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CHAPTER 22

Returning borrowed time: Rethinking progress in the context of Malaysia's gross domestic product (GDP)

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Abstract: While gross domestic product (GDP) remains an important measure of economic activity, it does not account for the depletion of natural capital or deterioration of ecosystem services that underpin long-term prosperity. Drawing on concepts such as ecological overshoot and planetary boundaries, this paper examines how Malaysia's current development model risks borrowing from the future by prioritising short-term economic growth over ecological sustainability. Therefore, this paper seeks to present the environmental context for the need to transition towards a measure of progress beyond Malaysia's GDP. This perspective nonetheless represents only one dimension of the broader conversation, as the case for measuring progress beyond GDP also includes social and economic considerations. The discussion does not seek to exclude or diminish these factors, but rather to contribute a focused lens to the broader dialogue.

INTRODUCTION

Over the past half-century, Malaysia has charted a remarkable development trajectory. From an economy once heavily reliant on commodities such as rubber and tin, the country has transformed into a diversified middle-income nation integrated into global manufacturing and services value chains. Industrialisation, infrastructure expansion, and sustained economic growth have lifted millions out of poverty and significantly improved living standards.

Measured through conventional economic indicators, the story is compelling. Malaysia's gross domestic product (GDP) has expanded dramatically since independence, reaching more than USD 420 billion in recent years. Poverty rates have fallen from nearly half the population in the 1970s to below six per cent today. Investments in education, healthcare, and infrastructure have reshaped both urban and rural landscapes, while industrial clusters and development corridors have strengthened Malaysia's role as a regional economic hub.

For decades, GDP growth became the default measure of national progress. When economic output expands, employment opportunities increase, incomes rise, and governments gain the fiscal capacity to invest in social services and public infrastructure. As a measure of market activity, GDP remains an important indicator of economic dynamism.

Yet beneath these reassuring numbers, another story is unfolding. Across the world, the natural environment is under increasing strain, biodiversity is declining at unprecedented rates, and ecosystems, on which economic activities depend, are being pushed toward ecological limits. This raises an increasingly urgent question: ***Does GDP alone capture the full meaning of progress?***

Economic expansion can occur alongside ecological decline. Forests may shrink even as output grows. Fisheries may be depleted while national accounts record rising economic activity. Biodiversity may disappear without leaving any trace in the economic

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statistics that guide policy. In such circumstances, societies may find themselves confronting a difficult reality: some of the prosperity enjoyed today may have been built on borrowed ecological time—drawing down the natural capital that future prosperity depends upon.

NATURE'S CONTRIBUTIONS : A STABILISING FORCE AND ECONOMIC INPUT

The term "natural capital" highlights the role that nature plays in the economy like financial or built capital, natural capital provides essential resources and services for economic activity. The term refers to the world's stocks of natural assets (e.g., forests, soils, rivers, oceans, and biodiversity) that generate services such as food production, water purification, climate regulation, and habitat for wildlife.

Examples of how nature acts as (typically unaccounted for) inputs to the economy include the provision of reliable and clean water to industries and agriculture, material production for industry, recreational spots for tourism, pollination of crops for agriculture, and heat reduction and flood mitigation for all. Where nature is degraded, so are the services they provide, causing damages and raising production costs, with the potential of even leading to the loss of viability for industries that depend on these services.

Malaysia's natural wealth under pressure

Malaysia is widely recognised as one of the world's megadiverse countries. Its tropical rainforests, mangroves, coral reefs and river systems support extraordinary biodiversity and provide essential ecosystem services. These ecosystems regulate water flows, store carbon, stabilise coastlines and sustain fisheries that feed millions of people. Yet these natural systems face mounting pressure.

The Malaysian population of the Sumatran rhinoceros was declared extinct in 2019 following the death of the last known individual in captivity (WWF-Malaysia 2019). Populations of the Malayan tiger have fallen to critically low levels (WWF-Malaysia, n.d.), while once abundant nesting populations of leatherback sea turtles along the east coast have nearly vanished (Mortimer 2024). The disappearance of these species not only symbolise the larger destruction and deterioration of their habitats, but will also, in turn, impact the ecosystem of these habitats, reducing their resilience.

Marine ecosystems have experienced significant strain. Historical studies indicate that demersal fish catch rates in some Malaysian waters declined by as much as 89 – 96% between 1967 and 1997. Meanwhile, employment in marine capture fisheries increased by roughly 40% between 1999 and 2022 while landings remained largely unchanged— the need for increasing fishing effort for stagnant yields illustrates clearly how the deterioration of natural capital negatively impacts the economy.

On land and in rivers, rapid development and land use change can intensify sedimentation, pollution and flood risks. The extreme flooding at the end of 2021 was estimated to have cost the nation RM 6.1 billion (The Malaysian Reserve 2022). Despite numbers like this, the cumulative impacts on biodiversity and ecosystem services of economic developments often remain poorly reflected in economic reporting.

Ecological overshoot and Malaysia's environmental reality

One way to understand the tension between economic growth and environmental limits is through the concept of Earth Overshoot Day. Earth Overshoot Day marks the date each year when humanity's demand for ecological resources exceeds what the planet can regenerate within that same year. From that point onward, humanity operates in ecological deficit—drawing down natural capital.

When natural capital is depleted faster than they can regenerate, societies effectively begin borrowing from the future. The implications are profound: forests deplete faster than they regrow, overfishing beyond replenishment rates, carbon dioxide emit faster than ecosystems can absorb it, and degradation of soils and freshwater systems all reduce nature's capacity to sustain future consumption. Over time, ecosystems lose resilience and may approach tipping points where recovery becomes difficult or impossible. Malaysia's ecological footprint illustrates this challenge.

In 2026, Malaysia's National Overshoot Day is estimated to fall on 8 May. As this date falls less than halfway through the year, this means that if everyone on Earth consumed resources at the same rate as the average Malaysian, humanity would require more than two planets to sustain that lifestyle.

Malaysia's overshoot day has been trending earlier over the years - moving forward nearly a month from 1 June in 2020 to its current date, signalling both an increase in consumption patterns and a decrease in biocapacity. In other words, Malaysia of 2020 has already borrowed from Malaysia of 2026, reducing the production of resources for us to sustainably consume, while paradoxically we consume more. The continuation of this trend in the future—higher consumption of fewer and fewer available resources—leads to an increasingly fragile foundation for wellbeing and economic stability.

Paradoxically, the same period has seen positive economic performance. Malaysia's GDP grew from approximately USD 344.7 billion in 2020 to about USD 422.6 billion in 2024—an increase of more than 20%. These gains are real and significant. Yet they should be understood alongside a growing ecological deficit that may constrain future prosperity. When a country consumes beyond what its ecosystems can sustainably regenerate, it risks undermining the natural foundations that support long-term economic output, resilience, and wellbeing.

Planetary boundaries and the limits of the Earth system

The concept of ecological overshoot reflects a broader scientific understanding of planetary limits. The planetary boundaries framework identifies the environmental thresholds that regulate the stability of the Earth system. These include climate change, biodiversity integrity, land system change, freshwater use, ocean acidification, nutrient cycles, and chemical pollution.

Crossing these thresholds increases the risk of destabilising the ecological systems upon which human societies depend. Scientific assessments suggest that several planetary boundaries—including climate change, biodiversity loss, land system change and nutrient cycles—have already been breached at the global level. Economic systems ultimately operate within the biosphere, not outside it. When planetary limits are exceeded, the environmental foundations of prosperity begin to erode.

GDP: POWERFUL BUT INCOMPLETE PICTURE OF PROGRESS

The Gross Domestic Product (GDP) was developed as a macroeconomic accounting tool to measure the value of goods and services produced within an economy. It provides an important snapshot of economic activity. GDP was never intended to measure overall societal wellbeing. As economist Simon Kuznets cautioned when developing national income accounts, national income statistics should not be interpreted as indicators of welfare. However, GDP's numerical clarity and comparability have made it an attractive proxy for development.

A system that only measures the value of goods and services produced by an economy, however, will fail to account for the loss of natural ecosystems and subsequently ecosystem services. When forests are cleared or minerals extracted, the economic transactions involved may increase GDP. Yet the loss of vital ecosystem services (e.g., flood mitigation, reliable water sources, pollination, and biodiversity habitats) is not accounted for until their impacts are seen, and therefore very rarely considered in decision-making. In this sense, GDP can record the economic activity associated with environmental damage while ignoring the depletion of natural capital that sustains long-term prosperity.

Global efforts beyond GDP

Recognition of GDP's limitations has grown steadily over recent decades. Under the global Sustainable Development Goals (SDG) framework adopted by the United Nations, countries are committed to integrating economic, social, and environmental dimensions of development. Importantly, SDG 17 Target 19 calls on governments to develop measurements of progress on sustainable development that complement GDP.

Several conceptual frameworks have emerged to guide this shift. The "wedding cake" model of the SDGs, developed by the Stockholm Resilience Centre, illustrates how the economy sits within society, and both depend upon the biosphere (Figures 1 and 2). Environmental sustainability, therefore, forms the foundation upon which social well-being and economic prosperity ultimately depend. Similarly, the concept of Doughnut Economics, developed by Kate Raworth, proposes that societies should operate within a safe and just space defined by ecological ceilings and social foundations (Figure 3).

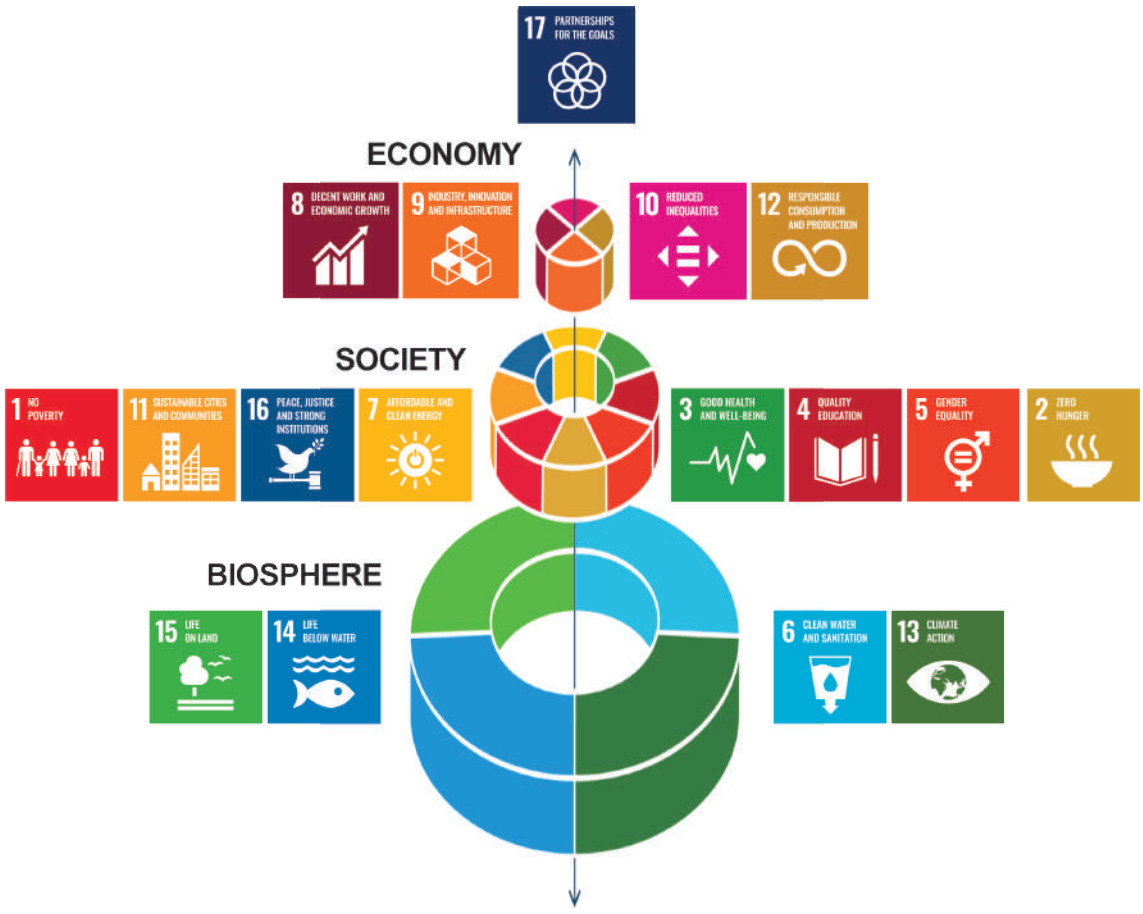

Figure 1. Azote for Stockholm Resilience Centre, Stockholm University CC BY-ND 3.0.

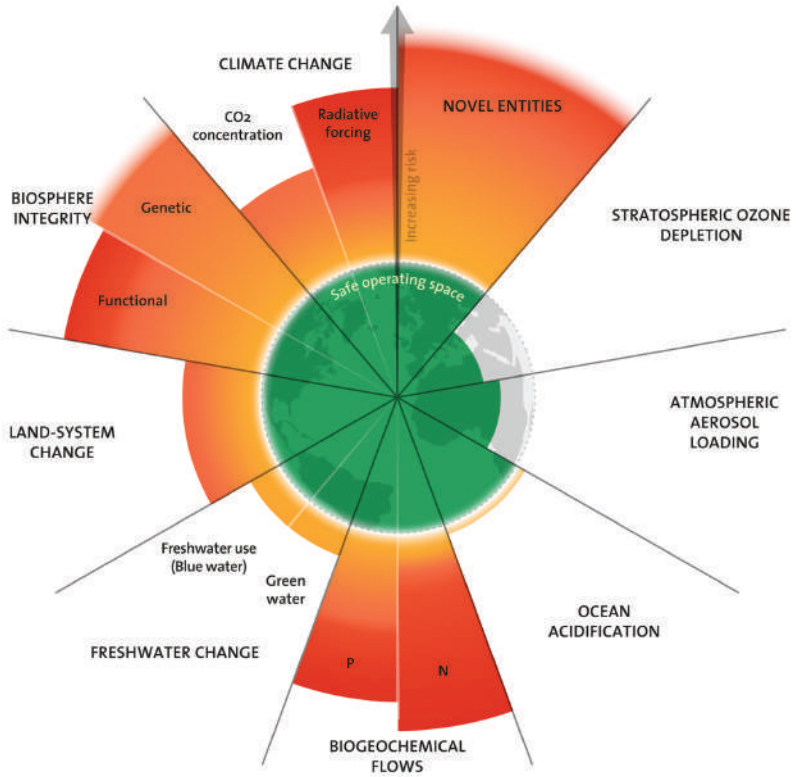

Figure 2. Azote for Stockholm Resilience Centre, based on analysis in Sakschewski *et al*. (2025).

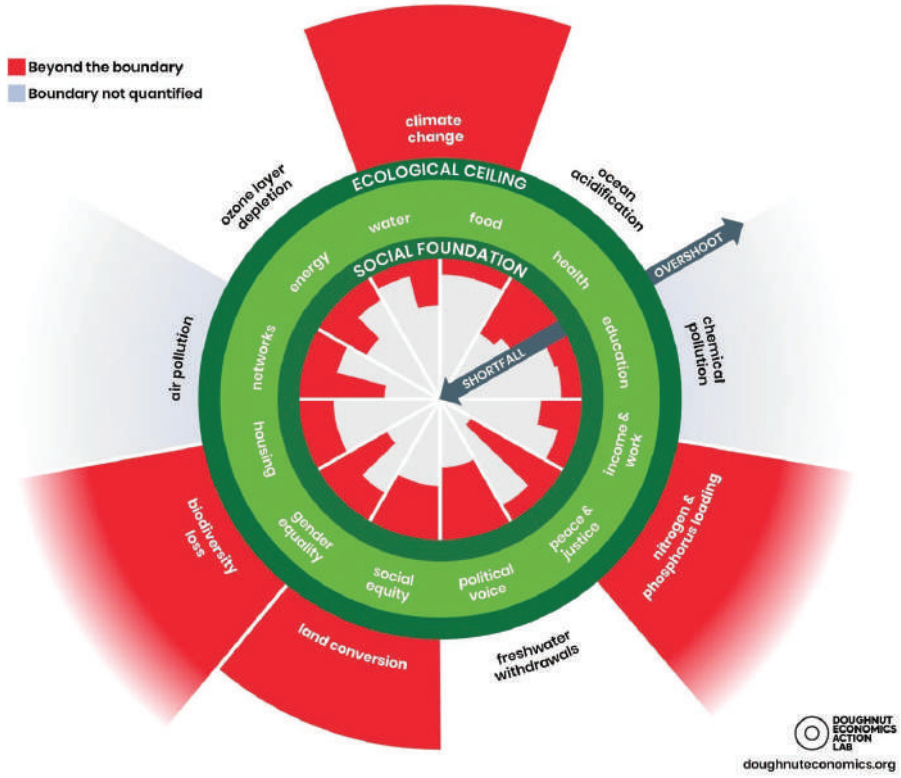

Figure 3. The Doughnut of social and planetary boundaries.
Photo credit: Kate Raworth and Christian Guthier CC-BY-SA 4.0.

Another emerging field, Planetary Health, emphasises the interdependence between human health, economic stability and the condition of the Earth's natural systems. At the international policy level, the adoption of the Kunming Montreal Global Biodiversity Framework further underscores the need to align economic systems with ecological limits, calling for the transformation of economic sectors to halt and reverse biodiversity loss. Together, these initiatives reflect a growing consensus: economic progress must be understood not only through flows of income, but through the condition of the natural systems that sustain life.

The Policy Landscape: GDP Centric Laws and Institutional Structures

Malaysia's policy architecture reflects the historical prioritisation of economic growth. Several laws, policies, and institutions illustrate how GDP-centric development objectives shape environmental governance.

National development planning

Malaysia's five-year development plans allocate national budgets and investment priorities across sectors. While environmental sustainability is increasingly recognised, economic expansion remains the primary objective. Large infrastructure projects (e.g., highways, ports, industrial zones, and energy developments) are frequently justified based on their projected contribution to economic growth and regional competitiveness.

Resource-driven economic policies

Several sectors critical to Malaysia's GDP rely heavily on natural resource extraction (e.g., oil and gas, palm oil and plantation agriculture, timber and forestry, mining and mineral extraction). Policy frameworks governing these sectors historically emphasised production targets, export revenues, and investment attraction. Although sustainability standards have improved in recent years, such as certification schemes in forestry and palm oil, the underlying economic incentives continue to prioritise output growth.

Environmental regulation as a mitigation framework

Malaysia's primary environmental legislation, the Environmental Quality Act 1974, provides the legal basis for pollution control and environmental impact assessments. However, this regulatory approach often functions as a mitigation framework rather than a development filter. Projects are assessed for environmental impacts, but approval decisions frequently involve balancing environmental costs against economic benefits. In practice, this balancing process tends to favour projects with strong economic justification, particularly those linked to national development goals.

Economic corridors and resource development

Malaysia's regional development corridors illustrate how economic growth strategies intersect with environmental considerations.

GDP in motion: When economic priorities override environmental considerations

Why metrics matter

Metrics shape attention, priorities, and accountability. When governments measure only GDP, or output, they manage for output; when they measure ecological health and wellbeing, they can manage for resilience. Better indicators lead to better decisions for both the environment and long-term prosperity, because they make trade-offs visible earlier, help prevent slow-moving damage from being ignored, and enable the public to hold institutions accountable for outcomes that matter across generations. In short, what gets measured gets managed. Several recent and ongoing developments illustrate how GDP centric considerations can dominate when environmental objectives collide with economic ambitions.

Carbon Capture, Utilization and Storage (CCUS) legislation
The 2025 Carbon Capture, Utilization, and Storage (CCUS) Act illustrates how economic growth imperatives continue to shape Malaysia's climate and environmental governance. By framing CCUS—the capture and long-term storage of CO_2 from industrial sources—as a catalyst for economic growth in meeting climate mitigation targets, the Act emphasises measurable economic outputs, reinforcing a GDP-centric approach to climate progress. In tandem with the passing of the CCUS Act, Malaysia has pursued international agreements to import carbon, signaling a prioritisation of economic gains from international trade, even as broader regulatory frameworks to enable and facilitate national climate action remain underdeveloped.

This contrast raises questions about how progress is defined in Malaysia's climate agenda. The country has committed to achieving net-zero emissions by 2050, and the National Energy Transition Roadmap identifies CCUS as one pathway. Yet, despite longstanding intentions to establish an overarching Climate Change Act as a comprehensive governance framework, it has not materialised. Instead, the CCUS Act was rapidly developed and passed while the Climate Change Bill has taken years to pass and is currently still pending, reflecting how economically framed interventions can advance more quickly than holistic climate governance.

Issues with CCUS technology itself are also present. Globally, CCUS deployment often falls short of expectations. Many facilities achieve less than the widely cited 90% capture rate, and none consistently exceed 80%. In Malaysia, CCUS could account for roughly 13% of projected energy transition spending (RM160 – 170 billion), while delivering only about 5% of total emissions reductions. The technology also carries risks, including CO_2 leakage, groundwater contamination, ecosystem disruption, and uncertainties around long-term storage.

While CCUS may have a role in hard-to-abate sectors such as cement and steel, it risks becoming a "false solution" if it prolongs fossil fuel dependence, delays renewable energy expansion, or justifies further oil and gas development alongside the environmental risks named above. This tension highlights the need to consider whether policy focus should instead prioritise more on proven and cost-effective strategies, including energy efficiency, renewable energy scaling, and ecosystem protection—approaches that can deliver more reliable environmental and climate outcomes.

Large hydropower and industrial corridors in Sarawak
Hydropower development in Sarawak has supported the industrialisation agenda under the Sarawak Corridor of Renewable Energy. While hydropower provides low carbon electricity for industry, large dam projects have raised concerns about ecosystem loss, displacement of indigenous communities, and long term ecological impacts.

Infrastructure expansion and forest fragmentation
Major infrastructure projects such as highways and rail developments have contributed significantly to economic connectivity and trade. However, such projects can also fragment forest landscapes and wildlife habitats if ecological safeguards are not fully integrated into planning processes.

Plantation expansion and land use change
Palm oil remains one of Malaysia's most important export commodities and a major contributor to GDP. While sustainability standards have improved, plantation expansion has contributed to deforestation and peatland conversion in some regions.

A structural challenge

These examples reveal a structural challenge in policymaking: economic ministries, development agencies, and investment frameworks are typically designed to maximise growth, while environmental institutions are tasked with managing impacts after decisions have already been made.

Breaking this pattern requires moving environmental considerations upstream into economic decision making itself. Only when nature is recognised as a core economic asset—rather than an external constraint—can Malaysia truly move beyond GDP and ensure that development no longer borrows from the future.

MALAYSIA'S EMERGING POLICY LANDSCAPE

Malaysia has begun expanding how progress is measured. Successive Malaysia Plans have referred to increasing the Malaysian Well Being Index, and have increasingly aligned national development priorities with the Sustainable Development Goals. The SDG Roadmap Phase 2 highlights the need to strengthen national measurement systems and explore approaches that move beyond GDP-centric indicators. Policy discourse has also begun recognising emerging economic paradigms such as the green economy, blue economy, and the planetary health agenda, which emphasise the relationship between ecological integrity and human wellbeing.

Malaysia has developed a National Planetary Health Action Plan, reflecting growing awareness that environmental degradation carries significant implications for public health, food security, and economic stability. Within the national statistical system, the Department of Statistics Malaysia has expanded environmental economic accounting aligned with the international System of Environmental Economic Accounting framework.

These alternative frameworks offer several important benefits. First, they enable the systematic collection and documentation of data that GDP excludes, including environmental quality, ecosystem condition, social outcomes, and distributional impacts. Second, they help reveal trade offs and interlinkages between economic, social, and environmental objectives, supporting more integrated analysis. Third, they provide a foundation for evidence-based policymaking that goes beyond monetary aggregates, potentially facilitating better-targeted interventions, improved policy coherence, and enhanced transparency.

Despite these advances, significant limitations remain. In most cases, these frameworks function as supplementary or parallel reporting mechanisms rather than as core decision -making tools. They are rarely embedded into binding policy mandates, budget allocation criteria, or institutional performance assessments. GDP continues to dominate planning, budgeting, and policy evaluation, reinforcing its primacy in the national development agenda. As a result, alternative indicators often coexist with, rather than challenge, GDP-based priorities, leading to situations where environmental and well-being objectives are subordinated when they conflict with growth targets.

The fragmentation challenge

One of the paradoxes of the "Beyond GDP" conversation is that while many alternative indicators now exist, they often remain fragmented. Environmental indicators, wellbeing indices, sustainability metrics and natural capital accounts are increasingly developed across ministries and international frameworks.Yet these indicators rarely carry the same influence as GDP in shaping budgets, policies and institutional incentives.

In practice, GDP remains the dominant organising principle of decision making systems. Alternative indicators frequently function as informational systems without decision authority. This illustrates a deeper challenge: redefining progress requires not only better indicators but also a redesign of the relationship between indicators within governance systems. Unless ecological and wellbeing metrics carry institutional authority in planning, budgeting and performance evaluation, they risk remaining isolated achievements rather than transformative tools.

Governance, justice, and future generations

Borrowing from the future is not only an environmental issue—it is also a question of justice. If progress is to be meaningful, it must protect these rights over time, not secure short-term gains by transferring harm to those who come after us.

Environmental degradation often disproportionately affects communities with fewer resources, limited political voice, or greater dependence on local ecosystems in the present. Polluted water, degraded fisheries, haze-related health impacts, and climate-driven disasters tend to fall most heavily on vulnerable populations, particularly those who rely heavily on healthy ecosystems for their livelihoods.

Intergenerational equity adds another dimension. Future generations inherit environmental conditions created by present decisions, yet have little influence over them. Reversing these human-made impacts takes years or decades, meaning those who did not contribute to their degradation must bear the long-term ecological and economic consequences.

Globally, there is growing recognition that development must safeguard the wellbeing of both present and future generations. A rights-based approach therefore requires policies to identify and reduce disproportionate impacts, ensure access to remedy where harm occurs, and prioritise protections for those at greatest risk. This also elevates procedural environmental rights (i.e., access to information, meaningful participation in decision-making, and access to justice) as essential safeguards to prevent foreseeable harm and to ensure that development choices are made transparently, fairly, and with accountability.

Future generations can also be taken into account through multiple policy tools. Denmark and France have used a Youth Climate Council and Youth Forum respectively to give youths a formally recognised voice for climate policy, while Wales and Hungary have Commissioners or Ombudsmen for future generations. The UN has its Declaration on Future Generations which links sustainable development and risk reduction with duties to ensure future generations can thrive. From a technical point of view, the 2006 Stern Review (The London School of Economics and Political Science 2006) went against economic convention to use a low "social discount rate" when calculating future costs and benefits to reflect the ethical view that the welfare of future generations should not be heavily discounted simply because it occurs later in time (Heiling 2021).

RETURNING BORROWED TIME

The challenge facing societies today is not simply one of measurement but of governance. We are already seeing the impacts of ecological degradation, and, if this continues unchecked, future generations will inherit diminished natural systems and fewer development options. Returning borrowed time therefore requires aligning economic decision making with environmental limits.

Potential policy directions include:

- Integrating natural capital accounting and cost-benefit analysis into fiscal and development planning, respectively;
- Strengthening ecological indicators in sectoral and institutional policies and performance assessments;
- Embedding ecological thresholds within national planning frameworks;
- Linking budget allocations to sustainability performance;
- Operationalising sustainability pillars within national development strategies; and
- Embedding intergenerational equity and environmental rights in governance, including through participatory mechanisms and long-term decision tools.

These reforms require not only technical capacity but also institutional courage. Malaysia's forests, rivers and seas are not merely resources for present use. They are part of a shared inheritance connecting past generations with those yet to come. True progress must therefore mean strengthening economic opportunity while restoring the ecological systems that sustain it. The opportunity to do so still exists, but it depends on what societies choose to measure and ultimately, what they choose to value.

The clock is still ticking.

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