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**Economic Models and Sustainability in the Time
of Polycrisis: The EU's Approach**

(Working Paper)

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Abstract:

The current era is characterised by multiple parallel crises, referred to as the polycrisis, including climate change, the COVID-19 pandemic, the energy crisis, wars, and growing inequality.

This paper focusses on the need for systemic change in the context of the current polycrisis. It analyses different economic models and their ability to achieve long-term sustainability. Particular attention is paid to the European Union's ability to realise its ambitious goals under the Green Deal within the current economic model. Other alternative models are also explored. The analysis will compare the classical economic model with the green economy and models of ecological economics, such as degrowth and doughnut economics. The ecosocialist economic model will also be considered.

Selected sustainability indicators are used as tools to assess the relationship between the economic model and sustainability and their ability to replace the criticised economic growth indicator. Gross domestic product (GDP) has been criticised for its limited ability to measure real sustainability and quality of life. Alternative indicators will be presented and examined, including the Sustainable Development Goals Index (SDG), the Human Development Index (HDI), the Ecological Footprint (EF), and Genuine Progress Indicators (GPI and ISEW).

The purpose of this paper is to examine the concept of sustainability in the context of current global challenges. By analysing the relationship of economic models to sustainability and assessing the potential of selected sustainability indicators as alternatives to GDP, this work aims to better reflect true sustainability and contribute to more effective responses to current crises.

Keywords: polycrisis, sustainability, European Green Deal, economic models, sustainability indicators, GDP, climate change, sustainable development

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1. Introduction

1.1 Polycrisis and sustainability

Today's world faces a series of interconnected crises, collectively referred to as a polycrisis, including climate change, the COVID-19 pandemic, energy crises, armed conflicts, and growing inequalities. The concept of sustainability, originally developed as a response to past crises, is now applied to these contemporary challenges. Various economic models approach sustainability differently, particularly with regard to their stance on economic growth (or degrowth). The main models include classical economics, green capitalism, ecological economics, and ecosocialism, which differ in their perceptions of environmental limits, wealth distribution, and the role of government.

The success of these models in achieving sustainability goals is evaluated using various indicators. Gross domestic product (GDP), traditionally used as the primary measure of economic success, is inadequate to assess sustainability because it does not include its three dimensions: social, economic, and environmental. However, GDP serves as a starting point for the search for alternative indicators. Traditional growth-orientated economic models, measured by GDP, fail to adequately address global challenges or ensure sustainability. Therefore, an indicator that can complement or replace GDP is needed to allow a better assessment of social progress and an effective response to polycrisis. This work focusses on exploring the potential of such an indicator and its significance in effective management of current crises.

1.2 Contemporary economic models

To assess approach to sustainability, reference can be made to the economic models described by Costanza et al. (2013) in their report for the Rio+20 conference, which can be further extended to include the model of democratic ecosocialism. Below are the brief characteristics of these economic models.

- a) **Classical capitalist economics** emphasises economic growth as the solution to most problems with the belief that market forces and technological development will overcome environmental limitations. The foundation is privatisation of assets and minimal government intervention, with the assumption that wealth will naturally "trickle down" from the upper classes to the lower ones. The primary indicator of success is GDP.
- b) **Green economics (or green capitalism)** seeks to decouple economic growth from environmental impacts and emphasises the need for government interventions to internalise environmental costs. This model recognises the connection between economic growth and natural capital and aims at a greener and more equitable distribution of resources, using GDP supplemented by specific indicators that monitor environmental conditions.
- c) **Ecological economics** shifts the paradigm further towards sustainability, focussing on achieving truly sustainable well-being with respect for natural limits. The main indicators are sustainable welfare indexes, such as the Index of Sustainable Economic Welfare (ISEW) and the Genuine Progress Indicator (GPI), or similar metrics that reflect true socio-ecological well-being.

- d) **Democratic ecosocialism** prioritises according to, for example, Hickel (2023) social justice and ecological sustainability, emphasising equality and democratic participation. The economy is seen as a tool to achieve socio-ecological balance rather than merely a means of wealth production, and the government plays a key role. The focus is on meeting human needs and ecological goals, which implies a commitment to improvement, although without specific indicators.

Each of these models addresses economic, social, and environmental challenges differently. While classical and green economics continue to focus on growth, ecological economics and democratic ecosocialism seek ways to better respect ecological limits and social justice. Within ecological economics, one can include approaches such as degrowth (D'Alisa et al., 2014) and doughnut economics (Raworth, 2017), among others. Noteworthy in ecosocialism is the recent work of Japanese eco-marxist Kohei Saito (2023, 2024), which explores a degrowth version of ecosocialism.

In the European Union (EU), various economic models are applied that reflect the needs of member states and integrate into the broader framework of green capitalism. Historically significant models such as Germany's social market economy and the Nordic model in Scandinavia combine free-market principles with active state intervention, emphasising social justice and sustainable growth (Berghahn & Vitols, 2006; Kautto et al., 2001).

The influence of neoliberalism on the current EU economic model, which dominated the late twentieth century, cannot be overlooked. Neoliberalism promoted deregulation, privatisation, fiscal consolidation, and free trade as tools to improve competitiveness and efficiency. Austerity policies in most member states reduced public spending but led to a deterioration in the quality of public services and increased costs, impacting inequality and sustainability. For a deeper understanding of neoliberalism's influence in the EU, sources such as Blyth (2013), Davies (2017), and Jones (2014) are recommended.

In former socialist countries, including East Germany, a command (or direct) economy based on central planning, state ownership, and minimal competition was in place. After 1989, these countries rapidly transitioned to neoliberal market economies, involving massive privatisation and deregulation. This shift caused an increase in the social inequalities that persist today. The EU has attempted to mitigate these impacts through structural funds, yet regional disparities remain significant (Shields, 2012; Jacoby, 2010).

1.3 The concept of sustainable development

The concept of sustainable development emerged in response to the existential crises of the modern world, including climate change, inequality, and democracy, which are considered the main challenges of our time (Stiglitz, Fitoussi, & Durand, 2019). In 1987, the Brundtland Commission defined sustainability as the ability to “*meet the needs of the present without compromising the ability of future generations to meet their own needs*” (WCED, 1987, p. 41). This definition emphasises the principles of intergenerational equity and fair distribution of resources, which are crucial to maintaining the quality of life on Earth. The development of this concept of sustainability was further deepened at United Nations conferences on environment and development: in Rio de Janeiro in 1992, in Johannesburg in 2002, and the Rio+20 conference in 2012 (UNCED, 1992; United Nations, 2002; United Nations, 2012).

These meetings produced key documents and commitments that have shaped international

policy on sustainable development. In 1992, the Rio de Janeiro conference adopted Agenda 21 (United Nations, 1992). In 2000, the Millennium Development Goals (MDGs) were established for the period up to 2015, consisting of eight specific, measurable goals aimed at eradicating poverty, improving education, healthcare, gender equality, and environmental sustainability (United Nations, 2015a). These goals represented the first global effort to establish concrete targets and indicators to measure progress in sustainable development. Significant progress was made in some areas, leading to the creation of the Sustainable Development Goals (SDGs), adopted in New York in 2015 (United Nations, 2015b). These goals are planned to be achieved by 2030 and provide a more comprehensive framework to address global challenges.

Unlike the MDGs, which focused primarily on developing countries, the SDGs emphasise the global responsibility of all nations, including developed ones. Since the adoption of these goals, the concept of sustainability has become an integral part of the global discourse, raising a crucial question. How do current economic models implement these principles of sustainability?

1.4 Sustainability goals and the European Union

The European Union has adopted the SDGs as part of its commitment to sustainable development and has integrated them into its strategies and policies. In 2016, the European Commission committed to fully implementing Agenda 2030, which is reflected in the document *"Next Steps for a Sustainable European Future"* (European Commission, 2016). This document outlines specific measures to incorporate the SDGs into EU policies in areas such as economic growth, environmental protection, and social inclusion (European Commission, 2016). Another key strategic document is the European Green Deal, introduced in 2019, which aims to achieve climate neutrality in Europe by 2050. It includes measures to reduce emissions, support renewable energy sources, and protect biodiversity (European Commission, 2019).

Eurostat, the European Union statistical office, regularly publishes reports on the progress of member states in achieving the SDGs. These reports evaluate progress based on specific indicators and help identify areas where improvement is needed (Eurostat, 2023).

The EU provides financial support through various funds and programmes aimed at implementing sustainable development. These include the European Regional Development Fund (ERDF), which supports innovation, digitalisation, and the transition to a green economy (European Commission, 2021a), the European Social Fund (ESF), which focusses on improving access to the labour market, social inclusion, and education (European Commission, 2021b), and the Cohesion Fund, which finances projects related to infrastructure and environmental protection in less developed member states (European Commission, 2021c).

1.5 The search for a new ‘magic number’ for sustainability

This paper explores the possibilities of integrating existing sustainability indicators into a single aggregated metric that could provide a more effective assessment of the relationship between economic models and sustainability. This metric would improve understanding and communication about sustainable development at both the global and local levels. The goal is to identify a single-number index that is comprehensible to both experts and the general public and that can be applied at different levels of governance.

For this purpose, it is necessary to determine whether indicators that could serve as alternatives to GDP cover all three dimensions of sustainability. The assessment focusses on the following indicators: the Sustainable Development Goals Index (SDG Index), the Human Development Index (HDI), the Ecological Footprint (EF), the Index of Sustainable Economic Welfare (ISEW) and the Genuine Progress Indicator (GPI), whose characteristics are detailed in Chapter 2.2.

Subsequently, the analysis will explore whether any of these indicators can integrate all dimensions of sustainability, or whether it is possible to create a new composite indicator that would combine the results of these metrics into a single evaluative number. This indicator should also allow sustainability at the global, national, and regional levels, ensuring an effective evaluation of relationships and impacts at these levels. Additionally, the paper will assess whether implementing such an indicator could facilitate policymakers' and the public's understanding of the impacts of economic policies, thereby supporting more responsible decision-making in the field of sustainable development, while improving awareness and engagement of various stakeholders in policy planning and evaluation.

2. Analysis

2.1 GDP and economic growth models

Gross domestic product (GDP) is one of the most influential indicators in modern economics, measuring the value of all goods and services produced within a specific period and region. Its foundations were laid in the 17th century by William Petty and further developed by Simon Kuznets in the 20th century. After World War II, GDP became the global benchmark for measuring national prosperity. (Lepenies & Gaines, 2016)

Although GDP provides valuable insight into economic growth, it has significant limitations, particularly in relation to sustainability. GDP overlooks a wide range of unpaid activities, such as childcare, domestic work, and volunteer work, which contribute significantly to social well-being (Stiglitz, Sen, & Fitoussi, 2009). Focusses primarily on material consumption and inadequately accounts for the value of natural resources and ecosystems, which provide crucial ecological services (Kubiszewski et al., 2013). Paradoxically, activities such as deforestation or repairing damage from natural disasters can lead to an increase in GDP while ignoring ecological damage, which contradicts the logic of sustainable development (Jackson, 2009). Further critiques of GDP can be found in sources such as Dickinson (2011), Costanza (2014, 2016b), and Fioramonti (2013).

Despite these shortcomings, GDP remains the primary indicator of prosperity in the classical economic model and the green capitalism model, due to its focus on economic growth. According to the United Nations Environment Programme (UNEP, 2011), the green economy seeks to improve human well-being and social equity while reducing environmental risks. A key element of this approach is to optimise resource use and reduce dependence on unsustainable materials and processes. Green growth is closely related to the concepts of circular economy and bioeconomy (D'Amato & Korhonen, 2021), which emphasise the reuse of resources and the sustainable use of biological materials. This approach is crucial for achieving the so-called '*decoupling*', which separates economic growth from the consumption of natural resources. In the European Union, these principles are incorporated into the

sustainability strategy and the Green Deal (European Commission, 2016, 2019).

Measuring the success of the green economy requires more than just the traditional GDP indicator. The Eurostat database (Eurostat, 2023) provides additional indicators that better reflect economic performance within ecological limits, such as air and water quality, biodiversity, and social equity, allowing a broader assessment of the impacts of economic activities. Another important area includes indicators of the circular economy and bioeconomy, which monitor resource efficiency and waste reduction, tracking the achievement of recycling and renewable resource utilisation goals.

Despite efforts to complement GDP with additional indicators, GDP remains the primary measure in the green economy model. As a result, there is an ongoing demand for new economic models and indicators that more accurately reflect sustainable development and social progress.

2.2 Sustainability indicators in the form of indexes

The sustainability index indicators serve as comprehensive tools to evaluate various aspects of sustainable development. Aligned with the Sustainable Development Goals (SDGs) of the UN, which emphasise effective monitoring, these indicators track progress and provide information on the performance of countries or regions in their pursuit of sustainability. An example is the SDG Index (see Section 2.3), which consolidates data from multiple SDGs into a single, understandable figure.

These indicators offer quantitative evidence of progress and serve as tools for informed decision making by governments and international organisations. By summarising complex information into a single comprehensible number, they facilitate easy comparison between countries and regions, providing a foundation for political and economic analyses.

The following sections (2.3 to 2.6) will discuss these sustainability index indicators:

- SDG Index
- Human Development Index (HDI)
- Ecological Footprint (EF)
- The Index of Sustainable Economic Welfare (ISEW)
- The Genuine Progress Indicator (GPI)

Although sustainability index indicators provide valuable information, they also have limitations. Measurements may overlook local contexts and specificities, potentially leading to misinterpretations. Additionally, aggregating diverse data into a single index can oversimplify complex issues, possibly resulting in the neglect of important aspects of each sustainability dimension.

However, in the effort to develop a new "*magic number*" similar to GDP, which better captures the dimensions of sustainability, it is essential to build upon the indicators currently available. Despite their limitations, these indicators offer a broader view of the economic, social, and environmental domains, which is crucial for the comprehensive measurement of sustainable development. By integrating these metrics into a single, understandable index, a tool could be

created that better reflects true prosperity than traditional GDP.

2.3 Monitoring Sustainable Development Goals using the SDG Index

To monitor the Sustainable Development Goals (SDGs), the United Nations developed a set of indicators that cover all aspects of sustainable development. The SDGs, valid from 2016 to 2030, encompass 17 goals, 169 targets, and 231 indicators applicable to all countries, forming part of the 2030 Agenda (United Nations, 2015b).

The SDG Index is a single numerical indicator composed of the 17 goals and their respective targets. Calculating the SDG Index involves adjusting the values of individual indicators using the min-max method. These values are then normalised and converted to a scale from 0 to 100 by linear transformation. Data are first aggregated within each SDG goal and then across all SDGs. The final index value, ranging from 0 to 100 could be determined using the arithmetic mean (Lafortune et al., 2018).

The SDG Index is presented in reports (Sachs et al., 2024), providing an overview of the best and worst performing countries in achieving the SDGs. According to the latest analysis, Finland (86.4), Sweden (85.7), and Denmark (85.0) are among the top performers, while countries in equatorial Africa, such as South Sudan (40.1), the Central African Republic (44.2), and Chad (45.1), face significant challenges in meeting these goals. The report also provides a global overview of the state of the achievement and the factors that influence its progress. For example, it highlights that although progress toward the SDGs was steady before the COVID-19 pandemic, the pandemic slowed growth, necessitating accelerated efforts to meet the goals by 2030.

Regional reports, such as the European Sustainable Development Report 2024 (Lafortune et al., 2024), the United States Sustainable Development Report 2021 (Lynch & Sachs, 2021), the Africa SDG Index and Dashboards Report (2020) and the SDG Index for Latin America and the Caribbean (CODS, 2020), follow the global reporting framework. At lower regional levels, data availability is limited and comes mainly in the form of case studies, such as the European SDG Index for cities (Lafortune et al., 2019) or regional case studies from China (Xu et al., 2020) and Romania (Benedek et al., 2021).

The SDG Index plays a crucial role in providing clear and applicable data on the progress toward sustainable development goals. Its benefits include the ability to compare countries, a clear methodology (Lafortune et al., 2018), regular updates, availability on SDG Dashboards, and straightforward interpretation through a scale of 0 to 100. However, there are challenges, including data gaps for some countries or regions, incomplete or outdated data for certain indicators, which can distort results. Additionally, the index consists of a large number of sub-indicators, which may obscure nuances and delay the reflection of recent developments, where improvements in one goal may be offset by declines in another, complicating the overall picture.

In conclusion, the SDG Index is a key tool for monitoring progress toward sustainable development goals. Despite the challenges and limitations related to data availability, it remains a vital resource for policy makers and analysts. Continuous improvements in data collection and the development of methodologies to transfer the use of the SDG Index to lower regional levels could lead to more precise monitoring and effective responses at global, national, and regional levels.

2.4 The Human Development Index as a measure of quality of life

The Human Development Index (HDI) was introduced by the United Nations Development Programme (UNDP, n.d.) and has been calculated and published annually since 1990. The conceptual foundations of the HDI were laid by Pakistani economist Mahbub ul Haq and Indian economist and philosopher Amartya Sen. HDI serves as a comprehensive measure of human well-being, drawing data from three key areas:

- Health: Represented by life expectancy at birth.
- Education: Initially based on adult literacy rates, later revised to include a combination of the average years of schooling and expected years of schooling.
- Income: Originally using GDP per capita, it gradually shifted to Gross National Income (GNI) per capita for a more comprehensive perspective.

Calculating HDI, according to the 2019 UNDP methodology, involves setting minimum and maximum values and then transforming these into indices between 0 and 1. A special focus is given to the education index, where the arithmetic mean of two sub-indicators (expected years of schooling and mean years of schooling) is used. Initially, the HDI was aggregated as the arithmetic mean of the three main indices (health, education, income), but since 2010, a geometric mean has been used.

Human Development Reports have been published annually since 1990. Rather than relying solely on economic growth and income as indicators of development, the HDI offers a composite index of human capabilities, allowing comparisons of quality of life across different countries. In the most recent evaluation (UNDP, 2024), Switzerland (0.967), Norway (0.966) and Iceland (0.959) ranked among the top countries in HDI. In contrast, the Central African Republic (0.387), South Sudan (0.381), and Somalia (0.380) were among the lowest-ranked countries. HDI has also highlighted the slowdown in its growth rate due to the pandemic.

In the EU, the Regional Human Development Index (EU RHDR) was developed in 2014 by the European Commission's Joint Research Centre (Hardeman & Dijkstra, 2014). This index adapts the global HDI to the regional level, covering three key dimensions and six indicators: health (life expectancy at birth, child mortality rate), education (NEET rate, tertiary education) and income (net disposable household income, employment rate). The calculation methodology, as in the UN HDI, uses the Min-Max method for normalisation, with an arithmetic mean calculated for each dimension and the final value derived as the geometric mean of these three dimensions. Data for this index are available in the Eurostat database (n.d.). The advantage of the regional HDI lies in its targeted focus on the regional level (NUTS 2 regions), making it useful for EU cohesion policy. However, despite its relevance, this index is not widely known.

Nevertheless, the HDI faces criticism, such as, for example, from Neumayer (2001) and Hickel (2020), for its lack of an environmental dimension and for being overly simplistic, which may not fully capture the complexity of human development. There is potential in the future to expand HDI to include additional social aspects (UNDP, 2024) that would better reflect standards of living, poverty, gender equality, and income inequality. For the environmental dimension, linking with the Human Climate Horizons (HCH, n.d.) platform appears to be a promising approach.

In conclusion, the Human Development Index (HDI) is a proven indicator with a clear methodology, widely recognised and used at both global and regional levels. With a long-standing history since 1990, the HDI provides comparable data across countries and allows for straightforward interpretation of progress on a scale from 0 to 1. It is well positioned for potential expansion to include an environmental dimension.

2.5 Incorporating the environmental dimension through the Ecological Footprint

The Ecological Footprint (EF) was introduced in the 1990s (Rees, 1992) and became the first indicator within the footprint family indicators (e.g., carbon footprint, water footprint, land footprint, material footprint) (Rees & Wackernagel, 1996). This indicator measures the impact of human activities on the environment, society, and the economy. The primary components of the ecological footprint are carbon emissions and agricultural land use, both of which contribute to increasing pressure on natural resources and pushing the boundaries of sustainability.

According to the Global Footprint Network (GFN, 2023), the Ecological Footprint (EF) calculates the planet's biological capacity by quantifying the areas of biologically productive land and marine regions required to regenerate the resources consumed by human activities and absorb waste. A key part of the ecological footprint is the quantification of biocapacity. Both indicators, EF and biocapacity, are expressed in global hectares (gha).

In GFN (2023) are also identified significant regional differences in ecological footprint and biocapacity per capita at the global level. North America and western Europe exhibit excessive resource use, whereas developing countries in Africa and South Asia have much lower ecological footprints. Canada and some parts of South America and Asia have higher biocapacity, whereas most developing countries show lower biocapacity, limiting their ability to maintain ecological balance in the long term.

The Ecological Footprint offers a straightforward measure of ecological demands versus the planet's capacity expressed in global hectares. However, it does not account for social and economic factors, which are essential for a more complete understanding of sustainable human development.

2.6 ISEW and GPI as sustainable alternatives to GDP

There are various alternative indicators that aim to better capture aspects of sustainable development and quality of life, addressing the shortcomings of GDP. Among the most significant are the Index of Sustainable Economic Welfare (ISEW) and the Genuine Progress Indicator (GPI). Basic information on these indicators can be found in Goossens et al. (2007). It is also worth mentioning the first indicator of this type, developed by Nordhaus and Tobin in the 1970s in the USA, called the Measure of Economic Welfare (MEW), which included adjustments for factors like leisure time, unpaid work, and inequality. MEW served as a historical foundation for ISEW and GPI.

The Genuine Progress Indicator (GPI), created by Clifford Cobb and colleagues (Cobb et al., 1995), expands on the ISEW concept and includes 26 indicators (depending on the version) categorised into social, economic, and environmental dimensions. GPI factors in elements such as crime, divorce, unemployment, household work, pollution, family breakdown, and other environmental and social aspects. Overall, GPI provides a more comprehensive and realistic

picture of quality of life and sustainability than GDP (Goossens et al., 2007; Berik, 2020).

When comparing real GDP per capita with indicators such as ISEW and GPI, differences emerge. While GDP generally shows steady growth, ISEW and GPI are designed to account for social and environmental costs, leading to a different trend. Numerous case studies of ISEW/GPI exist, primarily at the national level (e.g., in the USA, Belgium, Spain, China, etc.), but also at the regional level (as illustrated by the Finnish example below). Here are some selected examples from practice:

- In the USA, between 1950 and 2004, GDP per capita increased from \$11,672 to \$36,596, representing an average annual growth of 3.81%. In contrast, GPI per capita remained around \$15,000 and grew much more slowly, averaging only 1.33% per year (Talberth et al., 2007).
- In Belgium, ISEW was adjusted to reflect different views on environmental costs, which led to two versions of the indicator with different results. A discrepancy was also found between GDP growth and actual welfare when environmental costs were considered (Van der Slycken & Bleys, 2023).
- In Spain, between 1970 and 1985, ISEW per capita also trended below GDP. GDP peaked in the early 1970s and then stagnated. After joining the EU in 1986, GDP sharply increased, while ISEW gradually grew until 1999. During the 2008 economic recession, GDP significantly declined, while ISEW decreased only slightly (O'Mahony et al., 2018).
- In Finland, there is an interesting example of the application of ISEW/GPI at both national and regional levels. The study shows GDP growth after the 1990s recession, while GPI and ISEW stagnated. Regional analyses revealed significant differences between various parts of Finland (according to the EU NUTS2 nomenclature), highlighting diverse links to environmental and social conditions (The Finnish GPI, 2012).

These comparisons show that while GDP may show stable growth, indicators like ISEW and GPI reveal a broader picture that includes not only economic performance, but also social and environmental costs. These alternative indicators provide a more realistic view of actual welfare and sustainable development, demonstrating that GDP growth does not account for social and environmental costs.

An advantage of GPI, unlike GDP, is that it directly measures well-being by accounting for both market and nonmarket benefits. GPI includes the costs of economic activity and supports sustainable development. However, a disadvantage is that various studies often employ different methods for applying GPI, leading to methodological inconsistencies in results and interpretations (Talberth & Weisdorf, 2017).

The inconsistency in the GPI methodologies led to two summits in Maryland (2012, 2013), which led to the formation of a working group that began developing GPI 2.0. The goal was to update the 1989 methodology in light of current experiences, including those from Maryland, where an attempt was made to use GPI at the state government level (Maryland Department of Natural Resources, 2023).

ISEW and especially GPI have the potential to replace GDP, but this requires a standardised methodology for global application. Case studies confirm its applicability at all levels: global, national, and regional.

3. Discussion

3.1 Can alternative indicators replace GDP?

The question of whether alternative indicators in the form of indexes can replace GDP as the primary measure of development and well-being depends on their ability to capture the complex dimensions of sustainability and quality of life. For a new indicator to successfully assume this role and become the next '*magic number*' like GDP, it must meet several key criteria. In addition to being multidimensional, it must be hierarchically applicable across various levels of governance, from global and national to regional, and be understandable to both experts and the public. This widespread comprehensibility is crucial to gaining public support and for the indicator an effective tool in communicating policies and their outcomes, which is essential for informed political decision-making.

A standardised methodology is also critical to ensure consistent calculations and enable comparisons between countries and regions. Reliability, data availability, and regular updates are essential for relevant analysis. Additionally, it is important to strike a balance between the complexity and simplicity of the indicator as a single-number index, ensuring that it is both practically usable and sufficiently informative. This balance is crucial for its long-term adoption and effective use in practice.

Potential candidates for replacing GDP meet the criteria of multidimensionality, comprehensibility, and applicability to varying degrees. Here is a summary of their characteristics:

- **SDG Index:** It represents the concept of sustainability, based on the UN SDGs, covering a wide range of development areas. However, its complexity and lack of data for some regions make it difficult to apply more widely. Its high level of acceptance is supported by its association with the UN.
- **HDI:** A simple and easily understandable indicator with regularly collected global data. Its methodology is well established and applicable even at the regional level (see EU RHDI). However, it focusses on health, education, and income, lacking an environmental dimension.
- **EF:** Provides a clear view of environmental impacts and is widely recognised in environmental communities. However, it does not capture the complex socio-economic dimensions.
- **GPI/ISEW:** Offers a more comprehensive view of well-being than GDP by incorporating a broader set of factors that GDP overlooks. However, inconsistent methodologies do not allow its use as a global framework, and it has not achieved the level of acceptance that HDI or GDP have. The GPI is still in development and has the potential for broader adoption.

In summary, while each of these indicators offers a different approach to measuring sustainable development and well-being, none currently combine the simplicity, comprehensibility, and global acceptance necessary to replace GDP as a universal "*magic number*." The challenge, therefore, is to develop an indicator that combines sustainable multidimensionality, hierarchical applicability, comprehensibility, and a standardized methodology, making it practically usable at all levels.

3.2 Is there a way beyond GDP towards a new universal indicator?

Since there is currently no simple replacement for GDP that comprehensively reflects all relevant aspects of development, it is essential to focus on transforming and integrating existing indicators that offer a broader view of sustainability, adapting them so that they can fully replace GDP. Key steps include expanding and linking databases, integrating various dimensions of human and environmental development, standardising methodologies, and improving international cooperation.

The following approaches represent pathways to transform existing indicators, enabling them to provide a more comprehensive and relevant perspective on progress, which is essential for sustainability in the 21st century:

1. **Completion of the SDG database:** The Sustainable Development Goals (SDGs) of the United Nations represent a universal set of goals that cover various aspects of development (economic, social, and environmental). Completing and improving the SDG database would provide a robust platform for measuring progress in these areas using the SDG Index. This would facilitate better tracking and evaluation of progress toward sustainable development.
2. **Integration of HDI and EF:** Their combination could offer a comprehensive view of progress by considering both human prosperity and environmental impacts. Merging these two indicators would provide a more balanced assessment of sustainable development.
3. **Standardisation of GPI and ISEW methodologies:** These indicators assess the well-being of a country or region well-being by considering a range of factors that GDP does not include. A unified methodology would simplify the comparison of results across regions and countries and facilitate a greater application of this indicator. Standardising the GPI would also ease its adoption as a globally recognised measure.
4. **Hierarchy and international cooperation:** Ensuring the effectiveness and relevance of an indicator requires its usability and comparability at various levels – global, national, and regional. This demands coordination and collaboration among countries and international organisations involved in the development and implementation of these indicators.

The primary focus should be on finding a balance between the complexity of the indicator, capturing as many relevant aspects as possible, and its comprehensibility, ensuring that it remains practical and easily understandable.

4. Conclusion

4.1 Economic models and the path to sustainability

Economic models differ not only in the goals they pursue but also in their approaches to achieving sustainability. Traditional growth-orientated models focus on maximising production and consumption, considering environmental and social aspects only when they contribute to long-term economic stability. This approach assumes that economic growth automatically leads to an improved quality of life, even though it often overlooks externalities such as pollution or growing inequalities.

However, models that advocate sustainability emphasise the importance of respecting ecological limits and promoting social justice as fundamental pillars of long-term development. Ecological economics (eg, degrowth) and ecosocialism agree that the economy should serve as a tool to improve well-being, not as an end in itself. These approaches focus on preserving biodiversity, ensuring the sustainable use of resources, and fairly distributing wealth.

Given the significant impact of global crises on current systems, it is essential to integrate solutions to these challenges into the objectives and long-term strategies of economic models. Transparent and consistent monitoring tools play a crucial role in providing a foundation for informed political decisions and progress evaluation. However, success depends on democratic participation and public trust. Clear and understandable indicators are essential to secure a broad understanding and support for these strategies. Lack of transparency can lead to distrust and resistance to necessary changes. Proper monitoring tools can help mitigate these risks.

This work emphasises the importance of index-based monitoring indicators that support a coherent and informed approach to addressing current global challenges. Relevant and transparent data are crucial not only for effective political decisions but also for involving the broader public in democratic decision making. A structured approach to monitoring, which evaluates economic models based on sustainability principles, may be the key to effectively managing global crises. Clear and comprehensible indicators enable people to better understand how different models achieve sustainability goals, allowing them to choose the approach that best addresses their needs. In this way, the public becomes an active participant in decision-making, contributing to the creation of a more sustainable future.

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