacts and without agreement on this point, efforts to move beyond GDP will remain fragmented.

BARRIER 2: THE ROLE OF GDP IN THE FUTURE BEYOND GDP

In looking at approaches from around the world that aim to measure **progress beyond GDP**, there are noticeable disparities on whether or not GDP should be part of that equation. The lack of global consensus on approaches may be due to the legacy of GDP as historically, advanced economies have viewed economic growth as essential for driving human and social development.

For example, the SNA has evolved to increasingly incorporate indicators linked to welfare, covering topics such as disposable household income and consumption per capita, and including balance sheets to assess wealth while maintaining GDP as a core aspect of the SNA; the 2025 update to the SNA will similarly be a crucial update in this respect (UNSD, n.d.-e). Looking to the future, the UN's *Our Common Agenda* proposes the use of complementary measures to GDP (UN, 2021). However, if efforts to move beyond GDP are restricted to options that simply augment an existing system, many of the challenges posed by GDP, particularly on monetisation, would still be present.



Looking at other potential alternatives to GDP mentioned in the literature, global benchmarking, and expert discussions, the extent to which GDP is included in each is subject to both the research team and their underlying stance on economic growth. Posed alternatives can be grouped into four categories:

- **Index:** An index is a number calculated from a weighted total or other combinations of underlying elements and factors deemed important to progress and may or may not include GDP. With comparability as a key objective, indicators and relative weighting criteria remain the same over time. Examples include the Better Life Index and the HDI.
- **Framework:** An example of a framework for moving beyond GDP is found in New Zealand, where what is measured or tracked is embedded in government decision-making and used to reframe economic policies and budgetary priorities. Such an approach may or may not include GDP.
- **Systems of money-denominated accounts:** Another alternative consists of converting a set of well-being components into a single (monetary) unit of measure. The Genuine Progress Indicator (GPI) is the closest to being an example of this alternative, although it is not devoid of GDP as it accounts for what benefits or harms well-being through personal consumption data while taking into account income distributions. The GPI is designed to evaluate the degree to which economic well-being is sustainable, rather than economic activity alone (Goossens *et al.*, 2007).
- **Dashboard:** In the context of moving beyond GDP, a dashboard is a disaggregated collection of indicators analysed in conjunction in order to extract a clearer picture of a country's quality of life and socio-economic performance. The use of a dashboard is based on the idea that social progress and welfare are multidimensional and cannot be adequately represented by a single measure. The EU's social indicators are an example (European Commission, n.d.)

It is important to acknowledge, however, that part of the desire to retain GDP comes from the necessity of maintaining a historical record of progress. This may only be achieved by incorporating GDP, in some way, in the future beyond GDP.

BARRIER 3: CONCEPTUALLY VARIED STANCES ON WELL-BEING

GDP is a good indicator for economic health but not for individual well-being (Hulten and Nakamura, 2022). One of the several arguments for going beyond GDP is that there is a need to include well-being in how we gauge progress (Stiglitz et al., 2009). However, as a social science phenomenon, well-being – including its measurement – is complex (Arcagni *et al*., 2021). Any attempts to modify GDP may still be short term in focus as well-being will always fall outside the scope of GDP (Nature, 2023) particularly where monetisation is concerned.

Today's approaches to well-being when moving away from GDP as a sole measure of socio-economic progress are underlined by theoretically varied conceptual models (Robert Wood Johnson Foundation, 2019). As a result, there is a lack of comparability across contexts, with diverse answers to the question of 'what is well-being?'. As a result, it will not be easy – if it is possible at all – to determine a one-size-fits-all approach on well-being, nevertheless, well-being is only one aspect of moving beyond GDP for progress measurement (Robert Wood Johnson Foundation, 2019).

BARRIER 4: HOLDING ON TO GDP

While many papers and thought pieces cover past and existing frameworks and models for an alternative to GDP, efforts in actually moving away from GDP have stalled, i.e. we are stuck on the narrative of GDP. It may be that the world is protecting the current system instead of engaging in out-of-the-box thinking and applying the necessary creativity, innovation and imagination to finally move beyond GDP. Among the research articles and publications reviewed for this report, half called for or covered an alternative to GDP most of which called for an approach that had been tried and tested and used either in research or in policy-making somewhere in the world. Fewer than one-tenth of the covered articles and publications covered or called for an enhanced or extended form of GDP. Remaining articles covered conceptual models and approaches that were untested or that departed from proven, well-researched concepts. Yet, we still have not gone beyond GDP.

Support for a new approach to measuring and reporting on progress beyond GDP – along with global (media) narratives – also varies worldwide, with particularly low levels of support found in countries that have only recently made significant strides towards capturing GDP and related proxy measures. Searches on Google Trends[11] to compare the term 'GDP growth' to the terms 'beyond GDP', 'well-being' and 'natural capital' globally from 2008 to the present (under all categories) show that 'GDP growth' is – on average – mentioned 32 times more often than any of the other three terms.[12]

[11] Google Trends can be used for nowcasting and to find links between keywords and other phenomena under study (Woloszko, 2020). While not perfect, Google Trends can provide general indications about topics of interest.

[12] Based on a Google Trends search conducted on 11 July 2023.

4

THE GLOBAL TRANSITION BEYOND GDP

→ As the world changes rapidly, foresight can better guide policy decisions related to moving beyond GDP

Around the world, and increasingly over the next 50 years, we are likely to see rapid, sudden and radical changes occur, with countries and communities experiencing extremely different parallel realities and significant socio-economic and environmental differences (DFF, 2023b). In such a world, foresight is paramount and relevant scenarios can help us explore plausible futures, identify and anticipate enablers and barriers to success, and develop relevant policies that guide action. Scenarios can help us to imagine what could happen in an unpredictable future.

In what appears to be a substantial transformation, moving beyond GDP will require a shift from existing narratives and the adoption of an interdisciplinary approach to conceptualise and implement more inclusive means of global progress measurement and reporting. As a result, we pursued an aim to chart a global roadmap for the transition beyond GDP as a foundation for a global action agenda on the topic. In doing so, we selected a backcasting approach that involves envisioning a preferable future and then looks back to the present, complemented by the development of scenarios that help us imagine how the global transition beyond GDP may unfold.

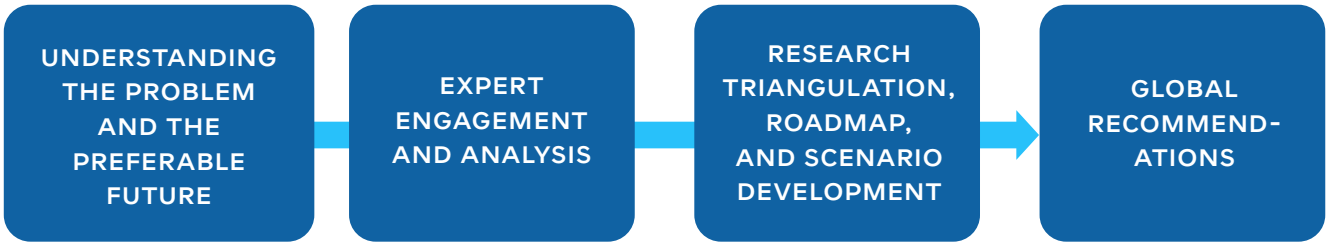
APPROACH TO FORESIGHT

Backcasting is an approach to foresight that was originally used in devising policy recommendations on desirable energy futures (Robinson, 1982). Besides energy (Hines *et al*., 2019), backcasting has been more recently used for sustainability futures (Quist *et al*., 2011; Svenfelt *et al*., 2019). Backcasting is used when dealing with complex phenomena with inherent uncertainty and ambiguity (Quist and Vergragt, 2006) – such as moving beyond GDP. Backcasting is based on a preferable future or future vision, and is not prescriptive as a method; instead, it is an approach that is about 'looking back at how a desirable future can be achieved' (Quist and Vergragt, 2006: 1028) and not a detailed strategic plan. Backcasting may uncover various policy options or decisions and even undesirable futures that may require a shift from existing dominant narratives (Quist and Vergragt, 2006).

The global transition beyond GDP is inevitable. Over the next 10 to 20 years, an alternative measure of progress – more reflective and inclusive of new and future economies, environmental imperatives, and societal developments – will be required as the world works together on common goals such as the SDGs, climate commitments and other action; the rising emphasis on sustainable development, social inclusivity in financial instruments (such as debt swaps and green bonds), and the introduction of new channels for financial aid for climate and development. Given the ongoing calls to move beyond GDP and debates about what this would entail, we were interested in exploring how the global transition beyond GDP may evolve.

Recall that we define the global transition to 'beyond GDP' as the shift from GDP as the sole standard for determining national progress and development. The backcasting approach used consisted of four main stages:

By defining a preferable future and exploring a roadmap and plausible transition scenarios, we hope to add our voice to the many significant efforts and considerable global advances that have been achieved on moving beyond GDP so far.



PREFERABLE FUTURE

The drivers of the transition beyond GDP were mentioned in the section '**The Case for "Beyond GDP"**'. In summary, there are six key concerns:

- **Outdatedness:** GDP is an outdated baseline of analysis as it excludes new value forms and economic streams (*Economist*, 2016).
- **Resource depletion:** Growth is occurring at the expense of natural assets and/or environmental quality, with degradation occurring at a rate not – in some countries – sustainable for future generations (Brand-Correa *et al.*, 2022).
- **Disparity between GDP and prosperity:** GDP growth has not always led to greater prosperity (Prasad and Castro, 2018).
- **Need for a shift that is also people-centric:** There is a need to make the gauge of progress more inclusive and people-centric than what it is today (Think20, 2022c).
- **Increasing disconnection between GDP and reality:** There is a disconnection between GDP as a measure of progress and the realities of the world today – including global challenges such as income inequality and financial stability – and, likely even more so, the world of tomorrow (Vanham, 2021).
- **Growing gap between measurement practice and technological progress:** Along with the challenges associated with technological advances – including the Internet of Things (IoT), artificial intelligence and automation – technology has and will continue to have an impact on the economy (Chui *et al.*, 2023; Cummings *et al.*, 2018; Meltzer, 2018; Szczepański, 2019). This will reshape the fields of knowledge and practice in economics, behavioural economics and finance (OECD, 2021; Kalamara *et al.*, 2020).

The question is, what might a preferable future look like?

Even among those who believe that a measure of output in an economy is a sufficient indicator of both economic performance and welfare, there is increasing consensus around the idea that GDP is an inherently limited accounting measure as it does not include non-monetary or informal activities. Even when non-monetary activities are included, there are challenges in pricing, weighting and aggregating non-monetary activities. In turn, even when GDP per capita is used, it still masks inequalities. This led economists at the Paris School of Economics to develop a framework to analyse wealth and income distribution, forming the basis of the World Inequality Database (https://wid.world), which provides an annual snapshot of inequality based on changes in wealth and income. This is achieved by integrating countries' traditional national accounts with distributional national accounts produced from national survey data (where available) on income, expenditure and wealth with tax data (World Inequality Lab, 2021).

Emanating from our expert discussions was a **wish list** for what the future of measuring progress beyond GDP may encompass:

- a balance between the need for a comprehensive dashboard with a local perspective and the need for an aggregate to enable global comparison;
- a global consensus on the dimensions that should be included;
- an approach that considers foresight and can adapt to future technological and societal advances;
- a system that would take account of a country's financial, human and environmental assets and not just movements – such goods and services produced and consumed – affecting them;
- an approach that is concerned with the future – assessing the capacity of the economy to generate well-being and progress in the future;
- a collective view on pricing, value and trade-offs;
- a method of country comparison that would not disadvantage some countries over others;
- a system that would avoid a large set of unsynchronised indicators; and
- a compelling narrative that would set a positive and attractive direction for the future.

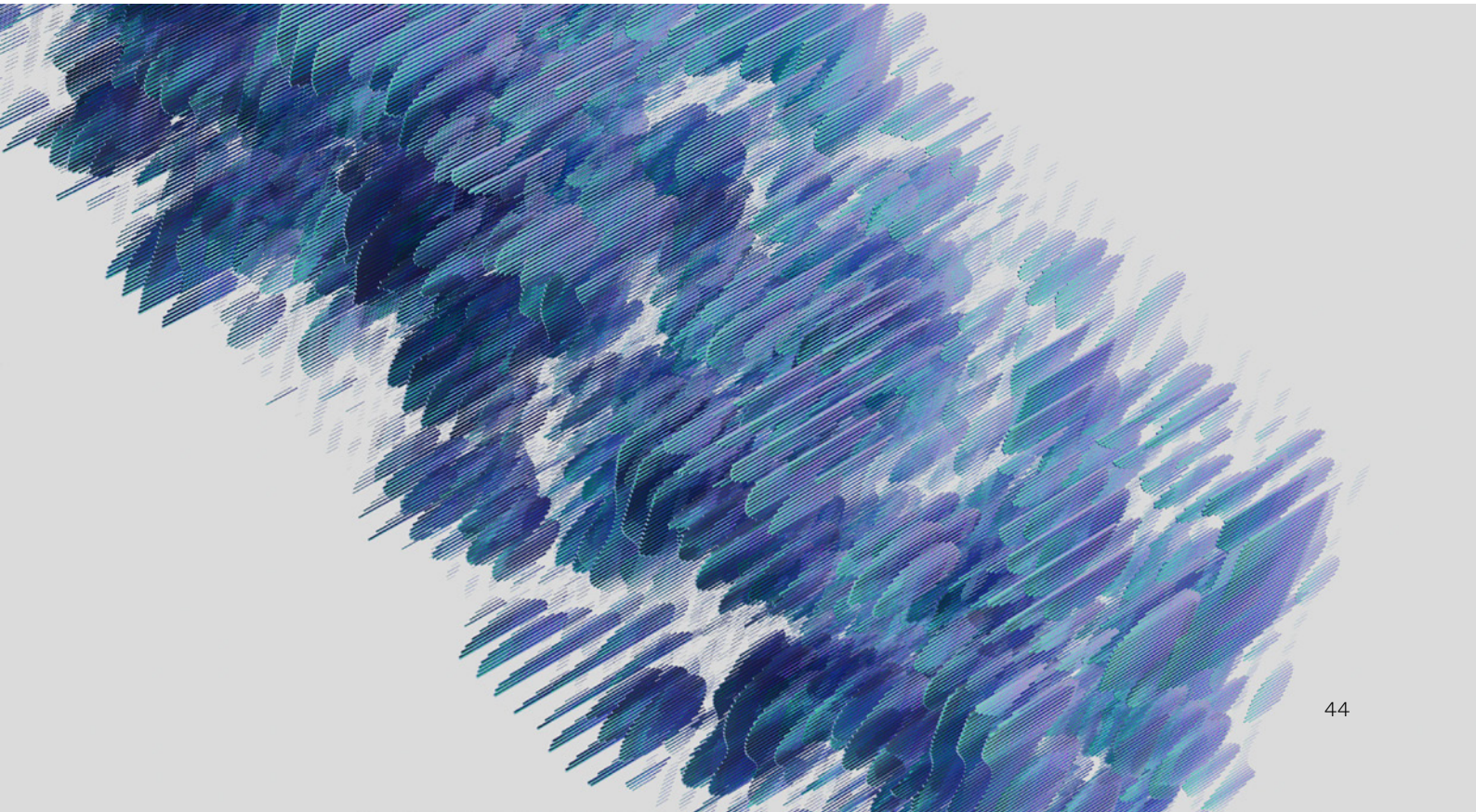
In summary, the **preferable future is one where progress beyond GDP is measured and reported on in a manner that is practical and feasible for all countries to implement; is adaptable to technological and societal shifts; resonates with and is relatable to the global community; and encompasses the future through reporting on financial, human and natural assets and not just goods and services produced and consumed.** What resonated among the experts was that while we might not end up with a perfect alternative, the aim is to have one that is better than GDP as some aspects of the wish list will take more time – and technological advances – to materialise.

A ROADMAP FOR THE GLOBAL TRANSITION BEYOND GDP

Our aim was to present a roadmap[16] that can guide an action agenda for a global transition beyond GDP. We chose 2044 as a vantage point for the complete realisation of the preferable future for two reasons:

- The period from now to 2044 matches the length of time it took to go from the introduction of GDP after the Great Depression to its operationalisation in 1953 (UNSD, n.d.-c). It is possible to argue that with today's advances in technology along with social media, multilateral organisations and governance structures, the process of achieving consensus and implementation should be shorter, but this is not certain to be the case.
- The year 2044 will be the 100th anniversary of the Bretton Woods Conference, which is both symbolic and an opportune time for the world to have adopted a new way of reporting on progress.

[16] This represents one of several potential roadmaps that a foresight professional might define based on a set of strategic options.



7 **Preferable future (2044)**
National progress is measured and reported on in a manner that is practical and feasible for all countries to implement; is adaptable to technological and societal shifts; resonates with and is relevant to the global community; and encompasses the future through reporting on financial, human and natural assets and not just goods and services produced and consumed.

6 There is a clear and effective system of **reporting** – enabled by technological advances – that makes reporting efficient for all nations.

5 International governmental and non-governmental organisations (NGOs) – both those key to the global economic and financial system and those that have traditionally relied on GDP for decision-making on the global scale – **embed and implement** progress-centric criteria into their conditions, agreements, and requirements for economic and financial participation.

4 **The framework is used to define critical measures of progress**, including both stock and value produced and consumed using capital, human and natural assets, and **interlinkages and spillovers** between dimensions, if any. It is ensured that the framework is adaptable, given the changing global economy and society. Each of the dimensions and underlying measures is tested to ensure that they align with the *preferable future*. During this phase, measures are to be established and aided by artificial intelligence (AI), informed by a clear understanding of assumed technological advances and related social science concepts, to anticipate potential developments and their implications for the framework in the distant future.

3 The global working group **builds a framework with relevant dimensions** either based on a new framework or one that is fully or a composite of existing international indices and country- or city-level approaches. It may also include or exclude GDP. The acceptance criteria include alignment with the *preferable future* and are unbiased to any one approach. This means that additional research may be necessary – for example, to accurately identify ways to capture what is unaccounted for in GDP or in the 2025 SNA update.

2 **A global working group made up of policymakers, interdisciplinary researchers, economists and statisticians unpack the known challenges to GDP** – including challenges related to trade-offs, weights, monetary and non-monetary indicators, and inclusions – **and agrees on an assessment methodology** that will ensure objectivity, transparency and comparability while also embedding levels of economic development.

1 **A global network of policymakers, interdisciplinary researchers, economists and statisticians come to an agreement on what global progress means.** This network agrees on a set of shared principles and a compelling narrative on moving beyond GDP, establishing a foundation for global dialogue and the transition beyond GDP.

PHASES

SCENARIOS FOR THE GLOBAL TRANSITION BEYOND GDP

As depicted in the section "**'Beyond GDP' today**", and despite a multitude of different approaches and methodologies, calls for advancement, and more than a decade of serious consideration by the academic, government and civil society communities, GDP continues to be the primary reference for global and national socio-economic progress. Additionally, while there have been efforts around the world to move beyond GDP, these have thus far remained complementary to GDP and none have been scaled globally; the situation therefore remains stagnant.

Based on the preceding roadmap for the transition beyond GDP, the transition begins with a unified, compelling global narrative based on a globally shared understanding of what constitutes progress. This narrative can be disseminated through the media and other forms of communication, initiating a process of education that seeks to propagate this new definition of progress and align the foundational knowledge of economics and finance with it. However, what makes this different from the past efforts?

Scenarios help us to imagine possible futures in an uncertain world, uncovering related opportunities and challenges to guide our action. Based on the insights captured through our research – including both publication reviews and expert discussions – outlined in the next section, we extracted relevant uncertainties and assumptions and explored scenarios to understand how the world may transition beyond GDP.

UNDERLYING ASSUMPTIONS

Through our research, we have identified five assumptions related to the future process of moving beyond GDP. These pertain to **approach, scope, level of jurisdiction, applicability and technology.** While there may be others, we believe these are central to the global transition beyond GDP.

When it comes to **approach**, we assume that **the inclusion – or not – of GDP itself in moving beyond GDP will not be predetermined.** Whether or not GDP is a part of the preferable future, either as a complement or in an improved form, it will remain on the roadmap to the transition beyond GDP. Making a decision to remove GDP too early on would diminish the transformational value of the vision of the preferable future and we would find it difficult to extract ourselves from the current debates on moving beyond GDP. The focus instead is on progress.

The second assumption is **scope**. Several cities – such as Amsterdam (Maldini, 2021), Melbourne (Regen Melbourne, 2021), Vancouver (Vancouver Economic Commission, 2022) and (previously) Santa Monica (Wellbeing Economy Alliance, n.d.) – are innovatively responding to urban challenges and looking beyond GDP in their policy-making (Crisp *et al.*, 2023). Cities play a significant role in national progress, generating more than 80% of global GDP (World Bank, 2023d). As cities are expected to continue to play a central role in national progress (Goldin, 2023), they will also play a growing role in moving beyond GDP. Nevertheless, on the basis that globalisation will continue to advance, the assumption for the global transition beyond GDP is that **irrespective of what cities around the globe do when it comes to moving beyond GDP, progress measurement and reporting will continue to be a national priority**.

The **third assumption** is that **efforts to move beyond GDP will have at least two tiers: global and national**. While we recognise the impact of the regional bloc tier, it will be more significant in regions where there exist organisations that are capable of playing a supportive and coordination role and helping to integrate 'beyond GDP' into the policies and initiatives of member countries (Aiyar *et al.*, 2023). All three tiers might overlap, essentially being identical, or remain distinct while sharing common elements. As a result, the recommendations do not include detailed guidance on how countries should approach the transition beyond GDP.

The **fourth assumption** is that **global values on well-being, the environment and other non-monetary dimensions will evolve** over time and across different contexts, influenced by evolving understandings in the social sciences. As such, concepts related to moving beyond GDP will apply differently across time and geography.

The **fifth assumption** is that while there will always be challenges associated with advances in **behavioural science and technology (including artificial intelligence and automation), technology will enable, and not hinder, the transition beyond GDP.** We also acknowledge the possibility that artificial intelligence – namely, deep learning – may one day take over measurement, analysis and reporting on progress entirely (Zheng *et al.*, 2023).

UNDERLYING UNCERTAINTIES

In previous research, the Dubai Future Foundation (DFF) identified five uncertainties that may impact growth, prosperity and well-being in the future: collaboration, values, technology, nature and systems (DFF, 2023b). While these address growth, prosperity and well-being more broadly, through our research, we have identified nine main uncertainties and essential questions about the future that may influence the how the transition beyond GDP will unfold. **Our research suggests that two of these – cooperation and the system of global economic participation and access to international finance – will have the greatest impacts on the global transition beyond GDP.**

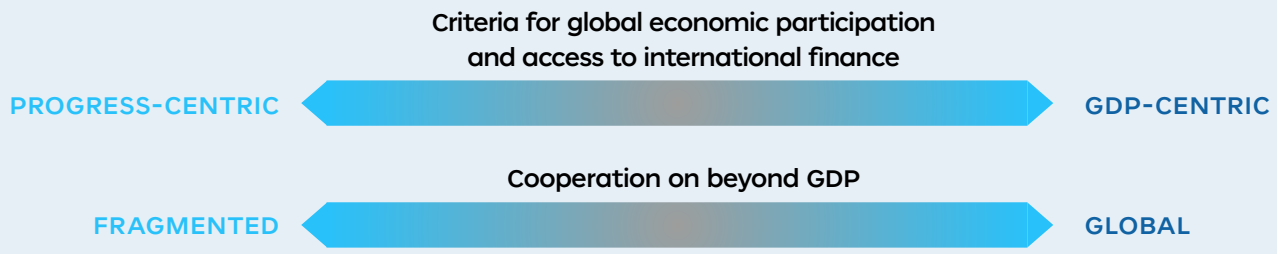
- **Cooperation:** Will nations around the world organise around shared goals, definitions, and monitoring and reporting structures for moving beyond GDP – including on well-being, welfare, growth and progress – or will they organise around poles that represent regional or other shared values?
- **Reporting:** Will reporting on moving beyond GDP be broad and subjective or narrow and specific?
- **Methodology:** Will a new framework for moving beyond GDP be developed or will one be adopted from an existing international index or a country-level approach or city-level approach?
- **Characteristics:** Will the global community be able to design a framework for moving beyond GDP that is comparable, feasible, adaptable and practical?
- **System of global economic participation and access to international finance:** Will the conditions and requirements for global economic participation and access to international finance (including aid, development funding and debt) increasingly shift to become more progress-oriented, as opposed to GDP-oriented?
- **Challenges:** Will we be able to globally unpack and agree known challenges to GDP and to moving beyond GDP – including those relating to trade-offs, weights, monetary and non-monetary indicators, and inclusions – while also embedding various levels of economic development?
- **Definitions:** Will countries agree on what progress means? Will they agree on common definitions of well-being, welfare, growth, etc.?
- **Global narrative:** Will key influencers and media organisations focus on non-economic dimensions of progress and leave GDP behind in the narrative?
- **SNA update:** Will the revised SNA (due in 2025) be accepted as a long-term solution for moving beyond GDP?

TWO CRITICAL UNCERTAINTIES

On **cooperation**, at one extreme, nations agree to cooperate on moving beyond GDP. They recognise that it is an inevitable future and one that is important for global progress in balancing the economy, environment and society. They have a common narrative on moving beyond GDP and understand that they are responsible for agreeing an assessment methodology and a framework for progress that aligns with the preferable future defined here. They share resources and coordinate their efforts in terms of design, implementation and ongoing reporting. They are all committed to progressing beyond GDP while recognising that this will require a large transformation. At the other extreme, no two nations officially agree on a new approach to progress measurement and reporting. Somewhere in between, two or more nations agree to cooperate on going beyond GDP, irrespective of other nations. This may involve regional blocs, in line with how cooperation often takes place today.

On the **system of global economic participation and access to international finance**, at one extreme, instead of relying solely on GDP, criteria and international agreements concerning trade and financial aid focus on alternative measures for progress. This is evident in the transformation of rules and agreements such as the General Agreement on Tariffs and Trade (under the World Trade Organization) and the OECD's classification of official development assistance that reflect this shift. Rules employed by the IMF, the World Bank and possibly even regional development banks, along with other new international agreements and funds set up for climate or societal transformation, also evolve. Trade and foreign direct investment policies are reviewed to ensure they reflect new measures for progress beyond GDP. International agreements that focus on sustainable development, the environment and society also align with new definition of progress. At the other extreme, most of the international economic and financial policies are unchanged with a focus on GDP as the standard metric for progress. New funds aimed at fostering international sustainable development, social development, and environmental action, are either temporary or eventually discontinued.

Figure 2. Critical uncertainties

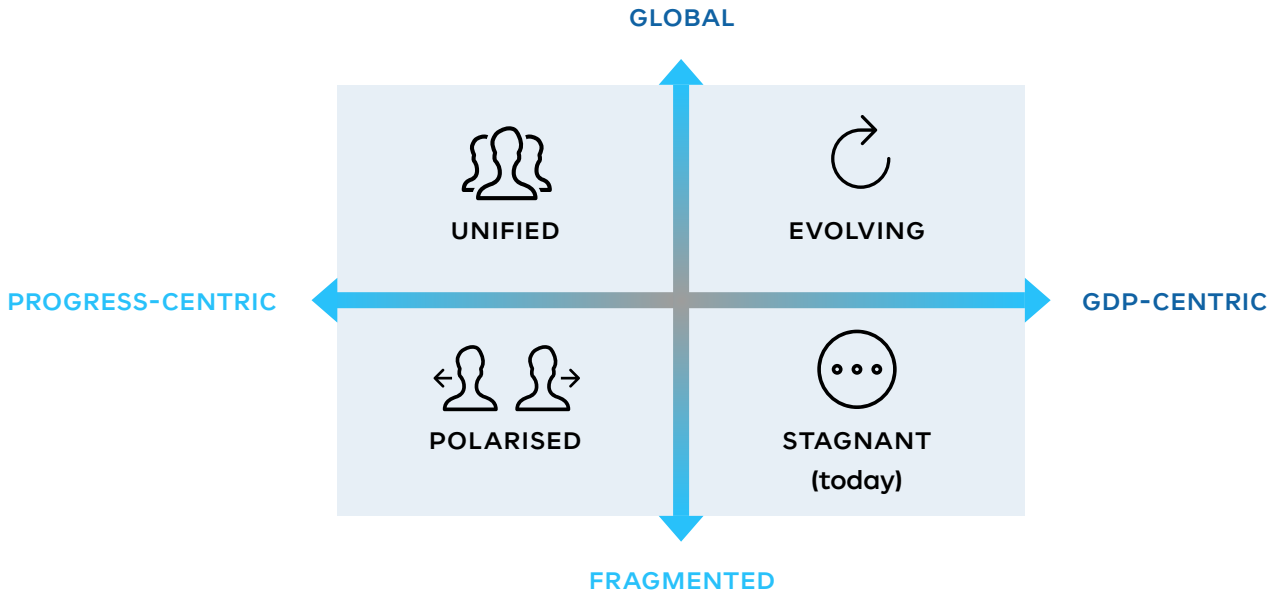


POSSIBLE SCENARIOS

Based on the above, we have identified four possible scenarios for the global transition beyond GDP. Representing guideposts for how GDP may evolve in the future, these exploratory scenarios can help organisations, cities, regions and countries to make decisions that will enable them to benefit from associated opportunities and can guide policy-makers to manage associated challenges. These scenarios, while extreme and an oversimplifications of the complex reality of how the future may unfold, can be used to guide our actions.

In each of the scenarios, we outline the primary drivers and describe what the transition beyond GDP might look like. We also highlight associated benefits and risks. While our overviews are comprehensive, they are not exhaustive. For those interested in understanding the impact of each scenario more deeply, further analysis will be necessary.

Figure 3. Scenarios



UNIFIED TRANSITION

The transition beyond GDP is unified – after extensive consultations, nations agree, through one or more multilateral agreements, on the need to move beyond GDP. Because the requirements for global economic participation and international finance have evolved to be progress-centric, the changes to the way the world measures and reports on progress are globally aligned and reflective of the environmental, societal and technological realities on the ground.

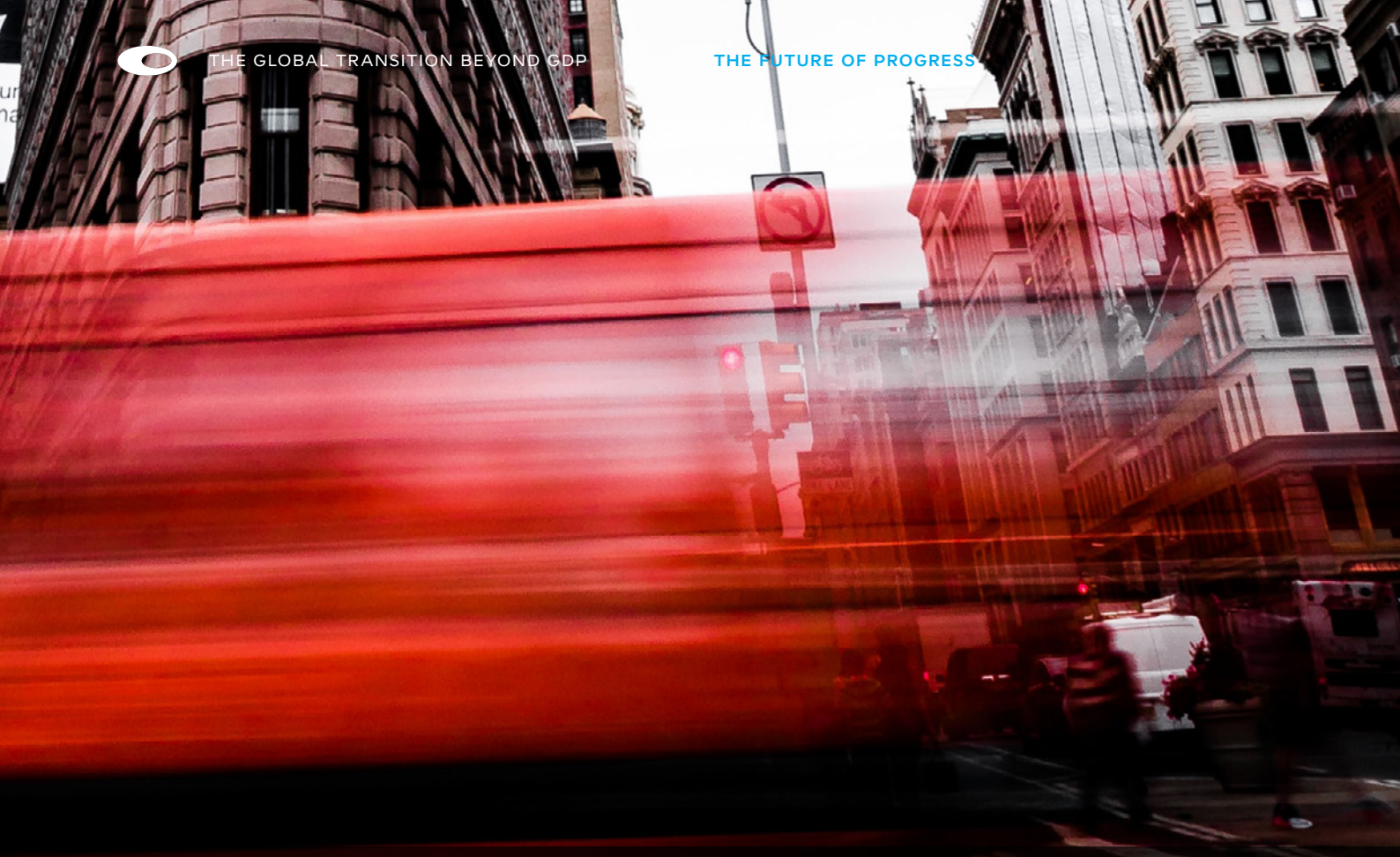
Guided by several multilateral agreements focused on sustainable and social development, the nations prioritise human well-being, environmental sustainability and social equity over solely economic growth. The nations agree that moving beyond GDP is important. While moving away from a system that has been beneficial for many years presents a significant transformational challenge, the essential foundations for the shift are in place. The shift is catalysed by the emergence and operationalisation of one or more multilateral resolutions and agreements. The shift is also supported by international financial and non-financial (intergovernmental and non-governmental) organisations that increasingly emphasise non-economic dimensions of progress over GDP. The nations acknowledge that the SNA update in 2025 was a step in the right direction but agree that it is insufficient to address the long-term challenges associated with relying on GDP.

Global Benefits

- As criteria for aid and lending become more progress-centric, there is likely to be improved distribution of resources, decreased income inequality, and greater consideration of environmental and social factors in economic policies and actions.
- Some countries that were historically perceived as lagging in terms of 'growth' may emerge as global leaders, particularly if they have industries or sectors that contribute positively to societal well-being and sustainability.
- The world shares a unified understanding of what constitutes success and progress – one that both allows comparison and is adaptable for the future.
- Innovations benefiting both people and planet are more evident and may gain greater incentives – both economic and non-economic – making it easier to secure access to certain benefits than before.
- Economics and business education evolves to incorporate elements of progress and related dimensions and measures, rather than only economic growth. Approaches to monetary and fiscal policy also undergo transformation.
- New or revamped financial instruments, models and markets may emerge beyond green bonds, social impact bonds and ESG marketplaces.
- As the non-economic value of natural resources, ecosystems and related services becomes better understood, their economic value may rise, influencing nations' global rankings and success.

Global Risks

- Nations that have only recently adopted GDP may face challenges in rapidly shifting their approaches to data collection and measurement. They may lack the necessary technological or resource capacities to report on their progress, thereby getting left behind.
- Countries that historically outperformed others in terms of 'growth' may find themselves ranking lower.



EVOLVING TRANSITION

The transition beyond GDP is evolving – nations are united on moving beyond GDP, either through a single multilateral agreement or through a growing series of multilateral agreements. However, because the requirements for global economic participation and access to international finance continue to be dependent on GDP, changing the way the world measures and reports on progress is challenging and there is a risk of stagnation. Many recognise that the 2025 SNA update was a positive step in the right direction, but it is generally considered to be temporary, with changes needed to the requirements for global economic participation and access to international finance.

In this scenario, global progress on moving beyond GDP is inconsistent. Despite broad global agreement on the need to move beyond GDP and establish associated multilateral resolutions or agreements, tangible change is slow. The requirements for global economic participation and access to international finance continue to be predominantly GDP-centric, and the international bodies responsible for agreements and rules related to trade, development and aid financing are slow to reassess their guidelines. While nations agree that moving beyond GDP is important, they also recognise the challenges of transitioning from a historically beneficial system. Most view the 2025 SNA update as a short-term solution, inadequate for addressing the challenges of GDP in the long term. As a result, discussions and debates continue, and various global working groups are established to advance the agenda on moving beyond GDP.

Global Benefits

- The established global economic and financial system remains unchanged and progress is measured and reported on through GDP – a familiar approach that has been used for many decades.
- The efforts of nations – particularly low-income nations – that have only recently adopted GDP remain valuable and significant in those nations' development.
- In parallel to nations' commitment to multilateral resolutions or agreements on the shift beyond GDP, researchers and institutions continue to explore alternative methodologies. These efforts extend the path towards the preferable future beyond GDP.
- Some nations, even those least expected to move beyond GDP, may increasingly report on both GDP and 'beyond GDP' metrics.
- The world has a unified understanding of what constitutes success and progress – one that both allows comparison and is adaptable for the future.

Global Risks

- Even though some nations may increase their spending on well-being and environmental sustainability, many may also continue to allocate resources towards areas that increase GDP. As a result, global inequality may persist and progress towards a global sustainable and equitable future may stagnate.
- Ongoing debates that hinder the transition beyond GDP complicate international partnerships and collaborations, especially if some nations prioritise GDP over other metrics.
- There is a disconnection between the 'beyond GDP' narrative and incentives that remain GDP-centric.
- The world arrives at a situation that mirrors the current progress on the SDGs, which has best been summarised by António Guterres, Secretary-General of the United Nations: 'Unless we act now, the 2030 Agenda will become an epitaph for a world that might have been' (United Nations, 2023b: 2).
- All the challenges associated with GDP persist (see 'The Challenge with GDP').

STAGNANT TRANSITION (TODAY)

The transition beyond GDP stagnates – the shift is very slow as nations do not agree on the need to move beyond GDP. The prevailing GDP-centric requirements for global economic participation and access to international finance continue to dominate. This scenario most closely resembles where the world is today, with the exception of a few alliances and regional blocs that have reached a consensus on moving beyond GDP. We consider this to be the baseline.

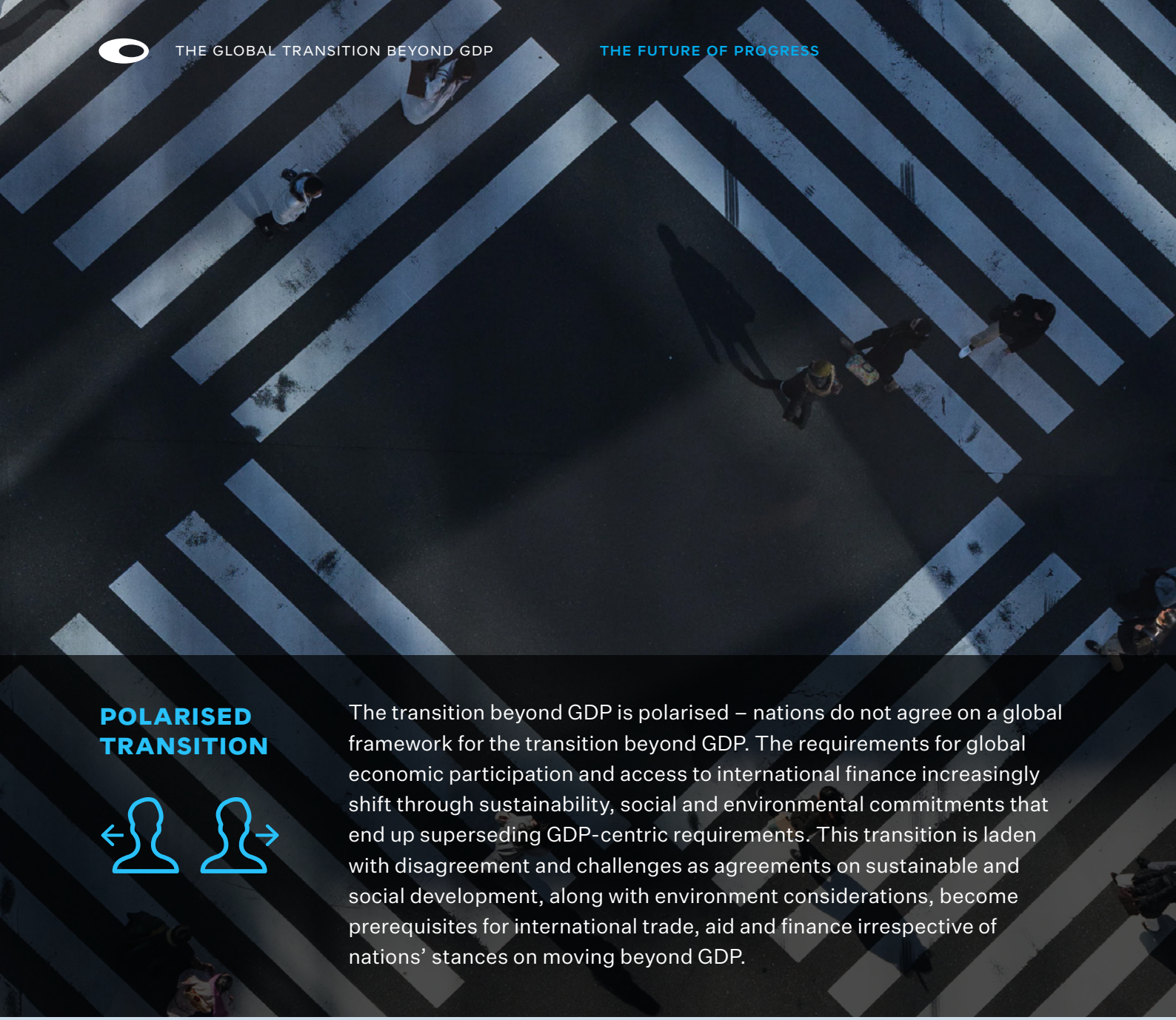
In this scenario, global progress on moving beyond GDP remains stagnant. The requirements for global economic participation and access to international finance are GDP-centric. This means that growth is prioritised over other societal and environmental goals. There may be isolated agreements and efforts on moving beyond GDP between some nations, but the overarching global economic framework continues to prioritise economic growth. While not all nations agree, the 2025 SNA update is recognised by many as a significant achievement addressing many challenges associated with GDP. Improvements to the SNA give stakeholders the comfort of a more inclusive, yet comparable, measure within an existing system that will continue to evolve until it aligns with the preferable future.

Global Benefits

- There is little or no change in the existing global economic and financial system and progress continues to be measured and reported using GDP.
- The efforts of nations – particularly low-income nations – that have only recently adopted GDP remain valuable and significant in those nations' development.
- Some countries that choose to move beyond GDP may form tight(er) economic alliances and explore alternative methodologies and frameworks for progressing towards the preferable future. Whether alone or within regional blocs, these countries may lead the global transition beyond GDP.
- Nations that focus on measures beyond GDP will see improvements in terms of quality of life, life satisfaction, and environmental and ecosystem sustainability, along with a more equitable economic growth trajectory.

Global Risks

- Global challenges, especially those related to inequality, persist. Progress towards a global sustainable and equitable future stalls, particularly as nations that prioritise growth beyond GDP face economic disadvantages in trade and finance given the global emphasis on GDP.
- Continuous debate keeps the transition beyond GDP at a standstill. Nations that prioritise dimensions beyond GDP need to maintain measurement and reporting on progress on both fronts.
- Economic trade barriers may emerge as countries adopt differing economic and financial standards and trade requirements.
- All the challenges associated with GDP persist (see 'The Challenge with GDP').



POLARISED TRANSITION

The transition beyond GDP is polarised – nations do not agree on a global framework for the transition beyond GDP. The requirements for global economic participation and access to international finance increasingly shift through sustainability, social and environmental commitments that end up superseding GDP-centric requirements. This transition is laden with disagreement and challenges as agreements on sustainable and social development, along with environment considerations, become prerequisites for international trade, aid and finance irrespective of nations' stances on moving beyond GDP.

In this scenario, global progress on moving beyond GDP is fragmented. The requirements for global economic participation and access to international finance are overshadowed by various agreements focused on sustainability, social concerns and environmental strategies. These agreements may have been endorsed by some countries but not all. The traditional global economic and financial system undergoes significant change. Countries, particularly those that have just started collecting the data needed to report on GDP or that have outpaced others in GDP, will feel pressure to re-evaluate their own definitions of progress as they start to find themselves at a disadvantage. This scenario is similar to a top-down approach to policy change (Cerna, 2013). Such a transition may lead to the emergence of new economic barriers, either regional or national. The 2025 SNA update is seen as a significant achievement but not enough to dissuade influential economies from advocating for a move beyond GDP. Disagreements continue between countries that are committed to a GDP-centric model of success and countries that advocate for a broader, progress-centric model.

Global Benefits

- Countries that have already implemented alternative methodologies and frameworks relating to progress continue to innovate and benefit from the associated advantages.
- Nations that have formed alliances focused on moving beyond GDP have significant influence in shaping the global economic system and may be able to position themselves as leaders on progress.
- A focus on progress enables the allocation of funds to innovative solutions that enhance well-being, sustainability and areas that matter.

Global Risks

- The global narrative on what constitutes success and progress is fragmented, leading to confusion and a lack of cohesion.
- Countries and regions that continue to prioritise GDP may experience internal and diplomatic tensions, as well as trade barriers and disputes, that negatively impact their economies.
- All the challenges associated with GDP persist (see ‘The Challenge with GDP’).

POTENTIAL PATHWAYS

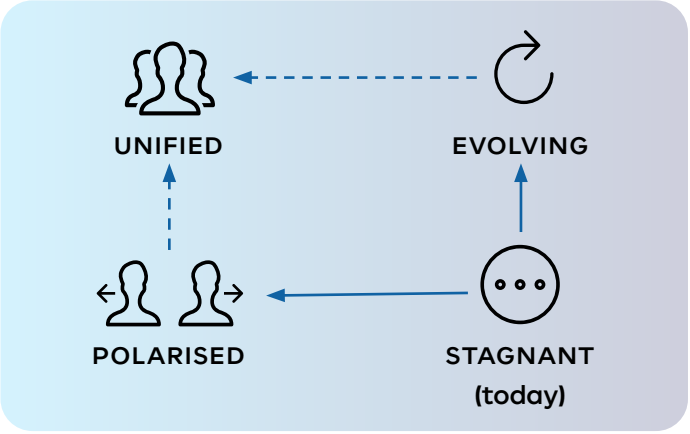
As the scenarios are exploratory, so are the potential pathways. Overall, there are certain signals to look for that may indicate we are moving beyond the current baseline (stagnant transition). These include **global agreements on moving beyond GDP and changing policies and requirements for global economic participation and access to global aid, debt and financing.**

More specifically, one pathway starts from today and moves into an Evolving Transition. The sign to look for in this case is the emergence of multilateral resolutions or agreements on moving beyond GDP, with shared goals and clear definitions of what it means to move beyond GDP. The world would eventually move into Unified Transition.

Another pathway starts from today and moves into a Polarised Transition. In this case, the sign to look for is a series of fragmented agreements and alliances. Both nations and the international organisations that oversee global financial stability and support global economies – such as the IMF, the World Bank and the United Nations – would move towards reducing their reliance on GDP for access to global lending, financial aid and trade agreements. The world would eventually transition into Unified Transition.

Both of the above pathways are only possibilities, and each has its own benefits and challenges. Nevertheless, the world may follow an alternative pathway that does not end up in a Unified Transition, even though a Unified Transition aligns with the preferable future.

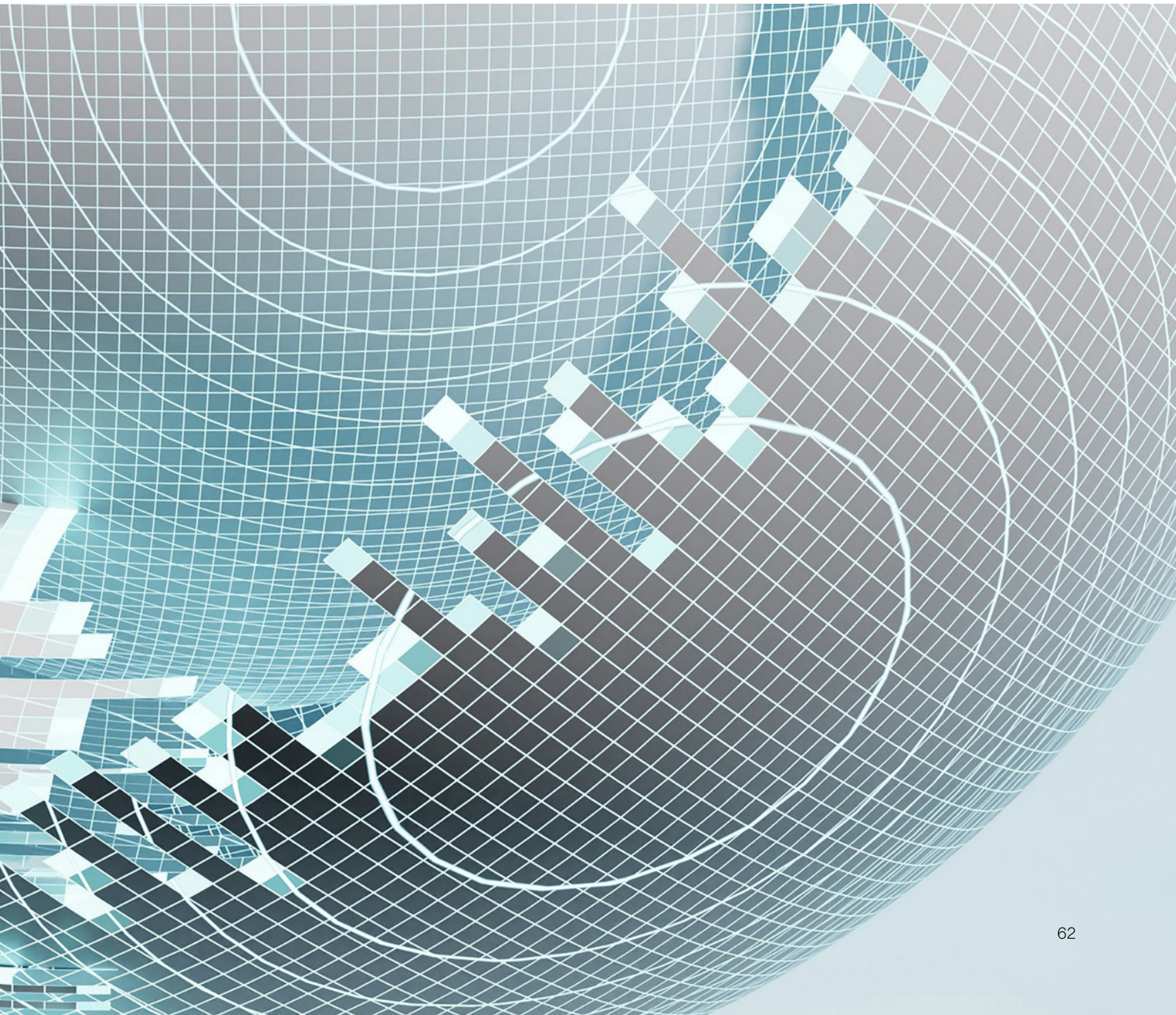
Figure 4. Potential pathways



5

GLOBAL RECOMMENDATIONS

There are various approaches, frameworks, indices and ongoing discussions that will influence the transition beyond GDP. However, **we are at a junction where we need a foundation that is both meaningful and comparable across geographies and level or stage of economic development.** This foundation would serve to align aims, interpretations and strategies for the transition beyond GDP.



The following recommendations are intended to foster the establishment of such a foundation and thus contribute to the realisation of the more favourable scenario, a Unified Transition.

1

A Global Definition for Progress

Convene a diverse group consisting of representatives from academia, international financial institutions, governments, and development-focused organisations from various geographies and at different levels of economic development to settle on a global definition of progress that encompasses the economy, people and the planet irrespective of positions on the future of economic growth, or the growth debate.

2

Common Principles for Global Progress

Expanding on the group above, establish and agree principles of progress based on the definition of progress it has settled upon. These principles would serve as a foundation for the global community and would be validated through a process of public consultation with global societies.

3

A Global Working Group for Progress

Establish a global working group to co-design a preliminary framework for a new measure, or dashboard of measures, for monitoring and reporting. Also diverse, this working group would include researchers from diverse disciplines and geographical locations and, more importantly, existing associations and alliances[17] that have been discussing and working towards a new measurement of progress. The working group would determine an appropriate set of dimensions to be measured based on the common definition and principles for global progress preceded by agreement on how to approach existing challenges with GDP.

4

Global Pilot Locations

Select one or more pilot sites around the world to test, assess and refine each dimension with the aim of co-creating a robust framework for progress based on the common principles of progress and framework for progress. This process would be overseen by the global working group and would ensure that the approach is practical, adaptable and relevant.

[17] Examples include the International Association for Research in Income and Wealth, the International Input-Output Association, the Society for Economic Measurement, the Wellbeing Economy Alliance and the What Works Centre for Wellbeing.

CONCLUDING REMARKS

For almost 80 years, stakeholders and the public have looked to GDP to decide whether a country is growing or not. While the United Nations and other non- and intergovernmental institutions have been increasingly clear in their calls to move beyond GDP, as it is countries who will lead the way in creating a new narrative (Think20, 2022b).

There has been a growing imperative globally to rethink the standard measure of national growth and prosperity – in other words, to move beyond GDP. As a solid statistical system that has been in place for decades, GDP – used alongside the internationally agreed SNA to measure economic activity and progress and enable reporting – has served its purpose as a universal and transparent measure of economic development since the Second World War. However, the world has changed, as seen in swift advances in technology and the emergence of global imperatives that highlight emerging limitations in GDP, both today and for the future.

Despite many global efforts, books and reports, **there is still no internationally agreed standard for moving beyond GDP.** Cities and countries have undertaken highly localised approaches, with different decisions on which metrics are deemed to be relevant, and there has been limited international consensus or comparability.

Based on DFF's research, it is clear that **the global transition beyond GDP will reshape the fields of economics and finance.** Over the next 10 to 20 years, we anticipate the emergence of an alternative measure of progress – one that is more reflective and inclusive of new and future economies, environmental imperatives and societal developments – as the world works together on common initiatives such as the SDGs and climate commitments. Whether or not the transition will leave GDP behind is unknown; this will depend on the degree of global cooperation and the emerging requirements for global economic participation and access to international finance.

In 2022, the DFF shared an opportunity in The Global 50 report (DFF, 2022) posing a question for the future: *What if we could measure the true value of our economies?* We subsequently asked in 2023 (DFF, 2023a): *What if future potential was reported alongside GDP?* Through our 'Future of GDP' initiative, along with the insights and scenarios included in this foresight report, we aim to provide some answers to these questions.

Over the next 50 years, **people will see their needs evolve and will seek greater prosperity and well-being** (DFF, 2023b). People will face very different futures depending on where they live and the challenges facing their countries and communities. Some countries and societies will excel at managing uncertainties and challenges, whereas some will not. What we know is that **economic growth – while critical – will not be enough.**

OUR APPROACH TO RESEARCH

Although GDP is a national measure, it is also an important measure for cities as they play a significant role in national progress, generating more than 80% of global GDP (World Bank, 2023c). As cities are expected to continue to play a central role in national progress (Goldin, 2023), DFF has carried out qualitative research – both primary and secondary – over the past year to understand how the concept of 'beyond GDP' may evolve over the next decade or so. The focus on transition beyond GDP – as opposed to specific frameworks or methodologies – is intended to create a basis for continuing global dialogue on the topic given the diverse range of priorities and philosophical perspectives worldwide along with significant efforts and considerable global advances on the topic.

Using backcasting to inform decision-making relating to a preferable future, the research started out with the following questions:

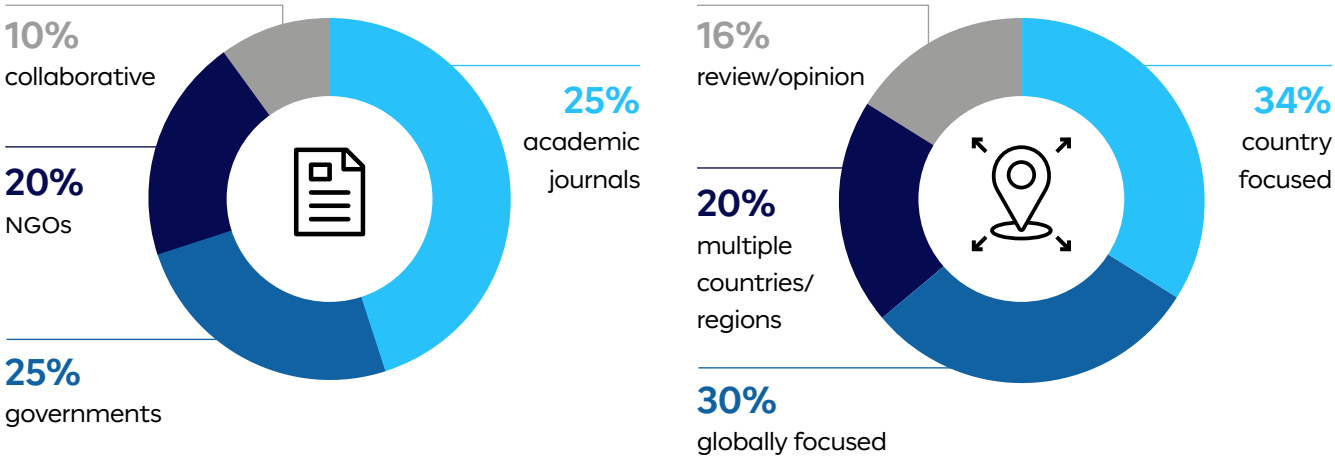
- **Why beyond GDP?**
- **Where are we practically today on moving beyond GDP?**
- **What are the barriers to scalability and how might we overcome them?**

1. Understanding the Problem and the Preferable Future

The DFF carried out a literature review on GDP and frameworks looking beyond GDP covering 82 articles, thought pieces, and conceptual models and papers. All had been published since 2012, with the exception of six key reports published prior to that year. Sources included reputable and influential peer-reviewed international journals, institutional magazines, and publications in the economics, sustainable development, and progress-monitoring and assessment spaces.

We ensured that there was global coverage of regions, countries, and international governmental and NGOs, and we covered major keywords including 'beyond GDP', 'economic growth', 'GDP' and 'indicators'. We also delved into specific perspectives, leveraging additional keywords such as 'alternative measures of GDP', 'climate change', 'environmental progress', 'ESG', 'green GDP', 'happiness', 'human development', 'index', 'life satisfaction', 'new economies', 'policy', 'quality of life', 'social progress', 'sustainable development', 'sustainability', 'technological progress', 'wealth of nations' and 'well-being'.

Figure 5. Publications review



Approximately 45% of the publications reviewed for this report were academic journal articles, 25% were published by governments, 20% were published by NGOs, and 10% were based on collaborative efforts either between governments and academia or between NGOs and academia. Of the 76 articles and reports published since 2012, nearly half were published between 2020 and 2022, which reflects increasing interest and/or support in approaches looking beyond GDP. Approximately 34% were country focused; 30% were globally focused; 20% were based on multiple countries or regions covering the EU, the OECD, or the G7, the G20 or other countries; and the remainder (16%) were review or opinion articles and reports.

The DFF also commissioned a **benchmarking review** to cover key country-level (18 countries)[1] approaches to moving beyond GDP and global indices (21 indices)[2] looking at progress beyond the economy.

[1] Australia, Belgium, Bhutan, Canada, China, Ecuador, Finland, France, Germany, Iceland, Italy, the Netherlands, New Zealand, Scotland, Sweden, the United Arab Emirates, the United Kingdom and the United States.

[2] The Arcadis Sustainable Cities Index, the EIU Global Liveability Index, the Global Innovation Index, the Global Power City Index, the Global Urban Competitiveness Report, the Human Capital Index, the Human Development Index, the IESE Cities in Motion Index, the IMD Smart City Index, the IMD World Digital Competitiveness ranking, the Inclusive Wealth Index, the Kearney Global Cities Index, the Mercer Quality of Living City Ranking, the Numbeo Safety Index, the OECD Better Life Index, the OECD Wellbeing Framework, the Social Progress Index, the Sustainable Development Index, the UN SEEA framework, the World Competitiveness Index and the World Happiness Report and Ranking.

2. Expert Engagement and Analysis

To explore in depth the future of GDP and the concept 'beyond GDP', the **DFF hosted a symposium titled 'The Future of GDP' on 10 October 2022 in Dubai, UAE**. The symposium had three aims: first, to initiate a global conversation on the topic in Dubai; second, to understand global pathways taken to report on progress beyond GDP; and third, to explore – together with experts in the field – ways that GDP and/or 'beyond GDP' could realistically evolve to become more reflective and inclusive of new economies, environmental imperatives and societal developments.

Through a combination of panel discussions and open breakout sessions, the day explored questions such as how GDP impacts us today and what could happen if it remained unchanged into the future. The day also explored how GDP is used and some of the main approaches to moving beyond GDP. It furthermore examined the key challenges of developing a metric or range of metrics that could help us to measure what matters from the perspectives of well-being, social equity, resilience, technology and sustainability while also enabling cross-country comparisons.

The symposium followed the Chatham House Rule.

3. Research Triangulation, Roadmap, and Scenario Development

To triangulate findings and further explore the future of GDP and moving beyond GDP, the DFF convened a virtual roundtable and a series of meetings with a focus on sharing analysis and considering questions about the future when it comes to the global transition beyond GDP in the next decade or so. Questions posed included the extent to which the experts agreed with the findings, with the aim being to validate assumptions and uncertainties related to the future global transition beyond GDP.

Like the symposium, the meetings followed the Chatham House Rule.

Following these expert meetings, the team used **critical uncertainties to build a roadmap and exploratory scenarios together with global opportunities and implications for attaining the preferable future and a global transition beyond GDP.**

ACRONYMS

CMEPSP	Commission on the Measurement of Economic Performance and Social Progress
COP	UN Climate Change Conference
DFF	Dubai Future Foundation
EESC	European Economic and Social Committee
EIU	Economist Intelligence Unit
ESG	environmental, social and governance
EU	European Union
G20	Group of Twenty
GCI	Global Competitiveness Index
GDP	gross domestic product
GII	gross inclusive income
GPI	Genuine Progress Indicator
HDI	Human Development Index
HLEG	High-Level Expert Group
IMF	International Monetary Fund
ISWGNA	Intersecretariat Working Group on National Accounts
IWI	Inclusive Wealth Index
NGO	non-governmental organisation
NII	net inclusive income
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics (UK)
SDGs	Sustainable Development Goals
SEEA	System of Environmental Economic Accounting
SNA	System of National Accounts
UAE	United Arab Emirates
UNEP	United Nations Environment Programme
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNFCCC	United Nations Framework Convention on Climate Change
UNSD	United Nations Statistics Division
WHR	World Happiness Report

ACKNOWLEDGEMENTS

The **Future of GDP initiative** was led by Dr Heba Chehade with support from colleagues throughout the Dubai Future Foundation Aruba Khalid, Tala Anshasi, Asma Al Hamed, Dr Patrick Noack, Ehab Khattab and Feras Sobh.

For their assistance in research, editing, and the administration of the symposium 'The Future of GDP' in Dubai, UAE, we give special thanks to:

Chris Shaw, Editor
Hazel Bird, Editor
Issam Yassin, Designer
Salma Refass, Non-resident Research Fellow at Mohammed Bin Rashid School of Government
Strategy& Middle East Ideation Center (symposium moderators Dr Mark Esposito and Dr Amit Kapoor)
Soapbox Design Layout Design
Tanwin Creative Writing and Translation

And other colleagues throughout the **Dubai Future Foundation**: Cherry Mendoza, Eden Rabbie, Meera Ahli, Shabin Parambath, Sima Ansari and Veena Prabhan

For generously contributing their time and expertise on GDP and beyond GDP, we give special thanks to:

Abebe Shimeles, African Economic Research Consortium
Amanda Janoo, Wellbeing Economy Alliance
Anu Muhammad, Jahangirnagar University
Bonnie Chiu, The Social Investment Company
Brent Bleys, Ghent University
Dean Joliffe, World Bank
Harry X. Wu, Peking University
Ibrahim Saif, Jordan Strategy Forum and Arab NGO Network for Development
Ida Kubiszewski, University College London
James Tebrake, International Monetary Fund
Jean Fares, UAE Ministry of Economy
Jessica Pykett, University of Birmingham
John F. Helliwell, University of British Columbia and World Happiness Report
Jon Erickson, University of Vermont
Joshua Polchar, Organisation for Economic Co-operation and Development
Khulood Al Saleh, Central Bank of the United Arab Emirates
Kirstin Morrison, Global Green Growth Institute
Kristen Cooper, Gordon College
Lucy Odhiambo, African Economic Research Consortium
Marc Kaufmann, Central European University
Matthew Agarwala, Bennett Institute for Public Policy, University of Cambridge
Ori Hefetz, Cornell SC Johnson College of Business and International Monetary Fund
Pushpam Kumar, United Nations Environment Programme
Robert Ayres, INSEAD
Robert Costanza, University College London
Robert Smith, International Institute for Sustainable Development
Sandrine Dixson-Declève, Club of Rome and Earth4All
Shun Wang, Xi'an Jiaotong-Liverpool University
Tarek Abu Fakhr, UAE Government Development and the Future Office
Theophile Azomahou, African Economic Research Consortium
Yanchun Zhang, United Nations Development Programme

REFERENCES

Aiyar, S., Chen, J., Ebeke, C., Garcia-Saltos, R., Gudmundsson, T., Ilyina, A., Kangur, A., Kunaratskul, T., Rodriguez, S., Ruta, M., Schulze, T., Soderberg, G. and Trevino, J. (2023) 'Geoeconomic fragmentation and the future of multilateralism'. International Monetary Fund. Staff Discussion Note 2023/001. 15 January. www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2023/01/11/Geo-Economic-Fragmentation-and-the-Future-of-Multilateralism-527266

Alexander, T., Dziobek, C. and Galeza, T. (2018) 'Sustainable development goals (SDGs) and GDP: What national accounts bring to the table'. International Monetary Fund. Working Paper 2018/041. 7 March. www.imf.org/en/Publications/WP/Issues/2018/03/07/Sustainable-Development-Goals-SDGs-and-GDP-What-National-Accounts-Bring-to-the-Table-45706

Allin, P., Coyle, D. and Jackson, T. (2022) 'Beyond GDP: Changing how we measure progress is key to tackling a world in crisis – three leading experts'. *The Conversation*, 18 August. https://theconversation.com/beyond-gdp-changing-how-we-measure-progress-is-key-to-tackling-a-world-in-crisis-three-leading-experts-186488

American Economic Association (2023) 'National Strategy to Develop Statistics for Environmental–Economic Decisions: OSTP/Commerce/OMB (1.19.23)'. Press Release. 19 January. www.aeaweb.org/forum/3447/national-strategy-statistics-environmental-economic-decisions

Arcadis (2022) 'The Arcadis Sustainable City Index 2022'. www.arcadis.com/en/knowledge-hub/perspectives/global/sustainable-cities-index

Arcagni, A., Fattore, M., Maggino, F. and Vittadini, G. (2021) 'Some critical reflections on the measurement of social sustainability and well-being in complex societies'. *Sustainability*, 13 (22), 12679. https://doi.org/10.3390/su132212679

Australian Government (2023) 'Measuring what matters: Australia's first wellbeing framework'. July. https://treasury.gov.au/sites/default/files/2023-07/measuring-what-matters-statement020230721_0.pdf

Australian Government (n.d.) 'Dashboard'. https://treasury.gov.au/policy-topics/measuring-what-matters/dashboard (retrieved 25 August 2023)

Bannister, G. and Mourmouras, A. (2018) 'Welfare versus GDP: What makes people better off'. IMF Blog, 7 March. www.imf.org/en/Blogs/Articles/2018/03/07/welfare-versus-gdp-what-makes-people-better-off

Barth, J. (2021) 'Fit for 2030'. Zoe Institute for Future-Fit Economies. 3 November. https://zoe-institut.de/wp-content/uploads/2021/11/ZOE_Towards-a-beyond-GDP-dashboard_EESC_hearing_November_2021-FINAL.pdf

Barth, J., Lavorel, C., Miller, C. and Hafele, J. (2021) 'A compass towards 2030: Navigating the EU's economy beyond GDP by applying the Doughnut Economics framework'. ZOE Institute for Future-Fit Economies. https://zoe-institut.de/wp-content/uploads/2021/11/ZOE_Report_Towards-Europe.pdf

BEA (n.d.) 'What is a satellite account?' www.bea.gov/help/faq/1190 (retrieved 17 July 2023)

Bertolucci, S. (2018) 'Beyond GDP: Economics and happiness'. *Berkley Economic Review*, 31 October. https://econreview.berkeley.edu/beyond-gdp-economics-and-happiness

Bibri, S. (2018) 'Backcasting in futures studies: A synthesized scholarly and planning approach to strategic smart sustainable city development'. *European Journal of Futures Research*, 6, 13. https://eujournalfuturesresearch.springeropen.com/articles/10.1186/s40309-018-0142-z

Bittencourt, M. (2021) 'South Africa has rebased its gross domestic product (GDP): The how and the why'. *The Conversation*, 3 September. https://theconversation.com/south-africa-has-rebased-its-gross-domestic-product-gdp-the-how-and-the-why-167309

Boelhouwer, J. (2023) 'Beyond GDP: Measuring wellbeing in the Netherlands'. Netherlands Institute for Social Research. https://cros-legacy.ec.europa.eu/system/files/NTTS2013fullPaper_101.pdf

Brand-Correa, L., Brook, A., Büchs, M., Meier, P., Naik, Y. and O'Neill, D. (2022) 'Economics for people and planet: Moving beyond the neoclassical paradigm'. *The Lancet Planetary Health*, 6 (6), e460. www.sciencedirect.com/science/article/pii/S2542519622000638

Burnside, C. and Dollar, D. (2004) 'Aid, policies, and growth: Revisiting the evidence'. World Bank. Policy Research Working Paper 3251. March. https://documents1.worldbank.org/curated/en/992381468780325835/pdf/wps3251Aid.pdf

Callen, T. (n.d.) 'Gross domestic product: An economy's all'. International Monetary Fund. www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/gross-domestic-product-GDP (retrieved 29 August 2023)

Cerna, L. (2013) 'The nature of policy change and implementation: A review of different theoretical approaches'. Organisation for Economic Co-operation and Development. www.oecd.org/education/ceri/The%20Nature%20of%20Policy%20Change%20and%20Implementation.pdf

Ceroni, M. (2014) 'Beyond GDP: US states have adopted genuine progress indicators'. *The Guardian*, 23 September. www.theguardian.com/sustainable-business/2014/sep/23/genuine-progress-indicator-gdp-gpi-vermont-maryland

Chui, M., Hazan, E., Roberts, R., Singla, A., Smaje, K., Sukharevsky, A., Yee, L. and Zemmel, R. (2023) 'The economic potential of generative AI: The next productivity frontier'. McKinsey Digital. 14 June. www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier

Claessens, S. and Kose, M. (n.d.) 'Recession: When bad times prevail'. International Monetary Fund. www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Recession (retrieved 17 July 2023)

Costanza, R., Kubiszewski, I., Giovannini, E., Lovins, H., McGlade, J., Pickett, K., Ragnarsdóttir, K., Roberts, D., De Vogli, R. and Wilkinson, R. (2014) 'Development: Time to leave GDP behind'. *Nature*, 505, 283–5. www.nature.com/articles/505283a

Crisp, R., Waite, D., Green, A., Hughes, C., Lupton, R., MacKinnon, D. and Pike, A. (2023) '"Beyond GDP" in cities: Assessing alternative approaches to urban economic development'. *Urban Studies*, 12 August. https://doi.org/10.1177/00420980231187884

Cummings, M., Roff, H., Cukier, K., Parakilas, J. and Bryce, H. (2018) 'Artificial intelligence and international affairs disruption anticipated'. Chatham House. www.chathamhouse.org/sites/default/files/publications/research/2018-06-14-artificial-intelligence-international-affairs-cummings-roff-cukier-parakilas-bryce.pdf

Dandea, P. S. (2021) 'Beyond GDP measures for a successful recovery and a sustainable and resilient EU economy (own-initiative opinion)'. European Economic and Social Committee. 8 December. www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/beyond-gdp-measures-successful-recovery-and-sustainable-and-resilient-eu-economy-own-initiative-opinion

de Vries, T. (1976) 'Jamaica, or the non-reform of the international monetary system'. *Fireign Affairs*, 54 (3), 577–605.

Department of Economic and Social Affairs Statistical Office (1977) 'The feasibility of welfare-oriented measures to supplement the national accounts and balances: A technical report'. United Nations. F(22). https://unstats.un.org/unsd/publication/SeriesF/SeriesF_22E.pdf

Dickinson, E. (2011) 'GDP: A brief history'. *Foreign Policy*, 3 January. https://foreignpolicy.com/2011/01/03/gdp-a-brief-history

Dixson-Declève, S. and McLead, A. (2023) 'Beyond GDP: Towards a wellbeing economy'. The Club of Rome. 15 May. www.clubofrome.org/blog-post/sdd-we-go-blog

DFF (2022) 'Future opportunities report: The Global 50'. www.dubaifuture.ae/wp-content/uploads/2022/02/Future-Opportunities-Report-TheGlobal50-English.pdf

DFF (2023a) 'Future opportunities report: The Global 50'. www.dubaifuture.ae/wp-content/uploads/2023/04/THE-GLOBAL-50-EN.pdf

DFF (2023b) 'Navigating the future for growth, prosperity and well-being: The foundation of the Global 50 report'. www.dubaifuture.ae/wp-content/uploads/2023/02/GPW-Report-Eng.pdf

Easterly, W., Levine, R. and Roodman, D. (2004) 'Aid, policies and growth: Comment'. *American Economic Review*, 94 (3), 774–80. www.aeaweb.org/articles?id=10.1257/0002828041464560

Economist (2016) 'The trouble with GDP'. 30 April. www.economist.com/briefing/2016/04/30/the-trouble-with-gdp

EIU (2023) 'The Global Liveability Index 2023'. www.eiu.com/n/campaigns/global-liveability-index-2023

European Central Bank (2004) 'Statistics and their use for monetary and economic policy-making'. www.ecb.europa.eu/pub/pdf/other/statisticsusemonetaryeconomicpolicy-makingen.pdf

European Commission (n.d.) 'EU social indicators'. https://ec.europa.eu/social/main.jsp?catId=756&langId=en (retrieved 25 August 2023)

European Parliament (2016) 'Beyond GDP: Global and regional development indicators'. Briefing. October. www.europarl.europa.eu/RegData/etudes/BRIE/2016/589811/EPRS_BRI(2016)589811_EN.pdf

Eurostat (n.d.) 'Statistics for the European Green Deal'. https://ec.europa.eu/eurostat/cache/egd-statistics (retrieved 25 August 2023)

Focus2030 (2023) 'Summit for a new global financing pact: Towards more commitments to meet the 2030 Agenda?' 9 June. https://focus2030.org/Summit-for-a-New-Global-Financing-Pact-towards-more-commitments-to-meet-the

Gallup (n.d.) 'Understanding how Gallup uses the Cantril scale'. https://news.gallup.com/poll/122453/understanding-gallup-uses-cantril-scale.aspx (retrieved 23 August 2023)

Goldin, I. (2023) 'Cities are central to our future: They have the power to make, or break, society's advances'. *The Conversation*, 22 June. https://theconversation.com/cities-are-central-to-our-future-they-have-the-power-to-make-or-break-societys-advances-207317

Goossens, Y., Mäkipää, A., Schepelmann, P., van de Sand, I., Kuhndt, M. and Herrndorf, M. (2007) 'Alternative progress indicators to gross domestic product (GDP) as a means towards sustainable development'. European Parliament. www.europarl.europa.eu/RegData/etudes/etudes/join/2007/385672/IPOL-ENVI_ET(2007)385672_EN.pdf

Halm, G. N. (1977) 'Jamaica and the par value system'. *Essays in International Finance*, 120. https://ies.princeton.edu/pdf/E120.pdf

Harper, P. (2022) 'Towards the 2025 SNA: Progress of the 2008 SNA update'. Presentation to 17th Meeting of the United Nations Committee of Experts on Environmental–Economic Accounting. 27–28 June. https://seea.un.org/sites/seea.un.org/files/unceea_-_june_2022_-_update_of_the_sna.pdf

Heine, J. (2023) 'The Global South is on the rise – but what exactly is the Global South?' *The Conversation*, 3 July. https://theconversation.com/the-global-south-is-on-the-rise-but-what-exactly-is-the-global-south-207959

Hines, A., Schutte, J. and Romero, M. (2019) 'Transition scenarios via backcasting'. *Journal of Future Studies*, 24 (1), 1–14. https://jfsdigital.org/wp-content/uploads/2019/09/01-Hines-Transition-Scenarios-via-Backcasting.pdf

Hulten, C. and Nakamura, L. (2022) 'Is GDP becoming obsolete? The "Beyond GDP" debate'. Federal Reserve Bank Philadelphia. November. https://doi.org/10.21799/frbp.wp.2022.37

IEA (2023) 'Where things stand in the global energy crisis one year on: Commentary'. 23 February. www.iea.org/commentaries/where-things-stand-in-the-global-energy-crisis-one-year-on

IMF (2009) 'System of National Accounts 2008'. https://doi.org/10.5089/9789211615227.071

IMF (2020) 'Measuring economic welfare: What and how?' May. www.imf.org/-/media/Files/Publications/PP/2020/English/PPEA2020028.ashx

IMF (2022) 'Global financial stability report: Shockwaves from the war in Ukraine test the financial system's resilience'. April. www.imf.org/en/Publications/GFSR/Issues/2022/04/19/global-financial-stability-report-april-2022

IMD (n.d.) 'The mission of the World Competitiveness Center'. World Competitiveness Center. www.imd.org/centers/wcc/world-competitiveness-center (accessed 17 July 2023)

IMD (2023) 'IMD Smart City Index report 2023'. www.imd.org/wp-content/uploads/2023/06/SmartCityIndex-2023-V8.pdf

International Labour Organization (n.d.) '3. Employment-rich economic growth'. www.ilo.org/global/topics/dw4sd/themes/employment-rich/lang—en/index.htm (retrieved 25 August 2023)

Islam, S. (1995) 'The Human Development Index and per capita GDP'. *Applied Economics Letters*, 2 (5), 166–7. www.tandfonline.com/doi/abs/10.1080/135048595357537?journalCode=rael

Jensen, L. (2023) 'Beyond growth: Pathways towards sustainable prosperity in the EU'. European Parliamentary Research Service. May. www.europarl.europa.eu/RegData/etudes/STUD/2023/747108/EPRS_STU(2023)747108_EN.pdf

Kalamara, E., Turrell, A., Redl, C., Kapetanios, G. and Kapadia, S. (2020) 'Making text count: Economic forecasting using newspaper text'. Staff Working Paper No. 865. Bank of England. August. www.bankofengland.co.uk/-/media/boe/files/working-paper/2020/making-text-count-economic-forecasting-using-newspaper-text.pdf

Kapoor, A. and Debroy, B. (2019) 'GDP is not a measure of human well-being'. *Harvard Business Review*, 4 October. https://hbr.org/2019/10/gdp-is-not-a-measure-of-human-well-being

Kearney (2022) 'Readiness for the storm: The 2022 Global Cities Report'. www.kearney.com/documents/291362523/293469161/Readiness+for+the+storm–the+2022+Global+Cities+Report.pdf/4d8684c4-3c33-d90e-3a76-40eb03f31a67

Kharas, H. and McArthur, J. (2019) 'How much does the world spend on the Sustainable Development Goals?' Brookings. 29 July. www.brookings.edu/articles/how-much-does-the-world-spend-on-the-sustainable-development-goals

Kishita, Y., Masuda, T., Nakamura, H. and Aoki, K. (2023) 'Computer-aided scenario design using participatory backcasting: A case study of sustainable vision creation in a Japanese city'. *Futures & Foresight Science*, 5 (1), e141. https://doi.org/10.1002/ffo2.141

Landefeld, S. (2012) 'GDP and the national accounts: One of the great inventions of the 20th century'. BEA. www.bea.gov/news/blog/2012-04-09/gdp-and-national-accounts-one-great-inventions-20th-century

Landefeld, J., Villones, S. and Holdren, A. (2020) 'GDP and beyond: Priorities and plans'. BEA. 18 June. https://apps.bea.gov/scb/issues/2020/06-june/0620-beyond-gdp-landefeld.htm

Lange, M. (2011) 'Progress'. In E. N. Zalta and U. Nodelman (eds) *The Stanford Encyclopedia of Philosophy*. Stanford University. https://plato.stanford.edu/archives/sum2023/entries/progress

Maldini, I. (2021) 'The Amsterdam doughnut: <oving towards "strong sustainable consumption" policy?' Amsterdam University of Applied Sciences. Paper presented at the 4th PLATE 2021 Virtual Conference, Limerick, Ireland. https://pure.hva.nl/ws/files/23541309/Maldini_2021_The_Amsterdam_Doughnut.pdf

Marchese, D. (2022) 'This pioneering economist says our obsession with growth must end'. *New York Times Magazine*, 17 July. www.nytimes.com/interactive/2022/07/18/magazine/herman-daly-interview.html

Masterson, V. (2022) 'GDP: What is it and why does it matter?' World Economic Forum. www.weforum.org/agenda/2022/05/what-is-gdp-economic-growth-matters

Meltzer, J. P. (2018) 'The impact of artificial intelligence on international trade'. Brookings. 13 December. www.brookings.edu/articles/the-impact-of-artificial-intelligence-on-international-trade

Mercer (2019) 'Quality of living city ranking'. https://mobilityexchange.mercer.com/Insights/quality-of-living-rankings

Ministry of Foreign Affairs and Foreign Trade, Barbados (2022) 'The 2022 Bridgetown Initiative'. 23 September. www.foreign.gov.bb/the-2022-barbados-agenda (retrieved 23 August 2023)

Mori Memorial Foundation (2022) 'Global Power City Index 2022'. https://mori-m-foundation.or.jp/pdf/GPCI2022_summary.pdf

MOCDUAE (2023) 'National Strategy for Wellbeing 2031'. 15 June. www.hw.gov.ae/en/download/uae-national-wellbeing-strategy-2031

Nature (2023) 'GDP at 70: Why genuinely sustainable development means settling a debate at the heart of economics'. *Nature*, 9 August. www.nature.com/articles/d41586-023-02509-5

Numbeo (2023) 'Safety index by city 2023'. www.numbeo.com/crime/rankings.jsp?title=2023&displayColumn=1

OECD (2018a) 'Beyond GDP: Measuring what counts for economic and social performance'. https://doi.org/10.1787/9789264307292-en

OECD (2018b) 'For good measure: Advancing research on well-being metrics beyond GDP'. https://doi.org/10.1787/9789264307278-en

OECD (2021) 'Artificial intelligence, machine learning and big data in finance: Opportunities, challenges, and implications for policy makers'. www.oecd.org/finance/artificial-intelligence-machine-learning-big-data-in-finance.htm

OECD (n.d.-a) 'OECD weekly tracker of economic activity'. www.oecd.org/economy/weekly-tracker-of-gdp-growth (retrieved 15 August 2023)

OECD (n.d.-b) 'Measuring well-being and progress: Well-being research' www.oecd.org/wise/measuring-well-being-and-progress.htm (retrieved 7 July 2023)

OECD.Stat (2023) 'How's life? Well-being'. January. https://stats.oecd.org/Index.aspx?DataSetCode=HSL

Ohuocha, C. (2014) 'UPDATE 2: Nigeria surpasses South Africa as continent's biggest economy'. Reuters. 6 April. www.reuters.com/article/nigeria-gdp-idUSL6N0MY0LT20140406

ONS (2022) 'New beyond GDP measures for the UK: A workplan for measuring inclusive income'. 12 May. www.ons.gov.uk/economy/economicoutputandproductivity/output/articles/newbeyondgdmeasuresfortheukaworkplanformeasuringinclusiveincome/2022-05-12

ONS (2023) 'UK measures of national well-being user guide'. 5 July. www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/ukmeasuresofnationalwellbeinguserguide

Osberg, L. and Sharpe, A. (2001) 'Comparisons of trends in GDP and economic well-being: The impact of social capital'. OECD. www.oecd.org/education/innovation-education/1824740.pdf

Oulton, N. (2018) 'GDP and the System of National Accounts: Past, present and future'. Centre for Macroeconomics/London School of Economics, National Institute of Economic and Social Research, and Economic Statistics Centre of Excellence. June. www.lse.ac.uk/CFM/assets/pdf/CFM-Discussion-Papers-2018/CFMDP2018-02-Paper.pdf

Our World in Data (2023) 'SDG Tracker: Measuring progress towards the Sustainable Development Goals'. https://ourworldindata.org/sdgs

Pengfei, N., Kamiya, M., Jing, G. and Yi, Z. (2021) 'Global urban competitiveness report (2020–2021)'. UN Habitat. https://unhabitat.org/sites/default/files/2021/11/1_report_on_competitiveness_of_cities_worldwide2020-2021.pdf

Pérez, L., Hunt, D., Samandari, H., Nuttall, R. and Biniek, K. (2022) 'Does ESG really matter – and why?' McKinsey Sustainability. 10 August. www.mckinsey.com/capabilities/sustainability/our-insights/does-esg-really-matter-and-why

Prasad, M. and Castro, A. (2018) 'Is GDP an adequate measure of development?' International Growth Centre. 17 October. www.theigc.org/blogs/gdp-adequate-measure-development

Prime Minister of Barbados (2022) 'Urgent and decisive action required for an unprecedented combination of crises: The 2022 Bridgetown Initiative for the reform of the global financial architecture'. 23 September. https://pmo.gov.bb/wp-content/uploads/2022/10/The-2022-Bridgetown-Initiative.pdf

Quist, J. and Vergragt, P. (2006) 'Past and future of backcasting: The shift to stakeholder participation and a proposal for a methodological framework'. *Futures*, 38 (9), 1027–45. www.sciencedirect.com/science/article/abs/pii/S0016328706000541

Quist, J., Vergragt, P. and Quist, J. (2011) 'Backcasting for sustainability: Introduction to the special issue'. *Technological Forecasting and Social Change*, 78 (5), 747–55. www.sciencedirect.com/science/article/abs/pii/S004016251100062X

Regen Melbourne (2021) 'Towards a regenerative Melbourne: Embracing doughnut economics to create a new compass for Melbourne'. www.regen.melbourne/news/towardsregenmelbreport

Reserve Bank of Australia (n.d.) 'What is monetary policy?' www.rba.gov.au/education/resources/explainers/pdf/what-is-monetary-policy.pdf (retrieved 23 August 2023)

Robert Wood Johnson Foundation (2019) 'Advancing well-being in an inequitable world: Moving from measurement to action'. www.rwjf.org/en/insights/our-research/2019/01/advancing-well-being-in-an-inequitable-world.html

Robinson, J. (1982) 'Energy backcasting: A proposed method of policy analysis'. *Energy Policy*, 10 (4), 337–44. www.researchgate.net/publication/223845138_Energy_Backcasting_A_Proposed_Method_of_Policy_Analysis

Sachs, J., Lafortune, G., Fuller, G. and Drumm, E. (2023a) 'Implementing the SDG stimulus: Sustainable development report 2023'. Sustainable Development Solutions Network. https://s3.amazonaws.com/sustainabledevelopment.report/2023/sustainable-development-report-2023.pdf

Sachs, J., Lafortune, G., Fuller, G. and Drumm, E. (2023b) 'Sustainable development report 2023: Implementing the SDG stimulus'. Sustainable Development Report. www.sdgindex.org

SGS Economics and Planning (n.d.) 'Projects: SGS Cities and Regions Wellbeing Index'. https://sgsep.com.au/projects/sgs-wellbeing-index (retrieved 29 August 2023)

Silungwe, A. (2020) 'Benchmarking and rebasing national accounts'. IMF. 26 August. www.imf.org/-/media/Files/Publications/covid19-special-notes/en-special-series-on-covid-19-benchmarking-and-rebasing-national-accounts.ashx

Smith, R., Zoundi, Z. and Bizikova, L. (2022) 'Engaging decision-makers in moving beyond GDP and toward wealth'. Briefing Note. International Institute for Sustainable Development. January. www.iisd.org/system/files/2022-01/moving-beyond-gdp-toward-wealth.pdf

Stickland, H. (2023) 'Beyond GDP: What matters to national well-being'. ONS. 12 May. https://blog.ons.gov.uk/2023/05/12/beyond-gdp-what-matters-to-national-well-being

Stiglitz, J. (2011) 'Rethinking macroeconomics: What went wrong and how to fix it'. *Global Policy*, 2 (2), 165–75. https://doi.org/10.1111/j.1758-5899.2011.00095.x

Stiglitz, J., Sen, A. and Fitoussi, J. (2009) 'Report by the Commission on the Measurement of Economic Performance and Social Progress'. OECD. https://ec.europa.eu/eurostat/documents/8131721/8131772/Stiglitz-Sen-Fitoussi-Commission-report.pdf

Stobierski, T. (2021) 'What is GDP and why it is important?' Harvard Business School. 8 June. https://online.hbs.edu/blog/post/why-is-gdp-important

Svenfelt, A., Alfredsson, E., Bradley, K., Fauré, E., Finnveden, G., Fuehrer, P., Gunnarsson-Östling, U., Isaksson, K., Malmaeus, M., Malmqvist, T., Skånberg, K., Stigson, P., Aretun, A., Buhr, K., Hagbert, P. and Öhlund, E. (2019) 'Scenarios for sustainable futures beyond GDP growth 2050'. *Futures*, 111, 1–14. www.sciencedirect.com/science/article/pii/S0016328718302477

Szczepański, M. (2019) 'Economic impacts of artificial intelligence (AI)'. European Parliamentary Research Service. July. www.europarl.europa.eu/RegData/etudes/BRIE/2019/637967/EPRS_BRI(2019)637967_EN.pdf

Tawiah, V., Zakari, A. and Adedoyin, F. (2021) 'Determinants of green growth in developed and developing countries'. *Environmental Science and Pollution Research*, 28, 39227–42. https://doi.org/10.1007/s11356-021-13429-0

ThinkT20 (2022a) 'T20 communique'. Indonesia. www.t20indonesia.org/wp-content/uploads/2022/11/E-BOOK-T20-Communique.pdf

ThinkT20 (2022b) 'Moving beyond GDP: A stock-flow approach to measuring wellbeing for the G20'. Task Force 5: Inequality, Human Capital and Well-Being. www.t20indonesia.org/wp-content/uploads/2022/11/TF5_Moving-Beyond-GDP.pdf

ThinkT20 (2022c) 'Moving beyond GDP to achieve the SDGs'. Task Force 9: Global Cooperation for SDG Financing. www.t20indonesia.org/wp-content/uploads/2022/08/TF9_Moving-Beyond-GDP-to-Achieve-the-SDGs-2.pdf

UNDP (n.d.) 'Human Development Index (HDI)'. https://hdr.undp.org/data-center/human-development-index (retrieved 7 July 2023)

UNEP (2018) 'Inclusive wealth report 2018'. www.unep.org/resources/inclusive-wealth-report-2018

UNEP (2022) 'Annual report 2022'. https://wedocs.unep.org/bitstream/handle/20.500.11822/41679/Annual_Report_2022.pdf

UNFCCC (n.d.) 'COP 28: What was achieved and what happens next?'. https://unfccc.int/cop28/5-key-takeaways#loss-and-damage (retrieved 27 March 2024)

UNFCCC (2022) 'COP27 reaches breakthrough agreement on new "loss and damage" fund for vulnerable countries'. 20 November. https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries

UNFCCC (2023) 'COP28UAE'. 13 July. https://unfccc.int/sites/default/files/resource/COP28_Letter_July_2023_1.pdf

United Nations (n.d.) 'Summit of the Future 2024: What will it deliver?'. www.un.org/sites/un2.un.org/files/sotf_overview.pdf (retrieved 18 September 2024)

United Nations (2021) 'Our common agenda: Report of the Secretary-General'. www.un.org/en/content/common-agenda-report/assets/pdf/Common_Agenda_Report_English.pdf

United Nations (2023a) 'Valuing what counts: Framework to progress beyond gross domestic product'. May. www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-beyond-gross-domestic-product-en.pdf

United Nations (2023b) 'The Sustainable Development Goals report: Special edition' https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf

UNESCWA (n.d.) 'Social welfare'. https://archive.unescwa.org/social-welfare (retrieved 7 July 2023)

UNSD (n.d.-a) 'The System of National Accounts (SNA)'. https://unstats.un.org/unsd/nationalaccount/sna.asp (retrieved 5 July 2023)

UNSD (n.d.-b) 'Gross national income (GNI)'. https://unstats.un.org/unsd/nationalaccount/glossresults.asp?gID=230 (retrieved 10 July 2023)

UNSD (n.d.-c) 'Historic versions of the System of National Accounts'. https://unstats.un.org/unsd/nationalaccount/hsna.asp (retrieved 7 July 2023)

UNSD (n.d.-d) 'Advisory expert group (AEG)'. https://unstats.un.org/unsd/nationalaccount/aeg.asp (retrieved 17 July 2023)

UNSD (n.d.-e) 'Towards the 2025 SNA'. https://unstats.un.org/unsd/nationalaccount/Towards2025.asp (retrieved 14 July 2023)

UNSD (n.d.-f) 'List of 2025 SNA chapters'. https://unstats.un.org/unsd/nationalaccount/SNAUpdate/2025/chapters.asp (retrieved 15 July 2023)

Vancouver Economic Commission (2022) 'Beyond GDP: A proposed new framework for measuring Vancouver's economy'. Economic Transformation Lab. https://vancouvereconomic.com/wp-content/uploads/2023/02/Beyond_GDP_Phase_1_Report_V5_Web.pdf

Vancouver Economic Commission (n.d.) 'Beyond GDP'. https://vancouvereconomic.com/research/beyond-gdp (retrieved 29 August 2023)

Vanham, P. (2021) 'A brief history of GDP – and what could come next'. World Economic Forum. www.weforum.org/agenda/2021/12/stakeholder-capitalism-episode-1-a-brief-history-of-gdp

Wealth Accounting and the Valuation of Ecosystem Services (2012) 'Moving beyond GDP: How to factor natural capital into economic decision making'. World Bank. June. https://documents1.worldbank.org/curated/en/724461468157521765/pdf/696120WP0Movin006060020120Box369282B.pdf

Wellbeing Economy Alliance (n.d.) 'Santa Monica, California: Wellbeing Index'. https://weall.org/resource/santa-monica-california-wellbeing-index (retrieved 25 August 2023)

White House (2022a) 'How do economists determine whether the economy is in a recession?' 21 July. www.whitehouse.gov/cea/written-materials/2022/07/21/how-do-economists-determine-whether-the-economy-is-in-a-recession

White House (2022b) 'National Strategy to Develop Statistics for Environmental–Economic Decisions'. 18 August. www.whitehouse.gov/wp-content/uploads/2022/08/Natural-Capital-Accounting-Strategy.pdf

Widuto, A., Evroux, C. and Spinaci, S. (2023) 'From growth to "beyond growth": Concepts and challenges'. European Parliamentary Research Service. www.europarl.europa.eu/RegData/etudes/BRIE/2023/747107/EPRS_BRI(2023)747107_EN.pdf

Woloszko, N. (2020) 'Tracking activity in real time with Google Trends'. OECD Economics Department Working Papers No. 1634. OECD. https://doi.org/10.1787/6b9c7518-en

Wolverson, R. (2013) 'GDP and economic policy'. Council on Foreign Relations. 7 August. www.cfr.org/article/gdp-and-economic-policy

World Bank (2008) 'The 2008 SNA: Concepts in brief'. UN Department of Economic and Social Affairs. https://unstats.un.org/unsd/nationalaccount/docs/2008sna-conceptsbrief.pdf

World Bank (2019) 'The Human Capital Project: Frequently asked questions'. www.worldbank.org/en/publication/human-capital/brief/the-human-capital-project-frequently-asked-questions

World Bank (2021) 'The changing wealth of nations 2021: Managing assets for the future'. https://openknowledge.worldbank.org/server/api/core/bitstreams/c0debd7c-e47a-5213-9959-64659494f791/content

World Bank (2023a) 'The World Bank in Bhutan'. 9 April. www.worldbank.org/en/country/bhutan/overview

World Bank (2023b) 'Shared prosperity: Monitoring inclusive growth'. 30 April. www.worldbank.org/en/topic/poverty/brief/global-database-of-shared-prosperity

World Bank (2023c) 'Food security update: World Bank response to rising food insecurity'. 26 October. https://thedocs.worldbank.org/en/doc/40ebbf38f5a6b68bfc11e5273e1405d4-0090012022/related/Food-Security-XCIV-10-26-23.pdf

World Bank (2023d) 'Urban development'. 3 April. www.worldbank.org/en/topic/urbandevelopment/overview

World Bank (n.d.-a) 'Financial access'. www.worldbank.org/en/publication/gfdr/gfdr-2016/background/financial-access (retrieved 25 August 2023)

World Bank (n.d.-b) 'Why do countries revise their national accounts?' https://datahelpdesk.worldbank.org/knowledgebase/articles/680284-why-do-countries-revise-their-national-accounts (retrieved 17 August 2023)

World Economic Forum (2024) 'New report measures quality of growth for new economic era'. 17 January. www.weforum.org/press/2024/01/wef24-future-of-growth-report/

World Economic Forum (2020) 'The global competitiveness report'. www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2020.pdf

World Inequality Lab (2021) 'Distributional national accounts guidelines: Methods and concepts used in the World Inequality Database'. 28 June. https://wid.world/document/distributional-national-accounts-guidelines-2020-concepts-and-methods-used-in-the-world-inequality-database

Yamaguchi, R. and Managi, S. (2019) 'Backward- and forward-looking shadow prices in inclusive wealth accounting: An example of renewable energy capital'. *Ecological Economics*, 156, 337–49. https://doi.org/10.1016/j.ecolecon.2018.09.020

Zheng, Y., Xu, Z. and Xiao, A. (2023) 'Deep learning in economics: A systematic and critical review'. *Artificial Intelligence Review*, 56, 9497–539. https://doi.org/10.1007/s10462-022-10272-8

Zuleeg, F., Emmanouilidis, J. and de Castro, R. (2021) 'The age of permacrisis'. Euractiv. 13 April. www.euractiv.com/section/future-eu/opinion/the-age-of-permacrisis

Zwijnenburg, J. and Rompaey, C. (2021) 'A broader SNA framework on wellbeing and sustainability: State of play'. ICP Technical Advisory Group. 19 May. https://thedocs.worldbank.org/en/doc/5b226e0399227a6b68c3199a79aefb90-0050022021/original/3-02-Wellbeing-sustainability-and-distributional-analysis-OECD-and-World-Bank-Presentation.pdf

BACKGROUND READING

This list consists of titles that were reviewed during research but were not directly cited within the report.

Aitken, A. (2019) 'Measuring welfare beyond GDP'. *National Institute Economic Review*, 249, R3–16. https://doi.org/10.1177/002795011924900110

Anderson, M. and Mossialos, E. (2019) 'Beyond gross domestic product for New Zealand's wellbeing budget'. *The Lancet*, 4 (7), E320–1. www.thelancet.com/journals/lanpub/article/PIIS2468-2667(19)30109-4/fulltext

Australian Bureau of Statistics (2014) 'Measures of Australia's progress, 2013'. 9 May. www.abs.gov.au/ausstats/abs@.nsf/mf/1370.0

Australian Unity (n.d.) 'The Australian Unity Wellbeing Index'. www.australianunity.com.au/about-us/wellbeing-index (retrieved 22 October 2023)

Bann, C. (2016) 'Policy briefing: Natural capital accounting and the Sustainable Development Goals'. Wealth Accounting and the Valuation of Ecosystem Services. May. https://documents1.worldbank.org/curated/en/323151568692500022/pdf/Natural-Capital-Accounting-and-the-Sustainable-Development-Goals.pdf

Birkjær, M., Gamerdinger, A. and El-Abd, S. (2021) 'Towards a Nordic wellbeing economy'. Nordic Council of Ministers. https://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1589849&dswid=1306

Bravo, G. (2014) 'The Human Sustainable Development Index: New calculations and a first critical analysis'. *Ecological Indicators*, 37 (A), 145–50. https://doi.org/10.1016/j.ecolind.2013.10.020

Brule, G. (2022) 'Evaluation of existing indexes of sustainable well-being and propositions for improvement'. *Sustainability*, 14 (2), 1027. https://doi.org/10.3390/su14021027

Brynjolfsson, E., Collis, A., Diewert, W., Eggers, F. and Fox, K. (2019) 'GDP-B: Accounting for the value of new and free goods'. National Bureau of Economic Research Working Paper No. w25965. https://ssrn.com/abstract=336431

Chelli, F., Ciommi, M. and Gigliarano, C. (2013) 'The Index of Sustainable Economic Welfare: A comparison of two Italian regions'. *Procedia: Social and Behavioral Sciences*, 81, 443–8. https://doi.org/10.1016/j.sbspro.2013.06.457

Costanza, R., Lawn, P., Lowe, I. and Martin, P. (2018) 'Achieving genuine progress in Australia'. Asia & the Pacific Policy Society. 14 March. www.policyforum.net/achieving-genuine-progress-australia/

Coyle, D. (2015) 'Commentary: Modernising economic statistics – why it matters'. *National Institute Economic Review*, 234 (1), F4–7. https://doi.org/10.1177/002795011523400108

Coyle, D. (2016) GDP: *A Brief but Affectionate History*, rev. and expanded edn. Princeton, NJ: Princeton University Press.

Coyle, D. and Mitra-Kahn, B. (2017) 'Make the future count'. Enlightenment Economics. 14 September. http://enlightenmenteconomics.com/beta/wp-content/uploads/2021/12/CoyleMitrKahnIndogo.pdf

Dasgupta, P., Managi, S. and Kumar, P. (2022) 'The Inclusive Wealth Index and Sustainable Development Goals'. *Sustainability Science*, 17, 899–903. https://doi.org/10.1007/s11625-021-00915-0

Decancq, K., Fleurbaey, M. and Schokkaert, E. (2015) 'Happiness, equivalent incomes and respect for individual preferences'. *Economica*, 82 (s1), 1082–106. https://doi.org/10.1111/ecca.12152

Decancq, K. and Schokkaert, E. (2015) 'Beyond GDP: Using equivalent incomes to measure well-being in Europe'. Social Indicators Research. February. www.researchgate.net/publication/273516300_Beyond_GDP_Using_Equivalent_Incomes_to_Measure_Well-Being_in_Europe

Department of Finance Canada (2021) 'Measuring what matters: Toward a quality of life strategy for Canada'. Government of Canada. 19 April. www.canada.ca/en/department-finance/services/publications/measuring-what-matters-toward-quality-life-strategy-canada.html

Doughnut Economics Action Lab (2020) 'What is the doughnut? An introduction to the concept at the heart of doughnut economics'. September. https://doughnuteconomics.org/tools/11

Dual Citizen (n.d.) 'Performance index'. https://dualcitizeninc.com/performance-index (retrieved 22 October 2023)

Eker, S. and Ilmola-Sheppard, L. (2020) 'Systems thinking to understand national well-being from a human capital perspective'. *Sustainability*, 12 (5), 1931. https://doi.org/10.3390/su12051931

European Commission (n.d.) 'Beyond GDP publications'. https://ec.europa.eu/environment/beyond_gdp/index_en.html (retrieved 22 October 2023)

European Commission (n.d.) 'Transitions Performance Index (TPI)'. https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/support-national-research-and-innovation-policy-making/transitions-performance-index-tpi_en (retrieved 22 October 2023)

European Commission (n.d.) 'What are the resilience dashboards?' https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en (retrieved 22 October 2023)

Excellence. 15 December. https://escoe-website.s3.amazonaws.com/wp-content/uploads/2020/07/13152731/ESCoE-DP-2017-03.pdf

Fan, J., Li, K., Zhang, X., Hu, J., Hubacek, K., Da, Y., Liang, X. and Cheng, D. (2022) 'Measuring sustainability: Development and application of the Inclusive Wealth Index in China'. *Ecological Economics*, 195, 107357. https://doi.org/10.1016/j.ecolecon.2022.107357

Fioramonti, L. (2016) 'A post-GDP world? Rethinking international politics in the 21st century'. *Global Policy*, 7 (1), 15–24. https://doi.org/10.1111/1758-5899.12269

Global Council on Happiness and Wellbeing (2019) 'Global happiness and wellbeing report'. www.hw.gov.ae/en/download/altkryr-alaaalmy-lsyasat-alsaaad-ojod-alhya-2019

GNH Centre Bhutan (n.d.) 'GNH Happiness Index'. www.gnhcentrebhutan.org/gnh-happiness-index (retrieved 22 October 2023)

Greve, B. (2017) 'How to measure social progress?' *Social Policy & Administration*, 51 (7), 1002–22. https://doi.org/10.1111/spol.12219

Government of India (2021) 'Ecosystem accounts for India: Report of the NCAVES project'. United Nations. https://seea.un.org/content/ecosystem-accounts-india-report-ncaves-project

HM Treasury (2021) 'Wellbeing discussion paper: Monetisation of life satisfaction effect sizes – A review of approaches and proposed approach'. Social Impacts Task Force Discussion Paper. July. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005389/Wellbeing_guidance_for_appraisal_-_background_paper_reviewing_methods_and_approaches.pdf

Horlings, E. and Smits, J. (2019) 'Measuring well-being and sustainability in the Netherlands: The first monitor of well-being'. Paper presented at the ESCoE Conference on Economic Measurement, King's College London, London, 8–10 May. www.researchgate.net/publication/335107460_Measuring_Well-being_and_Sustainability_in_the_Netherlands_the_first_Monitor_of_Well-being

Institut national de la statistique et des études économiques (2023) 'Indicateurs de richesse national'. 16 June. www.insee.fr/fr/statistiques/3281778

Institute for Innovation in Social Policy (n.d.) 'The Index of Social Health'. http://iisp.vassar.edu/ish.html (retrieved 22 October 2023)

Jackson, T., McBride, N., Abdallah, S. and Marks, N. (2008) 'Measuring regional progress: Regional index of sustainable economic well-being (R-ISEW) for all the English regions'. Centre for Well-Being, New Economics Foundation. July. https://web.pdx.edu/~kub/publicfiles/MeasuringWellBeing/Jackson_2008%20GPI%20UK.pdf

Jones, C. and Klenow, P. (2016) 'Beyond GDP? Welfare across countries and time'. *American Economic Review*, 106 (9), 2426–57. www.aeaweb.org/articles?id=10.1257/aer.20110236

Jorgenson, D. (2018) 'Production and welfare: Progress in economic measurement'. *American Economic Review*, 56 (3), 867–919. www.aeaweb.org/articles?id=10.1257/jel.20171358

Jorgenson, D. and Schreyer, P. (2017) 'Measuring individual economic well-being and social welfare within the framework of the System of National Accounts'. *Review of Income and Wealth*, 63 (s2), S460–70. https://doi.org/10.1111/roiw.12326

Kenny, D., Costanza, R., Dowsley, T., Jackson, N., Josol, J., Kubiszewski, I., Narulla, H., Sese, S., Sutanto, A. and Thompson, J. (2019) 'Australia's Genuine Progress Indicator revisited (1962–2013)'. *Ecological Economics*, 158, 1–10. https://doi.org/10.1016/j.ecolecon.2018.11.025

Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T. and Aylmer, C. (2013) 'Beyond GDP: Measuring and achieving global genuine progress'. *Ecological Economics*, 93, 57–68. https://doi.org/10.1016/j.ecolecon.2013.04.019

Kubiszewski, I., Mulder, K., Jarvis, D. and Costanza, R. (2022) 'Toward better measurement of sustainable development and wellbeing: A small number of SDG indicators reliably predict life satisfaction'. *Sustainable Development*, 30(1), 139–48. https://doi.org/10.1002/sd.2234

Legatum Institute (n.d.) 'The Legatum Prosperity Index'. www.prosperity.com/rankings (retrieved 22 October 2023)

Meek Lange, M. (2023) 'Progress'. In E. N. Zalta and U. Nodelman (eds) *The Stanford Encyclopedia of Philosophy*. Stanford University. https://plato.stanford.edu/archives/sum2023/entries/progress

Michaelson, J. (2014) 'National accounts of well-being'. In A. C. Michalos (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer. https://doi.org/10.1007/978-94-007-0753-5_3467

Nakamura, L., Samuels, J. and Soloveichik, R. (2017) 'Measuring the "Free" Digital Economy within the GDP and Productivity Accounts'. Discussion paper. Economics Statistics Centre of Excellence. 15 December. https://escoe-website.s3.amazonaws.com/wp-content/uploads/2020/07/13152731/ESCoE-DP-2017-03.pdf

Noll, H.-H. (2014) 'German system of social indicators'. Leibniz Institute for the Social Sciences. January. www.gesis.org/fileadmin/upload/dienstleistung/daten/soz_indikatoren/SSI_en/German_System_of_Social_Indicators.pdf

Nordhaus, W. and Tobin, J. (1972) 'Is growth obsolete? In W. Nordhaus and J. Tobin (eds) *Economic Research: Retrospect and Prospect* Vol. 5: *Economic Growth*. Cambridge, MA: National Bureau of Economic Research. www.nber.org/books/nord72-1

OECD (2019) 'Society at a glance 2019: OECD social indicators'. www.oecd.org/social/society-at-a-glance-19991290.htm

OECD (2023) 'Democratic resilience in an era of multiple crises'. www.oecd.org/publication/government-at-a-glance/2023

OECD (n.d.) 'OECD environmental data and indicators'. www.oecd.org/environment/indicators-modelling-outlooks/data-and-indicators.htm (retrieved 22 October 2023)

Popa, H., Pater, L. and Cristea, S. (2014) 'A systemic description of sustainable progress'. *Procedia: Social and Behavioral Sciences*, 124, 322–30. https://doi.org/10.1016/j.sbspro.2014.02.492

Post-growth 2018 Conference (2018) 'Post-growth 2018 Conference: 18–19 September, Brussels, Belgium'. www.postgrowth2018.eu

Rosbach, A. (2011) 'Report on GDP and beyond: Measuring progress in a changing world'. European Parliament. 2010/2088(INI). 20 April. www.europarl.europa.eu/doceo/document/A-7-2011-0175_EN.html

Social Indicators of Hong Kong (n.d.) 'Social indicators of Hong Kong'. www.socialindicators.org.hk/en (retrieved 22 October 2023)

Social Progress Imperative (n.d.) 'Social Progress Imperative'. www.socialprogress.org (retrieved 22 October 2023)

Solability (n.d.) 'The GSCI: Global Sustainable Competitiveness Index'. https://solability.com/the-global-sustainable-competitiveness-index/the-index (retrieved 22 October 2023)

Sonthi, C., Harnphatananusorm, S. and Santipolvut, S. (2019) 'Concepts and empirical calculation of the green GDP for Thailand'. *International Journal of Green Economics*, 13 (1), 68. www.researchgate.net/publication/335134255_Concepts_and_empirical_calculation_of_the_green_GDP_for_Thailand

Stutzer, A. and Frey, B. (2012) 'Recent developments in the economics of happiness: A selective overview'. IZA Discussion Paper No. 7078. Institute of Labor Economics. https://ssrn.com/abstract=2192854

Sustainable Development Report (2022) 'Arab SDG index and dashboard report 2022'. 27 April. www.sdgindex.org/reports/arab-sdg-index-and-dashboard-report-2022

Te Tai Ōhanga: The Treasury (n.d.) 'Our Living Standards Framework'. www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework (retrieved 22 October 2023)

Technology Arts Sciences TH Köln (n.d.) 'SSI: Sustainability Society Index'. https://ssi.wi.th-koeln.de/index.html (retrieved 22 October 2023)

United Nations (n.d.) 'System of Environmental Economic Accounting'. https://seea.un.org (retrieved 22 October 2023)

Vemuri, A. and Costanza, R. (2006) 'The role of human, social, built, and natural capital in explaining life satisfaction at the country level: Toward a National Well-Being Index (NWI)'. *Ecological Economics*, 58(1), 119–33. https://doi.org/10.1016/j.ecolecon.2005.02.008

Voss, R. (2021) 'Monitor of well-being and the Sustainable Development Goals 2021'. Statistics Netherlands. https://longreads.cbs.nl/monitor-of-well-being-and-sdgs-2021/introduction

Wang, F., Wang, R. and Wang, J. (2020) 'Measurement of China's green GDP and its dynamic variation based on industrial perspective'. *Environmental Science and Pollution Research*, 27, 43813–28. https://doi.org/10.1007/s11356-020-10236-x

Wellbeing Economy Alliance (2021) 'The latest Happy Planet Index: Costa Rica tops the list, beating Western economies on sustainable wellbeing'. 25 October. https://weall.org/the-latest-happy-planet-index-costa-rica-tops-the-list-beating-western-economies-on-sustainable-wellbeing

World Economic Forum (2021) 'Building back better: Policy pathways for an economic transformation'. June. www.weforum.org/publications/building-back-broader-policy-pathways-for-an-economic-transformation/

World Happiness Report (2022) 'World Happiness Report 2022'. https://worldhappiness.report/ed/2022

World Health Organization (2012) 'WHOQOL: Measuring quality of life'. 1 March. www.who.int/tools/whoqol

Yang, L. (2018) 'Measuring well-being: A multidimensional index integrating subjective well-being and preferences'. *Journal of Human Development and Capabilities*, 19 (4), 456–76. https://doi.org/10.1080/19452829.2018.1474859

This research was undertaken by the Dubai Future Foundation's Dubai Future Institute. The Dubai Future Foundation produces insights and foresight reports using evidence-based analysis and imagination that enable stakeholders to anticipate and better navigate the future.

Our publications can be found at www.dubaifuture.ae/insights/

ABOUT THE DUBAI FUTURE FOUNDATION

The Dubai Future Foundation (DFF) aims to realise the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, for the future of Dubai and consolidate its global status as a leading city of the future. In collaboration with government entities, international companies, start-ups and entrepreneurs in the UAE and around the world, the DFF drives joint efforts to collectively imagine, design and execute the future of Dubai.

Under the supervision and with the support of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Chairman of the Executive Council of Dubai and Chairman of the Board of Trustees of Dubai Future Foundation, DFF works on a three-pronged strategy: to imagine, design and execute the future. It does this through developing and launching national and global programmes and initiatives, preparing plans and strategies for the future, issuing foresight reports, and supporting innovative and high-quality projects. These contribute to positioning Dubai as a global capital for the development and adoption of the latest cutting-edge solutions and practices to serve humanity.

The DFF focuses on identifying the most prominent challenges facing cities, communities, and sectors in the future and transforming them into promising growth opportunities by collecting and analysing data, studying global trends, and keeping pace with and preparing for rapid changes. It is also looking at future sectors, their integration and the reshaping of current industries.

The DFF oversees many pioneering projects and initiatives, such as the Museum of the Future, Area 2071, the Centre for the Fourth Industrial Revolution UAE, Dubai Future Accelerators, One Million Arab Coders, Dubai Future District, Dubai Future Solutions, Dubai Future Forum and Dubai Metaverse Assembly. Its many knowledge initiatives and future design centres contribute to building specialised local talents for future requirements and empowering them with the necessary skills to contribute to the sustainable development of Dubai.

dubaifuture.ae

research@dubaifuture.gov.ae

@dubaifuture

DISCLAIMER

This report was prepared for informational, educational, and guidance purposes. It includes several future directions based on studies and research that should not necessarily be adopted or implemented. The findings, interpretations, and conclusions expressed in this report do not necessarily reflect the views of DFF.

The information presented in this report is based on studies, research, and data available up to the date of publication.

The report aims to provide information and stimulate critical thinking and informed decision-making in the areas of future foresight. DFF disclaims all liability related to the content and use of the report (or any reliance placed on it, in particular, for any interpretation, decisions, or actions based on the information in this report). DFF does not recommend or endorse any specific actions, strategies, or viewpoints discussed in this report.

Other parties may have ownership interests in some of the content contained in this report. DFF in no way represents or warrants that it owns or controls all rights in all content, and DFF will not be liable to users for any claims brought against by third parties in connection with their use of any content.

This report is provided in English as the authoritative and operative version. Any Arabic translation included herein is solely for convenience. While efforts have been made to ensure accuracy, the English version shall prevail in case of any discrepancies or inconsistencies between the two translations.

مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

DUBAIFUTURE.AE