



Amaia Palencia-Esteban

Pedro Salas-Rojo

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## Social scientists: if you care about climate change, then account for it

*GDP, the most widely-used economic aggregate, ignores environmental and social concerns. But there are well-grounded alternatives accounting for these and other dimensions of human and planetary wellbeing, write Amaia Palencia-Esteban and Pedro Salas-Rojo. If we care about these concerns, it is about time to account for them properly in our day-to-day toolkit.*

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Socioeconomic reality is complex. Modern societies are formed by millions of people working across a wide range of production sectors and consuming resources in diverse ways. For decades, social scientists – economists especially – have sought to develop metrics aimed at summarising these dynamics. This enables comparisons across regions or societies, allowing us to say whether one economy is “better off” than another; it also allows us to track a region over time, helping us determining whether its performance is improving or declining.

By far the most utilised of these metrics is Gross Domestic Product (GDP), which denotes the total value of all goods and services produced within a region over a given time period. GDP is often used as an approximation of economic success – and higher levels of GDP per capita do strongly correlate with longer life expectancy, better educational outcomes, and other social indicators that most scholars deem positive.

It is also widely recognised, however, that **GDP has severe limitations**. It takes no account of the informal **caring economy** – the unpaid work of taking care of children and elder relatives (largely undertaken by women) which would otherwise require market-based services and hence contribute to GDP. It takes no account of inequalities, capturing only the total value of production across the economy as a whole. And it takes no account of the environmental impact of economic production, nor the civil rights conditions of the labour generating it. As long as some good or service is produced, GDP offers no insights into whether it was made through forced labour, at the expense of an ethnic minority, or by burning tonnes of coal.

## Widening the lens: broader metrics of human and planetary development

Because of these limitations, social scientists have developed a myriad of “**composite indicators**” to gather different dimensions.

The most popular composite indicator is the United Nations’ **Human Development Index** (HDI), developed to “emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country”. The HDI scale ranges from 0 (no human development) to 1 (full human development) by averaging across three dimensions: Gross National Income per capita, quantitatively very similar to GDP and hence capturing the production/affluence aspect; average years of schooling; and life expectancy. This approach means that if a country systematically excludes certain ethnic or gender groups from basic rights in education and healthcare, for instance, then this will be reflected in a lower HDI score regardless of income levels.

Still, the HDI in its original design is indifferent to environmental matters. For this reason, the UN developed the **Planetary Pressures-Adjusted HDI** (PHDI), which accounts for the environmental footprint – tonnes of CO2 emissions and material waste – per capita accruing from human activity within the target region, and adds this to the other dimensions of the HDI.

This adjustment dramatically affects country rankings when it comes to socioeconomic performance. For example, **according to World Bank data**, in 2023 Spain and Kuwait had similar GDP per capita figures, Kuwait’s slightly higher (\$50,824 per capita compared to \$46,356 per capita in Spain). Looking at HDI, this ordering is reversed, with Spain scoring 0.91 compared to Kuwait’s score of 0.85. But looking at PHDI, while Spain’s score drops to 0.84, Kuwait’s falls all the way to 0.58.

In our **recent report** as part of the **Sustainability Performances, Evidence and Scenarios Project**, we analyse the PHDI (as well as several other composite indicators) for European Union countries. As shown in Figure 1, the standard HDI indicates an excellent performance across Europe, with Nordic and Central European countries scoring above 0.92 and ranking among the most developed in the world. But when the human ecological footprint is factored in, the country ranks shift substantially. Under the PHDI, countries like Italy (0.81) or Portugal (0.78) rank among the better performing, while Luxembourg (0.62) and Ireland (0.68) receive poorer scores.



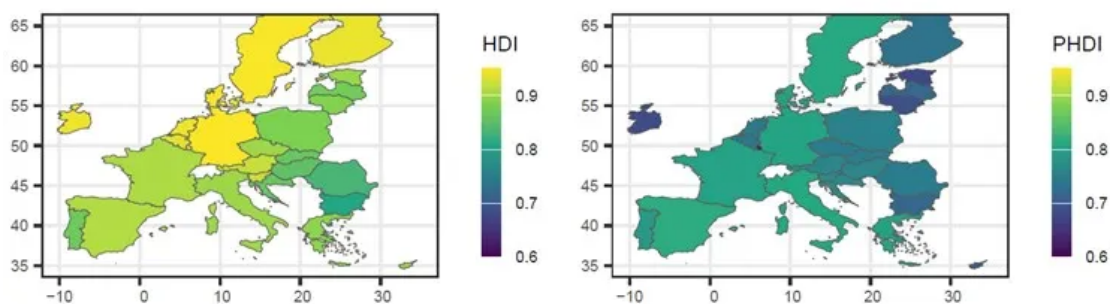
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In general, Nordic and Central European economies appear to have a much higher carbon footprint, likely due to the polluting effects of burning fossil fuels during winter months for heating reasons – a reality hidden by the original HDI figure. We believe that reflecting this aspect into aggregate measures is a precise and practical way to emphasise the need to move towards using cleaner energies.

Figure 1. HDI and PHDI in the European Union



Source: Human Development Index Data from the United Nations (2019).

## There's no excuse to delay any further: let's start using these metrics

The time has therefore come to move away from metrics like GDP as our main signifier of progress. That said, we recognise that composite indicators accounting for climate and other facets of human reality are far from perfect. As we explain [in our report](#), there are various technical limitations (and/or data shortages) that can hinder the usability and direct interpretation of these metrics.

One challenge arises from the implicit ranking nature of composite indicators. Constructing these metrics involves a [normalisation process](#) (usually resulting in a score ranging between 0 and 1, or 0 and 100) followed by aggregation across all dimensions considered. If this normalisation is performed in *relative* terms – by comparing countries with each other – then those demonstrating excellent performance may lack incentives to improve further or continue investing in those areas. Conversely, countries exhibiting very poor performance may feel discouraged, as they are unlikely to

reach top positions. However, if normalisation is based on clear and explicit thresholds (that is, using *absolute* values), such as achieving specific education levels or limiting CO2 emissions below a certain number of tonnes per capita, this issue is alleviated. Countries and governments would then have explicit targets to guide their policies. In this regard, the PHDI serves as an excellent example. All of its subcomponents are normalised using absolute values – for example, with a maximum life expectancy set at 85 years, and a maximum carbon dioxide emission level set at 68.72 tonnes per capita.

Including too many dimensions can also be an issue. Consider, for instance, the **Sustainable Development Index**, also formulated by the UN. This index was designed to capture human development and encompasses up to 114 different components grouped into 17 development goals. These range from being able to access clean water and sanitation to reaching “zero hunger”, and **many more** besides. This broad approach allows for a nuanced representation of socioeconomic reality, but also makes it challenging to disaggregate results and understand how specific dimensions contribute to the overall score. By contrast, we might put the success of GDP as a measure of economic performance down to its conceptual clarity and simplicity.



*What we measure, and how we measure it, is always a normative choice... but this is not necessarily a drawback*



But that is not the only reason for the dominance of GDP. It also stems from the fact that it reflects – in all its usage in research contexts and in public debate – the success of the capitalistic paradigm of “no-matter-what” production and economic growth. It is no coincidence that the system of **national accounts** that provides the theoretical basis to estimate GDP was developed around the time of the onset of the Cold War. For even widely accepted economic metrics reflect the dominant ideology. What we measure, and how we measure it, is always a normative choice.

This is not necessarily a drawback. If we recognise the use of GDP (rather than broader metrics of performance) as *a matter of deliberate choice*, then we open up the door to develop, select, and apply indicators in accordance with matters – like **environmental sustainability** – that we judge to be of critical importance to our policy frameworks and thinking. Technicalities aside, it is essential that we incorporate them into our daily toolbox. It is time **to move beyond GDP**: the world, and the climate challenges especially, have long outgrown its limitations.

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### About the author



**Amaia Palencia-Esteban**

Amaia Palencia-Esteban is a Research Officer at LSE's International Inequalities Institute. Her research focuses on labour market inequalities, particularly those related to gender and immigration. She is also interested in analyzing the distributive impacts of climate change and the vulnerabilities it creates for households.



**Pedro Salas-Rojo**

Pedro Salas-Rojo is a Research Officer at the International Inequalities Institute. His research focuses on the intergenerational transmission of wealth and income inequalities. He is interested in applying computing techniques, especially those related to Machine Learning algorithms, to delve into the causes and drivers of long-lasting inequalities.

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