# **Summary for Policy Makers**

#### Introduction

The COVID-19 pandemic and the increasingly severe impacts of climate change provide stark reminders of how vulnerable human prosperity can be to forces outside of economies. They highlight how our relationship to the natural environment can exacerbate the many other risks we face. Mismanagement of nature and failure to consider the longer-term impacts of our actions can carry severe consequences, even if they might not be immediately evident. We therefore need an expanded economic toolkit, including broader measures of economic progress, to secure our collective prosperity and even sustain our existence as a species.

Wealth accounting—the balance sheet for a country—captures the value of all the assets that generate income and support human well-being. Gross domestic product (GDP) indicates how much monetary income or output a country creates in a year; wealth indicates the value of the underlying national assets and therefore the prospects for maintaining and increasing that income over the long term. GDP and wealth are complementary indicators for measuring economic performance and provide a fuller picture when evaluated together. By monitoring trends in wealth, it is possible to see whether GDP growth is achieved by building capital assets, which is sustainable in the long run, or by liquidating assets, which is not. Wealth should be used alongside GDP to provide a means of monitoring the sustainability of economic development.

The Changing Wealth of Nations 2021 (CWON 2021) finds that our material well-being is under threat: from unsustainable exploitation of nature, from mismanagement and mispricing of the assets that make up national wealth, and from a lack of collective action at local, national, and regional levels. CWON 2021 provides the data and analysis that can promote a more sustainable approach to prosperity and help policy makers navigate these challenges. The report draws on a unique global asset database that allows detailed examination of the underlying value of a nation's wealth, taking into account human, produced, and natural capital and

noting where assets are being managed sustainably or unsustainably. CWON 2021 presents the world's most comprehensive accounts to date of the wealth of nations that comprise not only what was made by people (produced capital) but also the wealth embedded in people themselves (human capital), and the wealth offered by nature (natural capital).

This report does not simply examine the historical wealth of nations; it provides the cutting-edge tools to manage wealth for the future. How do our collective actions impact the value of our natural and human assets? How will climate change affect the value of fossil fuel resources, and how should governments respond? How can policy better account for the value of ecosystem services such as the protection provided by mangroves or the value to people of protected natural areas? Robust answers to such questions have been elusive, and CWON 2021 provides them. The analysis in this report and the accompanying database will help policy makers weigh national, regional, and global risks, and in the face of those risks determine how to build wealth that is sustainable over generations.

CWON 2021 marks a significant advance in how to measure and assess the sustainability of economic development. The report includes 146 countries and every year back to 1995, and it does so in a way that is both rigorous and comparable across space and time. This analysis does not claim to reflect all the intrinsic values of human or natural capital, but instead provides measures that are compatible with systems of national accounting. By doing so, CWON 2021 demonstrates that natural and human forms of capital deserve consideration at the highest levels of government and are also worthy investments to promote sustainable prosperity.

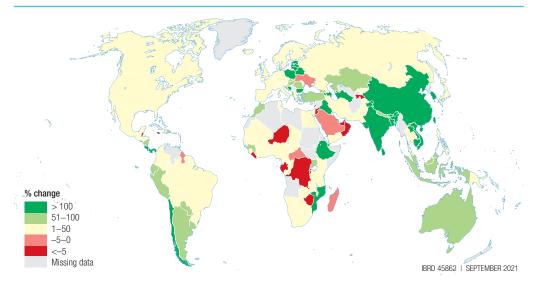
## **Global Wealth Has Never Been Greater, but the Risks Faced Have Also Never Been Greater**

In many countries, GDP is increasing at the expense of total wealth and future prosperity. If not properly informed, citizens might mistakenly expect their improving prosperity to continue indefinitely. However, if rising GDP today comes at the expense of declining wealth per capita, then prosperity will be unsustainable. Economic growth will erode its own base.

CWON 2021's measure of the change in wealth per capita over time is perhaps the most important metric to consider in addition to GDP, and it provides an actionable way to track sustainability. Despite a global expansion in total wealth per capita between 1995 and 2018 (map PS.1), many countries are on an unsustainable development path because their natural, human, or produced capital is being run down in favor of shortterm boosts in income or consumption. In countries where today's GDP is achieved by consuming or degrading assets over time, for example by overfishing or soil degradation, total wealth is declining. This can happen even as GDP rises, but it undermines future prosperity.

Measuring the change in wealth per capita, and contributions from individual wealth components, allows policy makers to monitor the sustainability of development and its resilience to shocks. Countries can

MAP PS.1 Growth of Total Wealth per Capita, 1995–2018



Source: World Bank.

identify asset management policies that make future prosperity more sustainable, resilient, and equitable. CWON 2021 finds that while total wealth has increased everywhere, albeit with a widening gap between nations, per capita wealth has not. More than a third of low-income countries saw falling wealth when measured in per capita terms as wealth creation failed to keep pace with population. Declining wealth per capita breaks a core principle of sustainability: future generations should be left no worse off than current generations.

Global wealth inequality is also increasing. Low-income countries are falling further behind in terms of their share of global wealth. If they are to catch up with the rest of humankind, they will need their overall wealth, including human, natural, and produced assets, to grow at an aboveaverage rate. This edition of CWON finds that precisely the opposite is occurring. Low-income countries are expanding their wealth at a relatively slow rate, as reflected in the global shares of wealth: between 1995 and 2018, the share of low-income countries in global wealth hardly changed, remaining below 1 percent despite being home to about 8 percent of the world's population.

# **CWON 2021 Recommends Four Priorities for Policy Action**

1. Measure and monitor wealth to boost sustainability and prosperity. Governments should measure and monitor wealth, alongside GDP. They can use the System of National Accounts (SNA) framework and the System of Environmental-Economic Accounting (SEEA) standards to integrate wealth accounting systematically into national balance

- sheets. CWON provides the world's most comprehensive and SNAcompatible international data on wealth that can be used as a benchmark and proxy in the absence of detailed bottom-up national wealth accounts. Other actors such as financial markets can utilize wealth accounting to track sustainability and environmental, social, and governance (ESG)-related indicators.
- 2. Invest in sustainable wealth. Governments should create enabling conditions for balanced investments in all components of wealth, not just produced and nonrenewable assets but also human and renewable natural capital. Assets representing common and public goods, like education and public health and often the wealth provided by nature, will require public investments or active government intervention to establish property and use rights to prevent depletion or unsustainable conversion to other forms of capital. Governments also have the duty to correct market failures to enable private investment in wealth creation by aligning private returns to investments with the public benefits and damages they create.
- 3. Create policy incentives to protect and increase the value of wealth. Where government policies are designed to maximize short-term income only, results can come at the expense of future income and well-being opportunities. Wealth accounting helps identify and correct such policy failures. Assets that are mispriced get mismanaged. Environmentally harmful produced capital and fossil fuels are often overrewarded by markets, while essential human and renewable natural assets are often undervalued and underpriced. This leads to the latter's degradation and depletion, with systemic risks to macrofiscal stability and potentially existential risk to humans. Governments should therefore use policies and pricing to support socially beneficial assets and do the reverse for those with negative external effects.
- 4. Diversify and rebalance the asset portfolio to make growth resilient to external shocks. Multiple environmental crises (climate change, biodiversity loss, ocean damage, and pollution) increase the intensity and frequency of external shocks to growth while also making these shocks more difficult to predict. Standard economic recipes for product and export diversification beyond commodities are no longer sufficient, as they often lead to accumulation of produced assets in emission-intensive manufacturing and land use. Diversification of wealth—the assets that countries rely on to generate income—can instead make economic development more resilient to uncertain external factors such as climate change and global decarbonization. A diverse asset portfolio is also more sustainable than one overly dependent on single assets, particularly depleting ones such as oil, gas, and some minerals.

These policy recommendations are informed by expanded wealth accounts, and accompanying analysis contained in the new CWON 2021 report. More detailed policy discussion can be found in the report and in the policy matrix presented in table PS.1 at the end of this summary. 1

## Policy Priority 1: Measure and Monitor Wealth to Boost Sustainability and Prosperity

CWON's balance sheet approach to asset valuation, rigorously based on both the SNA framework and the SEEA, provides comparable and comprehensive measures of wealth. This allows ministries of finance and national treasuries to consider monetary trade-offs and the important role for asset accumulation across natural capital, human capital, and produced capital. It also shines a light on the role of capital degradation, depletion, and depreciation, which can undermine the sustainability of economic growth. For some assets, particularly natural assets, this monetary valuation can help ensure they get an appropriate level of economic policy consideration, given their importance to sustainable economic prosperity.

Because low-income countries have so few other assets, proportionately, renewable natural assets such as land and ecosystems are crucial for them, comprising around 23 percent of their total wealth. This is the highest fraction of total wealth coming from renewable natural capital among all income groups. Nonetheless, it is still likely to be a conservative estimate as several ecosystem services—most notably, natural carbon storage—cannot yet be included pending updates to SEEA methodologies. As a consequence, governments may be tempted to seek a short-term boost to consumption and growth by liquidating them. However, higher income levels are associated with success in enhancing the value of natural capital, not degrading it.

Sustainable well-being depends on well-functioning ecosystems and educated populations. Natural and human capital are therefore at the core of our prosperity, but few of these assets are accounted for in the national balance sheets and hence appear invisible or worthless to policy makers. When we think of wealth, most of us might think about financial assets, or companies, computers, and cars. But what about forests, mangroves, water, fish, or clean air? What about healthy people and their capacity for productive work? And can we cooperate when the challenges in managing our prosperity transcend national boundaries? Properly accounting for wealth can help us better manage it, work cooperatively across borders, and ensure that our prosperity is sustainable. CWON 2021 provides the data and analysis that can help.

#### Policy Priority 2: Invest in Sustainable Wealth

The wealth of nations is inextricably linked to the policy choices nations make—it is not static and independent of government. Policy choices change the trajectories and composition of that wealth; price assets incorrectly, and economies may become exposed to needless risks and dependencies.

Where wealth per capita is declining, there is insufficient investment in a nation's assets, or they are being mismanaged or misvalued. Actions to enhance the value of human capital, for example, would include the creation of quality jobs, fair salaries, and investments to improve the education and health of citizens. Investments in produced capital would include the construction and maintenance of public infrastructure, buildings, and cities that enable citizens to lead productive lives. For natural capital, wealth can be built through nature restoration or improving the fertility of agricultural land, but it can also encompass protection of sensitive ecosystems such as forests to enhance their value.

Human capital, measured by the value of earnings over a person's lifetime, is the most important component of wealth globally. It constituted a staggering 64 percent of global wealth in 2018. CWON 2021 provides wealth accounts for human capital disaggregated by gender and employment status. By measuring human capital in terms of expected lifetime earnings, CWON 2021 provides policy makers with a direct view into the value people can obtain in the labor market. Job creation and quality jobs will be a critical challenge of the twenty-first century, particularly in countries with young and fast-growing populations. CWON 2021 measures can help policy makers evaluate past successes and future opportunities to boost human capital—and the economic opportunities for people—as part of the development process.

High levels of air pollution and other drivers of environmental health are harming people and limiting the world's human capital. Such factors can be integrated into human capital valuations, as premature deaths and disabilities reduce expected earnings. Pollution of outdoor and indoor air is one of the world's leading environmental risk factors to health, accounting for over 6 million premature deaths in 2019.

The consequences of COVID-19 have already had a negative impact on people's lives and livelihoods around the world. The resulting economic downturn and associated unemployment and loss of earnings have already set back the long-term trajectory of poverty reduction, especially in low-income countries. This can be quantified in terms of the impact on human capital in the wealth of nations.

## Policy Priority 3: Create Policy Incentives to Protect and Increase the Value of Wealth

Governments have a role to play by enacting regulatory and fiscal incentives to better reflect the societal costs and benefits provided by different asset classes in their market prices. This can improve the efficiency and sustainability of natural capital utilization, such as protecting fisheries from overexploitation, taxing carbon emissions to signal to the market the full societal value of assets, or paying for ecosystem services. This can build national wealth and help to address global challenges such as climate change.

CWON 2021 finds the countries falling behind the most are often those struggling to manage their assets in sustainable ways. Declining stocks of renewable natural capital, for example, may reflect overexploitation or degradation of ecosystem services, and many of the 26 countries with declining or stagnant wealth per capita are those with falling values of natural capital per capita. New CWON 2021 decomposition analysis, which breaks down wealth changes into quantity and unit value components, can help shed light on what may be driving these patterns and how policy makers might respond.

Countries that mismanage nature are also more vulnerable to economic shocks. Failing to diversify a nation's assets puts growth at risk. Many countries with abundant mineral and fossil fuel resources have struggled to use the income from these assets to diversify the wealth base of their economies. CWON 2021 finds that when an external shocksuch as a fall in commodity prices—hits, their entire economy is vulnerable and total wealth per capita can decline. Meanwhile, countries that have diversified their wealth are better equipped to weather such storms.

Without better regulations and changing social norms regarding how we value nonfinancial assets, many categories of wealth, including natural and human capital, will remain mispriced and hence mismanaged. Lowincome countries will not catch up, and global wealth will be put at even greater risk.

Wealth held in renewable natural capital per person is greater in high-income than in low-income countries. This is encouraging news. It suggests that far from there being a trade-off between economic development and nature, they can be complements: prosperous countries are those that have protected and enhanced their natural assets, such as forests, fisheries, landscapes, productive land, and the value and scale of protected areas. Improving economic productivity of nature and of people is a key driver underpinning this trend. Therefore, low-income countries can emulate this strategy and prioritize both nature and overall economic prosperity at the same time.

The CWON accounts provide new ways to measure sustainability in the context of material well-being. However, changes in wealth per capita provide only a measure of "weak" sustainability that implicitly assumes a high degree of substitutability among different asset classes. The emergence of multiple global crises, such as biodiversity loss, climate change, and ocean pollution, is a strong wake-up call about the limits to replacing critical ecosystem services with human-made substitutes.

#### Policy Priority 4: Diversify and Rebalance the Asset Portfolio

Overdependence on any single asset category in national wealth, particularly commodities, is risky for countries. Nonrenewable natural capital assets (for example, comprising fossil fuel and mineral wealth) grew rapidly from 1995 until around 2014, but they have been declining in value since then, driven mainly by falling petroleum prices. Countries reliant on such resources for exports and government revenues were hit hard by this decline. Many of the 26 countries with declining or stagnant wealth per capita in this period were resource-rich, commodity-dependent countries. This edition of CWON provides new analysis on asset diversification and concentration to help policy makers achieve greater economic diversification to help manage and reduce these risks in the future.

What about the impact of climate change policies on fossil fuel wealth? CWON finds that as the world moves toward low-carbon sources of energy, the value of oil, gas, and coal could decline by 13 to 18 percent by 2050. But what matters most is that this risk falls unevenly around the world. Some countries more reliant on fossil fuels are facing significant economic risk. They can manage this risk by adopting proactive policies to navigate their own transition away from a dependence on fossil fuel wealth. Traditionally, diversification meant moving beyond extractive industries to exporting processed fuel and fossil fuel-intensive products instead. Going forward, such approaches will be much riskier amid global efforts to decarbonize economic activities. Countries are now beginning to tighten their climate policies and restrict access to their markets for imported carbon-intensive products. International cooperation can also help manage such risks. But CWON 2021 finds that some fuel exporters may have weak economic incentives to cooperate without bold policy actions by fuel importers, such as border carbon adjustment taxes (BCATs), already proposed by the European Union.

Renewable energy endowments, such as water, wind, and sunlight, represent a potentially large but unaccounted-for wealth of nations. Renewable energy should be included in national balance sheets in a similar way to fossil fuel reserves. CWON 2021 presents an approach to doing so and finds that hydropower dominates renewable energy wealth, and its value exceeds the value of fossil fuels in some nonrenewable resource-rich countries. Better energy and climate policies can quickly unlock significant value from solar and wind energy assets. New analysis shows how policies can be used to increase the value of renewable energy to match the value of fossil fuel assets.

## **Using Wealth Accounting to Guide Policy**

CWON 2021 contains not just updated and extended wealth accounts but also extensive policy analysis demonstrating how wealth accounts can help to guide policy choices. For example, CWON 2021 applies the lens of wealth to analysis of asset portfolio management under risk and uncertainty from factors such as climate change and global decarbonization. CWON 2021 does not attempt to predict the impact of rare and unexpected events that have potentially extreme or wide-ranging impacts and which may be more frequent with expected environmental crises, such as climate change and biodiversity loss, and which may include surprises such as the COVID-19 pandemic. Instead, CWON 2021 helps us understand and navigate uncertainty by providing scenarios that explore future wealth under several possible scenarios of climate change and climate policies. For human capital, CWON 2021 explores the impact of the COVID-19 pandemic and air pollution, illustrating how management of natural assets and human assets can interact. For fossil fuels, the scenario analysis identifies policy pathways to manage the risks of stranded assets through cooperative and noncooperative low-carbon growth strategies and BCATs. CWON 2021 also explores how policy reforms can enhance wealth creation from natural capital such as fisheries and renewable energy.

Conventional measures of fiscal sustainability overlook important wealth considerations, such as the depletion and degradation of natural capital, and even the destruction of produced assets by natural disasters.

For example, the source of government revenues may be unsustainable if it comes from extraction of nonrenewable assets, such as fossil fuels, or if it comes from an asset that is being mismanaged, such as an overfished fisheries sector or properties vulnerable to floods or cyclones. New analysis on the challenges of Dutch disease and resource dependence illustrate how countries might mitigate these risks and plan for declining demand for fossil fuels. By introducing information on the assets underlying government revenue sources, the wealth accounts can help guide more sustainable fiscal policy.

#### **Future Work and Unanswered Ouestions**

Although the analysis considers the potential impacts of climate change on asset value, CWON does not yet include the value of carbon retention or sequestration services as part of wealth embedded in biological ecosystems (for example, forests, soils, and oceans). Nor does it subtract the social cost of carbon from fossil fuels. There are ample cross-country data available to measure physical carbon balances but no final agreement about how to account for the value of climate regulation services in the SEEA.

Future versions of CWON will also seek to capture how social capital and biodiversity influence the value of assets in the core wealth accounts. These advances are somewhat different in nature. Biodiversity and social capital are what Dasgupta (2021) refers to as enabling characteristics of assets, a quality that gives value to other assets, rather than assets as such. Social capital may not easily be made part of the core monetary accounts, but new techniques to measure social capital can provide essential, complementary indicators to changes in total wealth per capita. Currently, wealth accounts do not fully capture the impact on renewable natural capital where losses and degradation have brought ecosystems to the point of potentially irreversible thresholds, which may precipitate catastrophic events on a scale that escapes the conceptual apparatus of traditional economics.

Further, improvements in data, including those gathered via remote sensing methods, open possibilities for greater spatial and temporal measurement of wealth. For example, by breaking down the wealth accounts at subnational levels of analysis, policy makers can see how unequal the distribution of wealth and different assets is across the country, and how that has evolved over time. This may also provide data and analysis to guide local decision-making.

CWON 2021 describes some of the main findings emerging from the new, expanded wealth accounts—the most comprehensive and SNAcompatible wealth accounts available so far. The analysis and the abundance of data—which are available online—should provide a rich toolkit for policy makers. Excel tools and interactive data visualizations can be used to analyze trends within countries, across time, and between peers. Breaking down accounts by individual assets, and decomposing wealth by quantity and unit value, can further guide choices about building wealth for the future.

## Sustainable Prosperity Requires Collective Action at Local, **National, and Global Levels**

A green, resilient, and inclusive recovery from the pandemic-induced economic crisis demands urgent changes in how local and national governments manage their human, natural, and produced capital. It also requires unprecedented levels of international action and cooperation, including action to address climate change, loss of biodiversity, and other global challenges. This means combining domestic policies with international agreements on taxing externalities such as carbon emissions or agreements over the sustainable management of transboundary assets such as fish or water.

Going forward, policy interventions—such as carbon taxes and payments for ecosystems services—are urgently needed to make market prices explicitly reflect the social cost of carbon dioxide emissions and the value of global climate regulation services provided by nature. By ignoring polluting and climate change impacts and costs to society, fossil fuel assets are overvalued in the market. Yet assets that can help in climate mitigation efforts, such as forest ecosystems, are undervalued.

Governments are not the only actors that matter. Individuals, companies, and investors are all managers of assets, and the choices they make can make an important difference. Financial markets, for example, have started to take sustainable development seriously as part of decision-making. This includes major progress on incorporating ESG considerations into investing choices. However, ESG often relies on environmental measures that can overweight physical properties (for example, hectares of forest cover) while underestimating the asset value and the long-term economic benefits of sustainable management of natural resources (for example, expressed via natural capital accounts in CWON). Wealth data have the potential to improve ESG measures by providing insights into the changing natural wealth in monetary value terms at the country level. This can be used, for example, to inform sovereign ESG scores.

By better managing, measuring, and valuing natural assets, we can give our natural environment the ability to grow and enhance our wellbeing. By recognizing the importance of human capital, we can move beyond a focus on short-term profits and incomes to one based on investments in skills and a healthy population that will ensure continuous prosperity. By considering wealth distribution, we can ensure more inclusive and resilient growth in material well-being. Economic development, flourishing humans, and nature can all be complements—indeed, they must be treated as complements if humans are to thrive on this planet.

TABLE PS.1 Policy Matrix and Guide to Further Details

Assets P	Priority policy areas	Further details	Measure and track wealth	Policies to invest in wealth	Policies to increase value of wealth	Diversify assets to manage risks
Renewable • natural capital	Forests: Policies and investments to prevent deforestation and forest degradation can enhance overall natural capital wealth, especially in low-income and lower-middle-income countries, which, as a group, show a decline in forest timber and forest ecosystem services wealth per capita. Mechanisms that make visible the full value of forest ecosystem services can help incentivize protection and sustainable use, relative to timber and agricultural uses.	Chapter 5		7	7	
•	Oritical services provided by forests and other ecosystems include retention (stock) and sequestration (flow) of carbon. Markets so far failed to reflect this value in widespread carbon prices. Domestic policy action to price carbon, alongside internationally comparable accounting standards consistent with SEEA, may pave the way for the emergence of global demand and willingness to pay for retention and sequestration services provided by ecosystems and stem overuse of forests for timber or clearance.	Chapter 1			7	
•	Marine capture fisheries: Reforming and repurposing fishery subsidies, agreeing to sustainable quotas, and the replenishment and monitoring of fish stocks can all help prevent overfishing and depletion of fisheries wealth, especially impacting coastal communities.	Chapter 6			>	
•	Mangroves: Return to investments in mangrove restoration and preservation should include both the value of the ecosystem services they provide to the economy and the value of produced capital they protect from floods and storm surges, especially as these risks are increasing with climate impacts.	Chapter 6	7			
•	Agricultural land: Countries with significant shares of cropland wealth that are vulnerable to the impacts of dimate change on crop yields should manage this risk by diversifying their portfolio, investing in other renewable assets and/or human or produced capital.	Chapter 5	7			7
•	Renewable energy: Countries, SNA, and SEEA should assign explicit values to renewable energy assets in national balance sheets, just as they currently assign values to fossil fuel reserves.	Chapter 14	7			
Nonrenewable • natural capital	Fossil fuel-rich countries should manage the risks associated with global decarbonization and stranded assets via international cooperation and asset diversification, avoiding carbon-intensive downstream activities. Policy instruments might include energy taxation (or reducing energy subsidies) to better reflect environmental costs of fuels. This can also help manage external risks, such as border carbon adjustment taxes and other tariff and nontariff trade barriers to goods with a high environmental footprint.	Chapters 9, 10, 11		7		7
•	Resource rents from nonrenewable natural resources (especially oil, gas, and minerals) should be transparently collected and reinvested in sustainable forms of wealth—including public infrastructure, green produced capital, renewable natural wealth, and human capital (skills, health) to support sustainable prosperity.	Chapters 9, 11			7	7
Human capital •	Investing in girls' education can improve both the level and equity of human capital wealth. This may be particularly urgent in countries with overly unequal distribution of human capital, such as measured by CWON, including in some resource-rich countries.	Chapter 12		>		7
•	Investments in education and health, including policies and measures that reduce population exposure to air pollution, can enhance the value of human capital alongside improving well-being and productivity.	Chapters 7, 8, 12		>	,	
Produced • capital	Public capital (for example, infrastructure): Use proceeds from nonrenewable natural resources (oil, gas, and minerals) to invest in public infrastructure in capital-scarce countries.	Chapters 9, 11		>		7
•	Risks to the value of produced capital, such as infrastructure and cities, from storm and flooding can be mitgated by leveraging investments in nature, such as protective mangroves.	Chapter 6		7	7	
•	Proceeds from nonrenewables can be invested in produced capital and used to help improve the investment environment—a process known as "investing in investing," promoting both asset diversification away from dependence on nonrenewables and economic sustainability.	Chapters 9, 11		7		
•	Fiscal policies should avoid unwarranted accumulation of produced capital in sectors exposed to transition risks and encourage accumulation of climate-proof produced assets.	Chapter 10		7	7	

Source: World Bank.

Note: CWON = Changing Wealth of Nations; SEEA = System of Environmental-Economic Accounting; SNA = System of National Accounts.

## **Note**

1. The Changing Wealth of Nations 2021 report, wealth accounts data, and other resources can be found at http://worldbank.org/cwon.

## Reference

Dasgupta, P. 2021. The Economics of Biodiversity: The Dasgupta Review. London: HM Treasury.