

The Genuine Progress Indicator: Measuring Economic Welfare Beyond GDP

Ida Kubiszewski, Institute for Global Prosperity, University College London, London, United Kingdom

© 2026 Elsevier B.V. All rights are reserved, including those for text and data mining, AI training, and similar technologies.

This is an update of Ida Kubiszewski, The Genuine Progress Indicator: A Measure of Net Economic Welfare, Editor(s): Brian Fath, Encyclopedia of Ecology (Second Edition), Elsevier, 2019, Pages 327–335, ISBN 9780444641304, <https://doi.org/10.1016/B978-0-12-409548-9.10609-8>.

Introduction	1
Problems With GDP	2
What is the Genuine Progress Indicator (GPI)?	2
Global, National, and Subnational Results	3
Divergence Between GDP and GPI	5
Critiques of GPI	6
Policy Applications of the Genuine Progress Indicator	6
GPI Balance Sheet	7
Future Direction	7
Conclusion	8
References	8

Abstract

The United Nations has set ambitious global objectives through the Sustainable Development Goals (SDGs), yet Gross Domestic Product (GDP) remains the dominant measure of progress worldwide. GDP is increasingly recognised as a flawed proxy for development as it counts all expenditures as positive, including those associated with disasters and disease; it excludes many non-market contributions to wellbeing, such as household labour and the informal economy; and it ignores the distribution of income and wealth. In response, a wide range of alternative indicators has been proposed. Among them, the Genuine Progress Indicator (GPI) has gained particular prominence. GPI begins with personal consumption expenditures, a core component of GDP, but adjusts this number using around two dozen social, environmental, and economic components to approximate net economic welfare rather than income alone. Empirical applications across countries reveal that while GDP has continued to rise, GPI per capita has stagnated or declined in many cases since the late 1970s, largely due to rising inequality, environmental degradation, and other costs. GPI is not a complete measure of human wellbeing, but as a metric of economic welfare, it provides a more accurate reflection of the balance between the benefits and costs of growth than GDP, and offers important guidance for policy and sustainable development.

Key Points

- *GDP vs GPI:* GDP was never designed to measure welfare, and it often counts harmful activities (like oil spills or illness) as positives. GPI corrects for this by separating welfare-enhancing from welfare-reducing activities.
- *How GPI works:* The Genuine Progress Indicator adjusts personal consumption (a GDP component) with ~25 additions and subtractions, including environmental degradation, income inequality, household work, and volunteering, to better reflect net economic welfare.
- *Global and national trends:* Across many countries, GPI initially tracks GDP but diverges once rising inequality and environmental costs outweigh benefits. For example, in the US since the late 1970s and globally since 1978.
- *Policy relevance:* States like Maryland and Vermont, along with governments worldwide, are starting to use GPI to inform policy, highlighting its growing role as a tool for measuring progress beyond GDP.

Introduction

Gross Domestic Product (GDP) has long been the dominant indicator of economic activity. Designed during the Great Depression and refined during World War II, GDP was never intended as a measure of social progress or human wellbeing. It simply aggregates the monetary value of goods and services exchanged in markets. While this makes GDP useful for tracking short-term economic fluctuations, it does not distinguish between activities that increase welfare and those that diminish it.

The shortcomings of GDP have been recognised for decades. Environmental degradation, social inequality, and the depletion of natural capital often accompany GDP growth. Defensive expenditures such as cleaning up pollution, commuting costs, or rebuilding after disasters count as positive contributions. By contrast, non-market services like unpaid household labour and

volunteer work remain invisible. In effect, GDP measures the speed of the economic treadmill without telling us whether we are moving toward or away from genuine prosperity.

Despite these limitations, GDP remains deeply entrenched in policymaking, international comparisons, and public discourse. This persistence stems from its institutionalisation in national accounts, its comparability across countries, and the political utility of a simple growth number. Yet dissatisfaction has grown, particularly in light of the multiple crises confronting societies today.

The COVID-19 pandemic underscored GDP's inadequacy. National accounts registered sharp contractions in 2020, but failed to capture the essential role of unpaid care work, community solidarity, and digital networks in maintaining resilience. Similarly, GDP rebounded as consumption resumed, even while many communities faced widening inequality, ill health, and growing precarity (Stiglitz, 2020).

In response to GDP's inadequacies, scholars and policymakers have developed numerous alternative indicators. These include composite measures such as the Human Development Index (HDI), dashboards like the OECD Better Life Index, and subjective wellbeing surveys. Among these, the Genuine Progress Indicator (GPI) has emerged as a particularly comprehensive approach. By starting with personal consumption and then adjusting for social, environmental, and distributional factors, GPI aims to measure net economic welfare rather than gross economic activity.

Problems With GDP

GDP was never designed to measure social or economic welfare. Its original creators warned against using it for anything other than a specialised tool to track a narrow segment of economic activity. Yet since the 1950s, GDP growth has become the dominant measure of overall progress (Nordhaus and Tobin, 1972). By this yardstick, the global economy has expanded more than three-fold since 1950. However, evidence shows that economic welfare, as measured by the Genuine Progress Indicator, has slightly declined since 1978 (Kubiszewski *et al.*, 2013).

GDP's current role poses a number of problems. It treats every expenditure as positive and fails to distinguish between activities that enhance welfare and those that reduce it. An oil spill, for example, raises GDP because of the cleanup and remediation costs, yet clearly detracts from wellbeing. The same holds for spending triggered by hurricanes, cancer treatment, crime, car accidents, or divorce.

Technically, GDP adds up all marketed deliveries to "final demand" (sales to households, government, net exports, and capital formation) regardless of whether they provide a genuine benefit or represent "defensive expenditures" such as pollution cleanup (Leipert, 1989). This stems from the input/output accounting framework, only items produced and consumed within market sectors are included. By design, non-market contributions to welfare are excluded.

Correcting this flaw would require revising input/output tables to distinguish activities that add to welfare from those that subtract from it, and to include goods and services that exist outside markets but significantly affect wellbeing. In recent years, organisations such as the United Nations Statistics Division and the World Bank have developed approaches to incorporate ecosystem services into national accounts (Bartelmus, 2014; Hein *et al.*, 2015). Some efforts adapt input/output models to integrate the benefits provided by nature.

As Herman Daly, former senior economist at the World Bank, observed, "the current national accounting system treats the earth as a business in liquidation." He described the modern era as one of "uneconomic growth," in which GDP continues to rise but economic welfare stagnates or declines.

GDP also ignores contributions to wellbeing that occur outside monetary exchange. Picking vegetables from a garden and preparing a meal for family or friends does not register in GDP, while purchasing a similar frozen meal in a supermarket does. A parent caring for children or elderly parent at home or volunteering in the community is similarly invisible in GDP, despite providing significant value to society.

Finally, GDP does not account for how income is distributed. Distribution matters because the welfare impact of an additional dollar is greater for poorer households than for wealthy ones. Moreover, inequality itself contributes to a range of social problems and undermines collective wellbeing (Wilkinson and Pickett, 2010). GDP is indifferent to whether income accrues to a single corporation or is broadly shared across society.

Despite these fundamental shortcomings, GDP remains the most widely used indicator of a nation's performance. Its simplicity, institutionalisation, and comparability ensure its dominance, even as its limitations become increasingly apparent.

What is the Genuine Progress Indicator (GPI)?

The Genuine Progress Indicator (GPI) is a measure of economic welfare designed to correct the shortcomings of Gross Domestic Product (GDP). It was developed from the Index of Sustainable Economic Welfare (ISEW), first proposed by Daly and Cobb (1989) and refined by the organisation Redefining Progress in the mid-1990s. While GDP records the market value of goods and services, GPI adjusts this measure to reflect whether economic activity contributes to or detracts from societal wellbeing.

The construction of GPI begins with personal consumption expenditures, a major component of GDP. This figure is then adjusted by a set of approximately 25 components that account for costs and benefits often ignored in conventional accounts (Fig. 1). These adjustments subtract items such as environmental degradation, depletion of natural resources, crime, and family

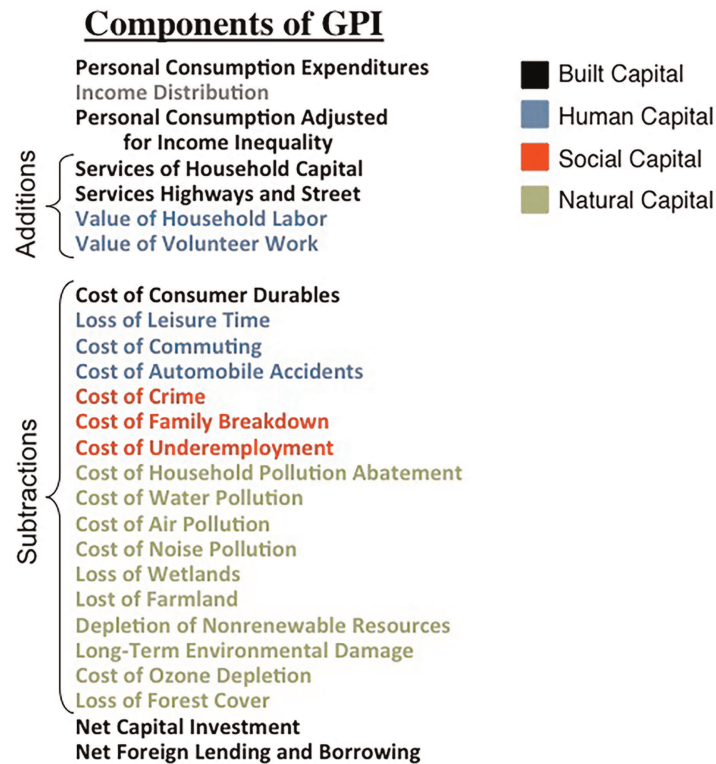


Fig. 1 Components of GPI separated into built, human, social, and natural capitals. Source: Author

breakdown, and add items such as the value of unpaid household labour and volunteer work. GPI also corrects for inequality by adjusting personal consumption according to income distribution, recognising that an additional unit of income contributes more to welfare when received by those on lower incomes (Bagstad and Shammin, 2012; Cobb *et al.*, 1995; Lawn, 2003).

The components of GPI are usually grouped into four forms of capital: built, human, social, and natural. This structure highlights the multiple domains that underpin welfare and allows analysts to examine which specific factors contribute positively or negatively over time. Because of this disaggregated design, GPI provides both a single index of economic welfare and a diagnostic tool that can identify the drivers within it.

It is important to note that GPI is not intended to measure sustainability directly. Instead, it is best understood as an indicator of the economic dimension of welfare, which should be interpreted alongside biophysical and social indicators. In this way, GPI complements measures such as ecological footprint or life satisfaction surveys, providing a clearer picture of how economic activity affects human and ecological wellbeing.

Global, National, and Subnational Results

Since the Genuine Progress Indicator (GPI) was first proposed in the early 1990s, it has been applied across over 80 countries and numerous subnational contexts (Fig. 2). These studies consistently reveal a broad pattern: while Gross Domestic Product (GDP) has grown steadily, GPI per capita has stagnated or declined in many regions, signalling a growing divergence between conventional measures of production and the welfare they generate (Kubiszewski *et al.*, 2013).

The first global aggregation of GPI/ISEW studies, covering 17 countries that together represented over half of the world’s population and GDP, showed that global GPI per capita peaked in the late 1970s (Fig. 2) (Kubiszewski *et al.*, 2013). This finding closely coincided with the point at which the global ecological footprint exceeded the Earth’s biocapacity, and when global life satisfaction indicators began to plateau. Although GDP per capita continued to rise, global GPI stagnated or fell, largely due to growing inequality, environmental degradation, and social costs. More recent studies confirm this trend, suggesting that while economic activity has intensified, its marginal benefits to welfare have been increasingly offset by environmental and social losses (Van der Slycken and Bleys, 2023) (Fig. 3).

Country-level GPI studies reveal similar trajectories. In the United States, GPI per capita closely tracked GDP growth until the late 1970s, when increasing income inequality and environmental costs caused GPI to level off (Talberth *et al.*, 2007). Comparable patterns have been documented in Canada (Anielski, 2001), Australia (Lawn, 2003), and many European countries (Jackson and McBride, 2005). In emerging economies, divergence has occurred later but is equally evident. For example, China’s

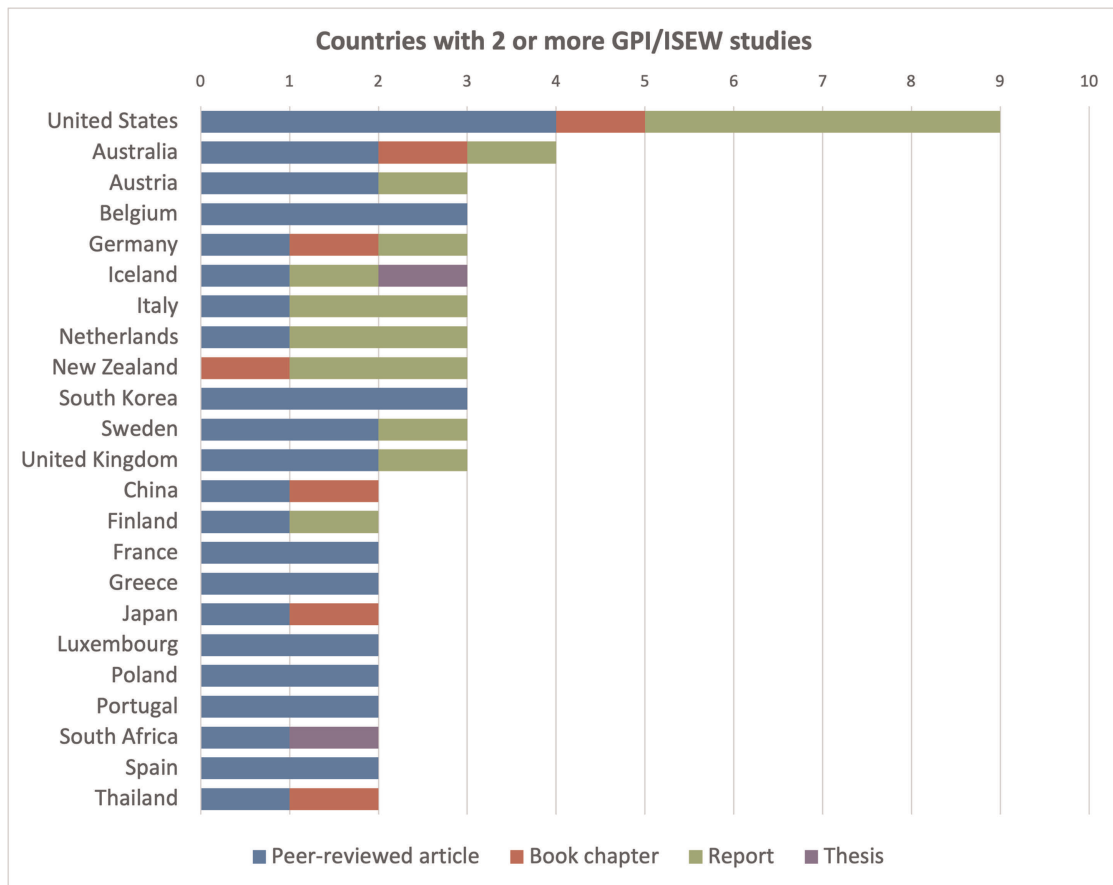


Fig. 2 Countries with 2 or more GPI/ISEW studies (a total of 85 countries with 127 studies). Countries with one study done include Angola, Benin, Botswana, Brazil, Burkina-Faso, Burundi, Cameroon, Central Africa, Chad, Chile, Comoros, Congo, Cote d'Ivoire, Czech Rep., Czech Republic, Denmark, Djibouti, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Gabon, Gambia, Guinea, Hungary, India, Ireland, Israel, Kenya, Latvia, Lesotho, Liberia, Lithuania, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Norway, Russia, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Siera Leone, Singapore, Slovakia, Slovenia, Sudan, Swaziland, Tanzania, Togo, Turkey, Uganda, Ukraine, Vietnam, Zimbabwe. Source: Author.

GPI per capita diverged from GDP in the mid-1990s, reflecting the rapid accumulation of environmental costs alongside industrialisation (Wen *et al.*, 2008). India's GPI has also shown slower growth relative to GDP, due largely to social inequality and ecological degradation (Lawn, 2008). These cases demonstrate that beyond a threshold of development, additional GDP growth often contributes little to net economic welfare.

At subnational levels, GPI has proven useful for assessing regional wellbeing and policy effectiveness. Maryland was the first U.S. state to adopt GPI officially, incorporating it into outcomes-based budgeting (McGuire *et al.*, 2012). Vermont followed by legislating for regular GPI reporting (Erickson *et al.*, 2013). Other states, including Hawaii, Utah, and Colorado, have produced GPI studies through government agencies or research institutes (Bagstad *et al.*, 2014). These subnational analyses often reveal even sharper divergences between GDP and welfare, reflecting regional disparities in income distribution, land use, and environmental pressures. Outside the U.S., Nova Scotia, Canada, developed a prototype set of "full-cost accounts" incorporating natural and social capital into provincial reporting (Panno and Colman, 2009). European subnational applications include studies in Belgium and Austria, among others, which show that local GPI results can diverge significantly from national averages, underscoring the importance of regional dynamics (Stockhammer *et al.*, 1997; Van der Slycken and Bleys, 2023).

Taken together, these studies demonstrate several consistent findings. First, GDP and GPI tend to track each other during early stages of economic development, but diverge once inequality and environmental costs outweigh the benefits of additional consumption. Second, the point of divergence varies across countries and regions depending on historical development paths, governance quality, and resource use intensity. Third, subnational applications provide valuable granularity, helping policymakers identify welfare drivers and trade-offs at scales where interventions are often most effective.

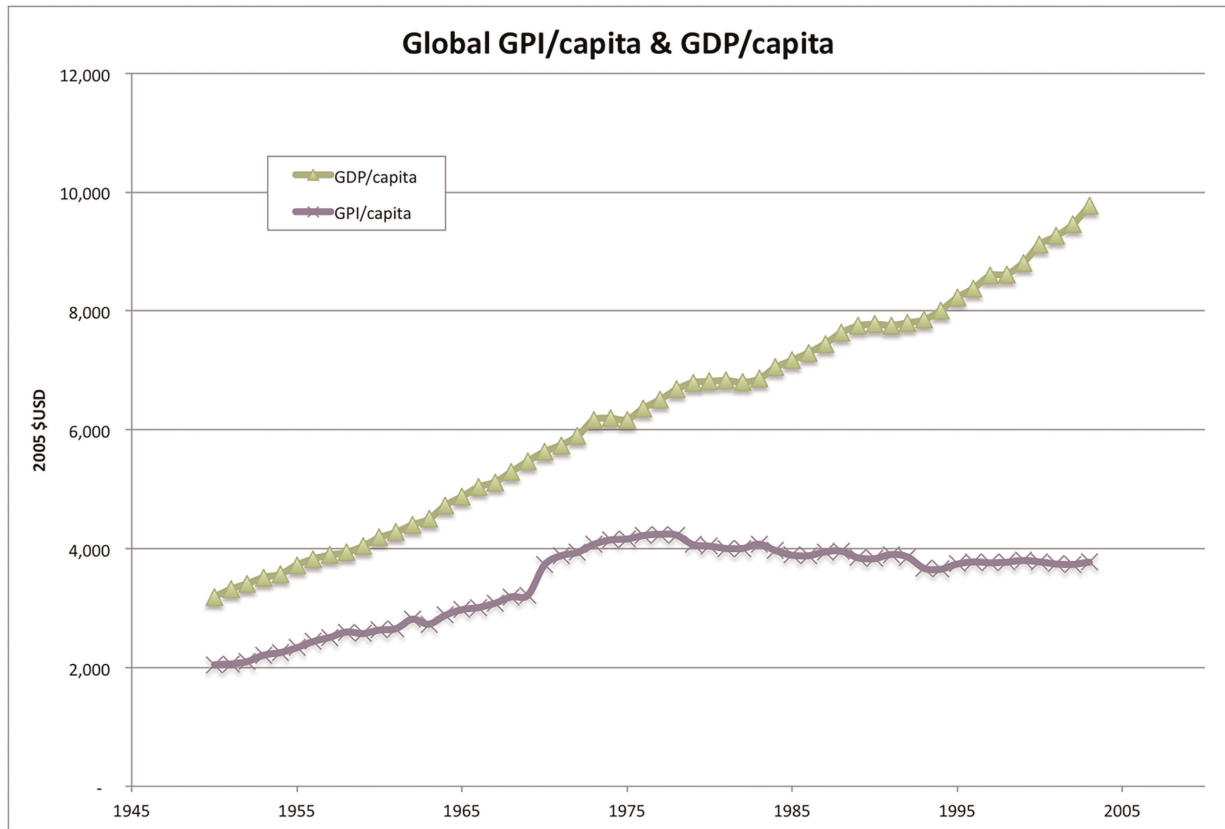


Fig. 3 Global GPI/capita and GDP/capita. GPI per capita estimated by aggregating national GPI/ISEW studies covering 53% of global population and 59% of global GDP. Source: Kubiszewski *et al.* (2013).

Overall, the empirical record shows that while GDP continues to rise globally and nationally, GPI often levels off or declines. This divergence underscores the limitations of GDP as a welfare measure and highlights the potential of GPI as a complementary tool for evaluating economic performance in terms of sustainable and inclusive welfare.

Divergence Between GDP and GPI

GDP was developed in the United States during the Great Depression and World War II, when societies urgently needed to rebuild infrastructure and financial systems (Fioramonti, 2017). At that time, natural resources were assumed to be abundant, while limited access to infrastructure and consumer goods constrained improvements in human welfare (Daly, 1992). In this context, it was logical to design an indicator that ignored natural resources and wealth distribution, focusing instead on increasing the production and consumption of market goods and services, which were then scarce (Costanza *et al.*, 2014).

The success of that rebuilding effort, however, has dramatically changed the world. Today, human infrastructure is extensive, and in many cases the primary limits to progress are ecological rather than material. Depletion of natural resources, climate change, and ecosystem degradation increasingly constrain welfare, overshadowing gains from higher consumption (Beddoe *et al.*, 2009; Costanza, 2008).

Between roughly 1950 and 1975, GPI per capita increased in most countries, largely reflecting post-war reconstruction when consumption and built capital were the limiting factors and environmental externalities were less significant. From the mid- to late 1970s, however, rising income costs of inequality and growing environmental began to offset the benefits of consumption, causing GPI per capita to stagnate even as GDP continued to grow.

GPI is not a complete measure of wellbeing, as it focuses on economic welfare and excludes some social and cultural dimensions. Yet it remains far superior to GDP, which was never designed to measure welfare. Economic welfare depends on the stocks of natural, human, built, and social capital. By adding and subtracting components from GDP to reflect their net contributions to these stocks, GPI provides a clearer picture of welfare dynamics (Vemuri and Costanza, 2006). The divergence between GDP and GPI, beginning around 1978, highlights the aspects of welfare that have been in decline ever since and identifies the areas where societal improvement is both needed and possible.

Critiques of GPI

Despite its growing adoption, the Genuine Progress Indicator (GPI) is not without limitations. Scholars have identified several recurring critiques, many of which stem from methodological complexity and conceptual ambiguity (Bagstad and Ceroni, 2008; Brennan, 2008; Harris, 2007; Kubiszewski *et al.*, 2013; Neumayer, 2010). These critiques can broadly be summarised as follows:

- (1) *Valuation methods.* Some GPI components rely on contested valuation methods, particularly those based on cumulative cost accounting for long-term environmental damages (e.g. land degradation, wetland loss). Critics argue that these methods exaggerate welfare losses or rest on arbitrary assumptions. Proponents, however, note that cumulative cost accounting reflects a “strong sustainability” stance, meaning that once natural capital is lost, its services are permanently diminished. Recent methodological advances suggest complementing this approach with sensitivity analyses and transparent reporting of assumptions, or moving towards hybrid models that incorporate both annual and cumulative costs (Lawn, 2005; Van der Slycken and Bleys, 2023).
- (2) *Substitutability of capitals.* Because GPI aggregates costs and benefits of built, human, natural, and social capital into a single measure, it has been criticised for implying that these forms of capital are interchangeable. For example, the welfare benefits of new infrastructure might appear to offset the destruction of forests, even though the latter provides irreplaceable ecosystem services. A practical solution is to present GPI alongside complementary biophysical indicators, such as the Ecological Footprint, planetary boundaries, or material flow accounts, which reveal whether underlying stocks of natural capital are being eroded (Kubiszewski *et al.*, 2013; Van der Slycken and Bleys, 2023). In this way, GPI retains its role as a measure of economic welfare, while sustainability is assessed using ecological accounts and models.
- (3) *Incomplete welfare coverage.* GPI was designed to measure economic welfare, not all dimensions of wellbeing. It therefore excludes elements such as political freedom, cultural vitality, or subjective wellbeing. Critics argue that this limits its usefulness as a holistic measure of progress. One solution is to explicitly frame GPI as one component within a broader “dashboard” of wellbeing indicators. For instance, combining GPI with subjective wellbeing surveys, inequality indices, and environmental metrics can provide a more comprehensive and policy-relevant picture (Costanza *et al.*, 2014; Kubiszewski *et al.*, 2013).
- (4) *Subjectivity and lack of standardisation.* The selection of GPI components and weights can vary between countries and studies, raising questions about comparability. Indeed, methodological divergence has grown as more studies are produced worldwide (Kubiszewski *et al.*, 2013). This has spurred calls for a GPI “2.0” framework with clearer guidelines and harmonised methods (Bagstad *et al.*, 2014; Van der Slycken and Bleys, 2023). Initiatives to update the GPI methodology now focus on improving cross-time and cross-boundary accounting (e.g. how to treat climate change impacts or trade-related ecological costs), and on expanding coverage of unpaid work, inequality, and the shadow economy.
- (5) *Theoretical foundations.* Early critics suggested that GPI lacked a coherent theoretical basis (Neumayer, 1999, 2010). More recent work has addressed this by grounding GPI in ecological economics. Van der Slycken and Bleys (2023) propose distinguishing between two interpretations: “experiential welfare,” which measures current benefits and costs within national borders, and “welfare of present activities,” which includes forward-looking costs and benefits that extend across time and space. Clarifying which version is being used in each study would strengthen the theoretical robustness and policy relevance of GPI.

In sum, while the GPI is not a perfect measure, many critiques can be addressed through methodological refinement, complementary indicators, and clearer theoretical framing. The move towards GPI 2.0, emphasising standardisation, transparency, and integration with other wellbeing and sustainability metrics, offers a way forward. Rather than abandoning GPI, these improvements can enhance its role as a policy tool for identifying when economic growth ceases to improve welfare and for guiding transitions towards sustainable and inclusive wellbeing.

Policy Applications of the Genuine Progress Indicator

Although the Genuine Progress Indicator (GPI) has attracted sustained academic interest, its uptake in policymaking remains uneven and often experimental. Nevertheless, GPI has been increasingly recognised as a practical tool to inform decisions, align policy with sustainable wellbeing, and reframe the growth narrative beyond GDP.

First, GPI enables policymakers to distinguish between economic activities that genuinely enhance welfare and those that generate costs masked as “progress” in GDP. For example, while GDP rises in the wake of environmental disasters or public health crises, GPI deducts the associated costs of pollution, crime, or resource depletion. By doing so, it provides a clearer basis for evaluating whether economic activity contributes to long-term prosperity (Bagstad and Shammin, 2012; Cobb *et al.*, 1995).

Second, GPI integrates economic, social, and ecological dimensions into a single monetary measure, making it more accessible for policy dialogue than dashboards of separate indicators. This aggregation allows policymakers to evaluate trade-offs among domains that are often siloed in government, such as natural resource management, inequality, and health, and to identify leverage points for interventions (Berik and Gaddis, 2011; Berik, 2020; Silberman and Nardi, 2019).

Third, GPI has proven useful in retrospective and prospective policy evaluation. For example, state-level applications in the United States (Maryland and Vermont) demonstrate how GPI can inform outcomes-based budgeting and legislative mandates for data collection (Erickson *et al.*, 2013; McGuire *et al.*, 2012). Even in cases where institutional support is weaker, civil society

and research organisations, such as the Colorado Fiscal Institute or the Utah Population and Environment Coalition, have used GPI to assess the distributional and environmental impacts of economic growth (Bagstad *et al.*, 2014). These cases illustrate how GPI can serve both formal and informal policy processes.

Fourth, GPI's structure allows for longitudinal and comparative analysis. By tracking trends across time, it signals when rising GDP no longer corresponds to improvements in welfare, a phenomenon observed in the United States since the late 1970s and in China since the mid-1990s (Kubiszewski *et al.*, 2013). Such divergences highlight the importance of policies aimed at equity, ecological integrity, and social capital rather than GDP growth alone.

Finally, international organisations have begun to recognise GPI's potential. Silberman and Nardi (2019) argue that institutions such as the International Labour Organization (ILO) and UN Statistics Division could play a catalytic role in standardising methodologies, facilitating data collection, and embedding GPI in international reporting systems. Doing so would enhance comparability across countries and increase policy relevance, building toward a more coherent "GPI 2.0" (Bagstad *et al.*, 2014).

In sum, while GPI's direct policy influence has so far been limited, its applications demonstrate significant potential. It can reorient policy debates toward sustainable and inclusive welfare, provide a more comprehensive accounting framework for public budgets, and support international efforts to redefine economic success beyond GDP. The challenge now lies in institutionalising GPI, ensuring methodological consistency, and embedding it within the policy machinery of governments and global governance structures.

GPI Balance Sheet

As shown in previous sections, the Genuine Progress Indicator (GPI) advances beyond earlier benchmarks by applying a "full-cost" accounting framework to economic growth. GPI assigns monetary value to flows of built, human, social, and natural capital, while accounting for their degradation or enhancement through economic activity. It adjusts GDP by incorporating the effects of income inequality on personal consumption, adding the value of unpaid but socially beneficial work such as volunteering, and subtracting "defensive" expenditures associated with crime, pollution, unemployment, or family breakdown. The result is a GPI net income statement that offers a more comprehensive account of economic activity and its effects on welfare.

Yet, as in corporate reporting, net income is only one component of a full financial report. Shareholders require both a balance sheet and a cash flow statement to understand an organisation's assets, liabilities, and long-term viability. By analogy, citizens, who act as stewards of a country's or region's common wealth, would benefit from a GPI-based balance sheet. Such a framework would capture the stocks of natural, human, social, and built capital, as well as accumulated liabilities such as degraded ecosystems, infrastructure maintenance, or the social costs of lost leisure time. A balance sheet signals whether governments are creating lasting wealth through investment in these capitals or eroding future welfare through depletion and neglect.

Consider forests. GPI currently accounts for the annual welfare costs of net forest cover loss, subtracting them from GDP as a defensive expenditure. A balance sheet approach would extend this logic by assessing the stock of forest capital, updating it annually with net gains or losses, and valuing it through the net present value of ecosystem goods and services, ranging from timber and recreation to water regulation, carbon sequestration, and biodiversity. Expenditures to restore or expand forest cover would be recorded as investments that enhance the value of the natural asset base. Without such stock-based accounting, it remains difficult to compare the long-term financial benefits of conservation versus depletion.

Developing a GPI balance sheet requires creating a chart of accounts that inventories assets and liabilities across all domains of capital. This is challenging, particularly for non-market assets with no established prices. However, pioneering work exists. The UK Office for National Statistics has released experimental estimates of human capital, while the UN's revised *System of Environmental-Economic Accounting (SEEA)* now provides a framework for valuing natural capital. Nova Scotia has committed to valuing natural, human, and social capital alongside financial and built assets, while Canada has integrated volunteerism and the non-profit sector into its national accounts as elements of social capital. The Pembina Institute has also developed a conceptual framework for Alberta that expands GPI accounting to capital stocks.

The prototype balance sheet outlined here remains preliminary, but it signals a frontier for GPI and related indicators. Ultimately, identifying and valuing a region's capital assets, its public goods, natural endowments, and accumulated common wealth, must reflect both technical methods and societal conceptions of wellbeing. By embarking on such accounting, governments can place themselves at the forefront of progressive public-sector practice, developing standardised methods to value intangible but essential assets such as civic engagement, health, and education. As corporations now routinely value patents, goodwill, and brand equity, so too must nations recognise and account for the true wealth that underpins sustainable quality of life.

Future Direction

The future of the Genuine Progress Indicator lies in improving its methodology, embedding it in policymaking, and strengthening its role within the family of beyond GDP measures. Several priorities stand out.

Improving comparability and data. Over the past few years, as a growing number of GPI studies have been performed globally, a divergence in methodologies has occurred. This lack of standardisation is due to variations in data availability, different policy

contexts, and the emergence of new issues such as the treatment of nonrenewable resources and government spending. To address these variations, an international effort has recently started to update the current methodology of the GPI with the most up-to-date science. The goal of such an update is to ensure greater comparability between studies and increased policy relevance (Bagstad *et al.*, 2014).

Integration with models. GDP has maintained dominance partly because it is central to economic forecasting models. Embedding GPI into macroeconomic and system-dynamics models would allow policymakers to test the effects of fiscal, social, and environmental policies on genuine welfare. Recent efforts in ecological macroeconomics and global modelling (Dixon-Declève *et al.*, 2022; Jackson and Victor, 2020) demonstrate the feasibility of using welfare-based indicators as policy objectives.

Linking to budgets and planning. New Zealand's Wellbeing Budget shows that fiscal priorities can be aligned with long-term outcomes. A logical next step is linking budget lines directly to GPI accounts, ensuring that expenditures are evaluated in terms of their contribution to net welfare rather than GDP growth alone. Planning agencies could also use GPI as a benchmark for evaluating trade-offs across sectors.

Scaling across levels of governance. GPI has proven valuable at national and state scales, but local and community applications remain rare, but important (Kubiszewski *et al.*, 2019). Expanding use at multiple scales would allow GPI to capture diverse priorities while maintaining consistency. Communities could adapt GPI components, such as housing, health, or local ecosystem services, while aligning with national accounts.

Institutionalisation in governance. The long-term influence of GPI depends on institutional uptake. Embedding GPI or GPI-inspired accounts into national statistical systems, and eventually into the UN's System of National Accounts, would give it similar authority to GDP.

In short, GPI's future lies in moving from solely a research tool to an institutionalised measure that adjusts GDP. By strengthening methods, embedding in models and budgets, and scaling adoption, GPI can help guide economies toward sustainable and inclusive welfare.

Conclusion

Achieving a sustainable and desirable future requires moving beyond the narrow focus on Gross Domestic Product (GDP) as the primary measure of progress. GDP, while useful in its historical context, has long outlived its role as a proxy for welfare. Continuing to pursue growth in GDP alone risks obscuring the environmental, social, and economic costs that undermine long-term prosperity. Instead, policy must shift toward improving genuine human wellbeing, as captured by more comprehensive measures such as the Genuine Progress Indicator (GPI).

The transition implies greater attention to environmental protection, full employment, equity, product quality and durability, and resource efficiency. These priorities are already being pursued in various countries and regions, demonstrating both their feasibility and their value. Indicators such as GPI are essential tools for guiding this shift: by distinguishing between activities that contribute to welfare and those that diminish it, they provide clearer signals to policymakers and citizens alike.

Ultimately, societies must begin to measure what they truly value if they are to achieve it. As the saying goes, *we get what we measure*. If we continue to measure progress by GDP, we will continue to prioritise production and consumption over wellbeing. By adopting and refining measures such as GPI, we can reorient policy and practice toward building sustainable, equitable, and flourishing societies.

References

- Anielski, M., 2001. The Alberta GPI Blueprint. Pembina Institute for Appropriate Development, Drayton Valley, Alberta.
- Bagstad, K.J., Berik, G., Gaddis, E.J.B., 2014. Methodological developments in US state-level Genuine Progress Indicators: Toward GPI 2.0. *Ecological Indicators* 45, 474–485.
- Bagstad, K.J., Ceroni, M., 2008. Opportunities and challenges in applying the Genuine Progress Indicator/Index of Sustainable Economic Welfare at local scales. *International Journal of Environment, Workplace and Employment* 3, 132–153.
- Bagstad, K.J., Shammin, M.R., 2012. Can the Genuine Progress Indicator better inform sustainable regional progress?—A case study for Northeast Ohio. *Ecological Indicators* 18, 330–341.
- Bartelmus, P., 2014. Environmental–economic accounting: Progress and digression in the SEEA Revisions. *Review of Income and Wealth* 60, 887–904.
- Beddoe, R., Costanza, R., Farley, J., Garza, E., Kent, J., Kubiszewski, I., Martinez, L., McCowen, T., Murphy, K., Myers, N., Ogden, Z., Stapleton, K., Woodward, J., 2009. Overcoming systemic roadblocks to sustainability: The evolutionary redesign of worldviews, institutions, and technologies. *Proceedings of the National Academy of Sciences of the United States of America* 106, 2483–2489.
- Berik, G., 2020. Measuring what matters and guiding policy: An evaluation of the Genuine Progress Indicator. *International Labour Review* 159, 71–94.
- Berik, G., Gaddis, E., 2011. The Utah Genuine Progress Indicator (GPI), 1990 to 2007: A Report to the People of Utah. Utah Population and Environment Coalition.
- Brennan, A.J., 2008. Theoretical foundations of sustainable economic welfare indicators — ISEW and political economy of the disembedded system. *Ecological Economics* 67, 1–19.
- Cobb, C., Halstead, T., Rowe, J., 1995. The genuine progress indicator: Summary of data and methodology. Redefining Progress, San Francisco.
- Costanza, R., 2008. Stewardship for a "Full" World. *Current History* 107, 30–35.
- Costanza, R., Kubiszewski, I., Giovannini, E., Lovins, H., McGlade, J., Pickett, K.E., Ragnarsdottir, K.V., Roberts, D., De Vogli, R., Wilkinson, R., 2014. Time to leave GDP behind. *Nature* 505, 283–285.

- Daly, H.E., 1992. From empty-world economics to full-world economics: Recognizing an historical turning point in economic development. In: *Population, Technology and Lifestyle*, 23–37.
- Daly, H.E., Cobb Jr., J.B., 1989. *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future*. Beacon Press, Boston.
- Dixon-Decière, S., Gaffney, O., Ghosh, J., Rander, J., Rockström, J., Stoknes, P.E., 2022. *Earth for all: A Survival Guide for Humanity*. New Society Publishers, Canada.
- Erickson, J.D., Zencey, E., Burke, M.J., Carlson, S., Zimmerman, Z., 2013. *Vermont Genuine Progress Indicator, 1960-2011: Findings and Recommendations*. Burlington, VT: Gund Institute for Ecological Economics.
- Fioramonti, L., 2017. *The World After GDP: Economics, Politics and International Relations in the Post-Growth Era*. Polity, Cambridge.
- Harris, M., 2007. On income, sustainability and the 'microfoundations' of the Genuine Progress Indicator. *International Journal of Environment, Workplace and Employment* 3, 119–131.
- Hein, L., Obst, C., Edens, B., Remme, R.P., 2015. Progress and challenges in the development of ecosystem accounting as a tool to analyse ecosystem capital. *Current Opinion in Environmental Sustainability* 14, 86–92.
- Jackson, T., McBride, N., 2005. *Measuring Progress? A Review of 'Adjusted' Measures of Economic Welfare in Europe* University of Surrey, Surrey.
- Jackson, T., Victor, P.A., 2020. The transition to a sustainable prosperity—a stock-flow-consistent ecological macroeconomic model for Canada. *Ecological Economics* 177, 106787.
- Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T., Aylmer, C., 2013. Beyond GDP: Measuring and achieving global genuine progress. *Ecological Economics* 93, 57–68.
- Kubiszewski, I., Zakariyya, N., Jarvis, D., 2019. Subjective wellbeing at different spatial scales for individuals satisfied and dissatisfied with life. *PeerJ* 7, e6502.
- Lawn, P.A., 2003. A theoretical foundation to support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and other related indexes. *Ecological Economics* 44, 105–118.
- Lawn, P.A., 2005. An assessment of the valuation methods used to calculate the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and Sustainable Net Benefit Index (SNBI). *Environment, Development and Sustainability* 7, 185–208.
- Lawn, P.A., 2008. Genuine progress in India: Some further growth needed in the immediate future but population stabilisation needed immediately. In: Lawn, P.A., Clarke, M. (Eds.), *Sustainable Welfare in the Asia-Pacific: Studies Using the Genuine Progress Indicator*. Edward Elgar Publishing, Cheltenham, UK, pp. 91–125.
- Leipert, C., 1989. National income and economic growth: The conceptual side of defensive expenditures. *Journal of Economic Issues* 23, 843–856.
- McGuire, S., Posner, S., Haake, H., 2012. Measuring prosperity: Maryland's Genuine Progress Indicator. *Solutions* 3, 50–58.
- Neumayer, E., 1999. The ISEW: Not an index of sustainable economic welfare. *Social Indicators Research* 48, 77–101.
- Neumayer, E., 2010. *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms*. Edward Elgar, Cheltenham.
- Nordhaus, W., Tobin, J., 1972. *Is Growth Obsolete?*, Economic Growth. Columbia University Press, New York.
- Pannozzo, L., Colman, R., 2009. *New Policy Directions for Nova Scotia: Using the Genuine Progress Index to Count What Matters*. Nova Scotia: GPI Atlantic.
- Silberman, M.S., Nardi, B., 2019. Exploring Potential Policy Uses of the Genuine Progress Indicator, 6th Regulating for Decent Work Conference. Geneva: International Labour Organization.
- Stiglitz, J., 2020. *Conquering the Great Divide*. Washington DC, International Monetary Fund.
- Stockhammer, E., Hochreiter, H., Obermayr, B., Steiner, K., 1997. The index of sustainable economic welfare (ISEW) as an alternative to GDP in measuring economic welfare. The results of the Austrian (revised) ISEW calculation 1955-1992. *Ecological Economics* 21, 19–34.
- Talberth, J., Cobb, C., Slattery, N., 2007. *The Genuine Progress Indicator 2006: A tool for sustainable development*. Redefining Progress, Oakland, CA.
- Van der Slycken, J., Bleys, B., 2023. Towards ISEW and GPI 2.0: Dealing with cross-time and cross-boundary issues in a case study for Belgium. *Social Indicators Research* 168, 557–583.
- Vemuri, A.W., 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, 119–133.
- Wen, Z., Yang, Y., Lawn, P.A., 2008. From GDP to GPI: Quantifying thirty-five years of development in China. In: Lawn, P.A., Clarke, M. (Eds.), *Sustainable Welfare in the Asia-Pacific: Studies Using the Genuine Progress Indicator*. Edward Elgar Publishing, Cheltenham, UK, pp. 228–259.
- Wilkinson, R., Pickett, K., 2010. *The Spirit Level: Why Equality is Better for Everyone*. Penguin, UK.