



A compass towards 2030

Navigating the EU's economy beyond GDP by
applying the Doughnut Economics framework

Imprint

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A compass towards 2030

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1. Introduction

With the COVID-19 crisis, the political focus in Europe is on the need to build back better for a resilient and regenerative economy and to focus on securing the health of citizens. In the State of the Union speech 2021 “Strengthening the soul of the Union”¹, the focus is on demonstrating to EU citizens the positive impact of the EU on their daily life. Approaching COP26, the European Commission will need to communicate the results of its work for the mid-term mandate and show how Europe is delivering on its priorities as a leader in tackling climate change in a “European Way” that links this to the quest of promoting systemic change, the Social Pillar and economic resilience.

Nearly two years after the Communication on the European Green Deal (EGD), Europe’s ambition to become the first climate-neutral continent is more than an aspirational goal. It is now enshrined in European Union (EU) legislation with the Climate Law. Plus, the new set of measures presented by the EU Commission as a climate roadmap on 14 July (Fit for 55) is meant to give Europe the necessary instruments to achieve its objective of climate neutrality. To do this, Commission President Ursula Von der Leyen acknowledges that *“to use the potential of the European Green Deal and Next Generation EU to the fullest and to build the Europe we all want to live in, we must adopt a systemic approach”*².

The objective of climate neutrality by 2050 while leaving no one behind and moving towards resilience requires deep and systemic transformation

of the economy and society³. It will need not only political willingness but also implementation by the 27 EU Member States. The year 2030 is a critical milestone on the way to reach this objective. Progress needs to be tracked in a way that enables policymakers to quickly grasp the EU’s most important trends and to identify important tensions that need to be balanced.

Indicators for monitoring are necessary to guide political decision⁴. Over time, the EU has developed a large set of indicators to track the progress of its political action, from the EU Semester to the Resilience Dashboards, the Social Scoreboard, the National Energy and Climate Plans and the UN Sustainable Development Goals (SDGs).

The new monitoring framework of the 8th Environmental Action Plan (EAP)⁵, **the call for a beyond GDP dashboard at Porto Summit**⁶, **and the announced dashboard for the EGD bring with them new opportunities for looking at those dashboards in a more consistent and systemic way**. While each dashboard has strengths and weaknesses, our analysis shows that existing dashboards fall short in providing an overarching and consistent vision to achieve transformative change that is easy to understand. The main challenge is to coherently integrate the different EU strategies and policy areas within a consistent and appealing narrative and a dashboard that not only monitors progress but also informs policy development and improves communication for the buy-in of society as a whole.

This report proposes an overarching narrative and dashboard inspired by the Doughnut Economics⁷ framework to monitoring progress in the EU towards 2030. The proposed dashboard which we call a “beyond GDP dashboard” embraces the different political EU priorities in a single place (EGD and the 8th EAP, the European Pillar of Social Rights Action Plan, the Recovery and Resilience Facility as well as the EU’s Foresight activities) and ensures a balance between the three ambitions of environmental sustainability, a resilient economy and individual as well as societal wellbeing. We see great potential in thinking about the new dashboard not in isolation, but rather suggest a potential integration with the EGD dashboard.

The remainder of this report is structured as follows. Chapter 2 provides an overview of the environmental and socio-economic challenges facing the EU today, and the institutionalisation of indicators in these policy areas in the EU. It further summarises the existing EU monitoring dashboards and assesses their effectiveness in terms of monitoring the systemic transformation and integrating social and environmental indicators into EU policymaking. It demonstrates that none of the existing dashboards provide a political summary of targets and indicators that are suitable for informing policymakers on the state of social, economic and environmental challenges and their respective progress. In chapter 3 and 4, we present our proposal for a summary of indicators into an overarching beyond GDP dashboard inspired by the Doughnut Economics framework. We propose a list of 30 indicators and relevant 2030 targets, followed by the methodology used to develop them. In chapter 5 we present the results of the framework applied EU and five Member States to demonstrate the application of the proposal, which we evaluate against design criteria in chapter 6. Finally, we offer a discussion for policymakers on the choice of indicators and targets in chapter 7 and conclude with a set of recommendations for the path forward in chapter 8.

2. Effective monitoring of a systemic transformation as a governance conundrum

While the need for a deep and systemic transformation of the EU’s economy is clear, this requires coherent set of social, environmental and economic indicators to monitor progress towards these ambitions⁸. However, the EU today is confronted with a proliferation of dashboards for different political processes: the resilience dashboards, the indicators in the EU Semester and Recovery and Resilience Facility, the 8th EAP, the Social Scoreboard, the Sustainable Development Goals (SDGs), the Resource Efficiency scoreboard and the yet to be developed European Green Deal (EGD) dashboard (announced in the EGD communication⁹).

This creates a challenge for decision-makers to grasp the EU’s most important social, economic and environmental developments and communicate social, environmental and economic progress to the public. The plethora of dashboards makes it difficult to identify important tensions between policy areas which need to find harmony, such as the social consequences of environmental policy actions.

2.1 The EU’s environmental and socio-economic challenges

Looking at the environment, the Intergovernmental Panel on Climate Change’s latest report has been described as a “code red for humanity” and an urgent call to action¹⁰. In a worst-case scenario, global surface temperatures could rise by 4.4 degrees Celsius by 2100 compared to 1850–1900. In this scenario, for every ten years, the earth would experience 9.4 extreme hot temperature events, 2.7 heavy precipitation events, and 4.1 agricultural and ecological droughts, all of which would cause human and ecological suffering and loss of life. At the same time, the world witnesses an unprecedented speed of biodiversity loss, with a 68 % decrease in population sizes

of animals between 1970 and 2016 according to the 2020 Living Planet Index (LPI). Across every world region, changes in land and sea use were the biggest threat to biodiversity¹¹. As the EEA's state of the environment report shows: The impact of biodiversity loss is as disastrous as climate change with significant environmental, economic and social consequences¹².

The reasons for these developments are manifold. Emissions-reduction commitments remain too low, with nearly 40 % of the parties to the Paris Agreement failing to update targets for their Nationally Determined Contributions as of September 2021¹³.

The EU set the target of "at least 55 %" net emissions reduction below 1990 levels by 2030, but reductions between 58% and 70% are necessary to make the EU compatible with the Paris Agreement¹⁴. Furthermore, Europe exceeds its limit for nitrogen and phosphorus losses by a factor of 3.3 and 2, respectively, causing major disruption to the ecosystems¹⁵. The EU also set an objective to halt biodiversity by 2020 but it is not on track to meet that target. 60 % of EU protected species have a conservation status which is unfavourable and 32% of bird species are threatened or not secure mainly due to loss and alteration of habitat and agricultural pollution.

All these environmental challenges need ambitious political actions to be addressed.¹⁶ However, the need to act faces an increasingly polarised society and economy, which compromises peoples' potential to thrive and flourish and undermining their openness for change. This trend has worsened due to the pandemic¹⁷. Precarious work and non-standard forms of employment are prevalent today, often for many workers deemed essential in the pandemic and young people, and real wages have languished^{18,19}. As real estate prices are on the rise, a large share of Europeans face high costs of living: in 2019, "[o]ne in ten Europeans spends 40 % or more of household income on housing costs"²⁰. Income inequality continues to be high; in 2014, the top 1 % earn 12 times more than lowest income²¹. The EU is also behind on gender equality, with an estimated 60 years needed to reach equality at the current pace²². At the same time, loneliness is widespread among Europeans; in 2018, 75 million²³ people in Europe felt socially isolated. This is only a partial list of the social shortfalls in Europe.

These trends have been reinforced through deep structural economic challenges which hamper the ability to act. While addressing the environmental challenges needs public investments²⁴, the room for such investment remains limited. Not only since the COVID-19 crisis, but already since the financial and ensuing Euro crisis, high debt levels paired with the existing set of EU fiscal rules count as one of the reasons for limiting public spending²⁵. At the same time, while many EU countries are catching up in terms of material wealth, imbalances in the production structure and the concentration of industries has further increased. It is not enough to fight wealth and income inequality. It remains an important task to promote the development of sustainable value chains and industrial sectors not only in the European centres but also in the peripheries²⁶.

To address these problems, a systemic transformation of the economy is needed to drastically decarbonise production and consumption, reduce the pressure on ecosystems and ensure the convergence of living conditions across Europe, so citizens are able "to live well within the means of the planet"²⁷. All these problems are interconnected. Stronger environmental policies do not exist without societal support, and societal support requires a stable economy. This, in turn, does not exist without forward-looking economic policy. These problems need a mosaic of solutions that work together towards a thriving and resilient Europe, with ideas that address not only one cause, but several at the same time. The transformation will require a change in practices, policies, lifestyles, and mental models in place in Europe²⁸ by destabilising and phasing out of bad practices at the same time as building the resilience of good practices²⁹.

2.2 The institutionalisation of social & environmental indicators in EU policymaking

The challenge of defining and prioritising suitable indicators to measure progress on this systemic transformation has a long-standing history in the EU. Under the notion of “beyond GDP”, the European Commission went through a comprehensive process of defining appropriate social and environmental indicators from 2007 to 2015. It started with a high-level conference and the Stiglitz-Sen-Fitoussi report³⁰ that presented a series of recommendations for the measurement of current well-being and sustainability. The initiatives informed the definition of the EU 2020 Strategy and resulted in the “GDP and beyond” roadmap³¹, which outlined concrete actions that were evaluated in 2013³².

Since the start of the von der Leyen Commission at the end of 2019, the issue is approached more directly in different processes and from a political rather than a technical angle. The EU set climate neutrality as its main political objective with the European Green Deal³³ and resilience as the compass for its policies in the 2020 Strategic Foresight Report³⁴. Building on the Council Conclusions³⁵ on an economy of wellbeing and the European Economic and Social Committee opinion on the wellbeing economy³⁶, heads of state and governments have underlined in the Porto Declaration³⁷ the importance of measuring beyond GDP. They welcomed the agreement with social partners³⁸, who *“have made a joint proposal for an alternative set of indicators to measure economic, social and environmental progress, supplementing GDP as welfare measure for inclusive and sustainable growth”*. In addition, the Commission has announced the integration of the SDGs into the EU Semester and regularly publishes progress on the SDGs such as the 2019 European Sustainable Development report³⁹. In parallel, the Directorate-General (DG) for Economic and Financial Affairs (ECFIN) recently published a discussion paper “Economic Policy Making Beyond GDP”⁴⁰, which formulates a proposal for advancing a

beyond GDP approach: a “bolder” approach, which *“entails selecting very few indicators that would offer insightful complementary information with respect to GDP growth figures”*.

However, while some indicators get increasing attention as part of the shift in political priorities, such as greenhouse gas emissionsⁱ, an overarching agreement and narrative for a set of headline indicators that summarises the indicators of the different existing dashboards is still missing. In addition, despite progress in some areas, especially in environmental accounting (Multi-Regional Input-Output modelling⁴¹, System of Environmental Accounts⁴²), some of the challenges for mainstreaming alternative social and environmental indicators have not yet been addressed^{43,44}. In particular, the institutionalisation of social and environmental accounts remains weak. Looking at the better regulation toolbox⁴⁵, there is a bias of available tools and guidelines for assessing economic impacts (9 tools) compared to assessing the environmental impacts (1 tool) or social impacts (4 tools). The focus in impact assessments strongly relies on cost-benefit analysis, which excludes many non-quantifiable aspects of sustainability and wellbeing. Furthermore, the assessment models used by the Commission are limited by the range of assumptions and economic models which still tend to use mainly economic, rather than additional social and environmental indicators^{46,47} and selected indicators are fragmented across different decision-making processes, with little agreement and a lack of consistency.

2.3 Assessing the fragmentation of indicators across dashboards

To better understand the extent to which indicators are fragmented across dashboards, we looked at existing EU dashboards to analyse the coverage of social and environmental indicators. To do so, we assessed the indicators used in the publicly available dashboards and indicator sets. As a blueprint for the

ⁱ The EU’s new package of proposals called “Fit for 55” is aimed at creating a climate-neutral Europe by 2050. It is centred around GHG emissions reduction with a 55 % reduction by 2030.

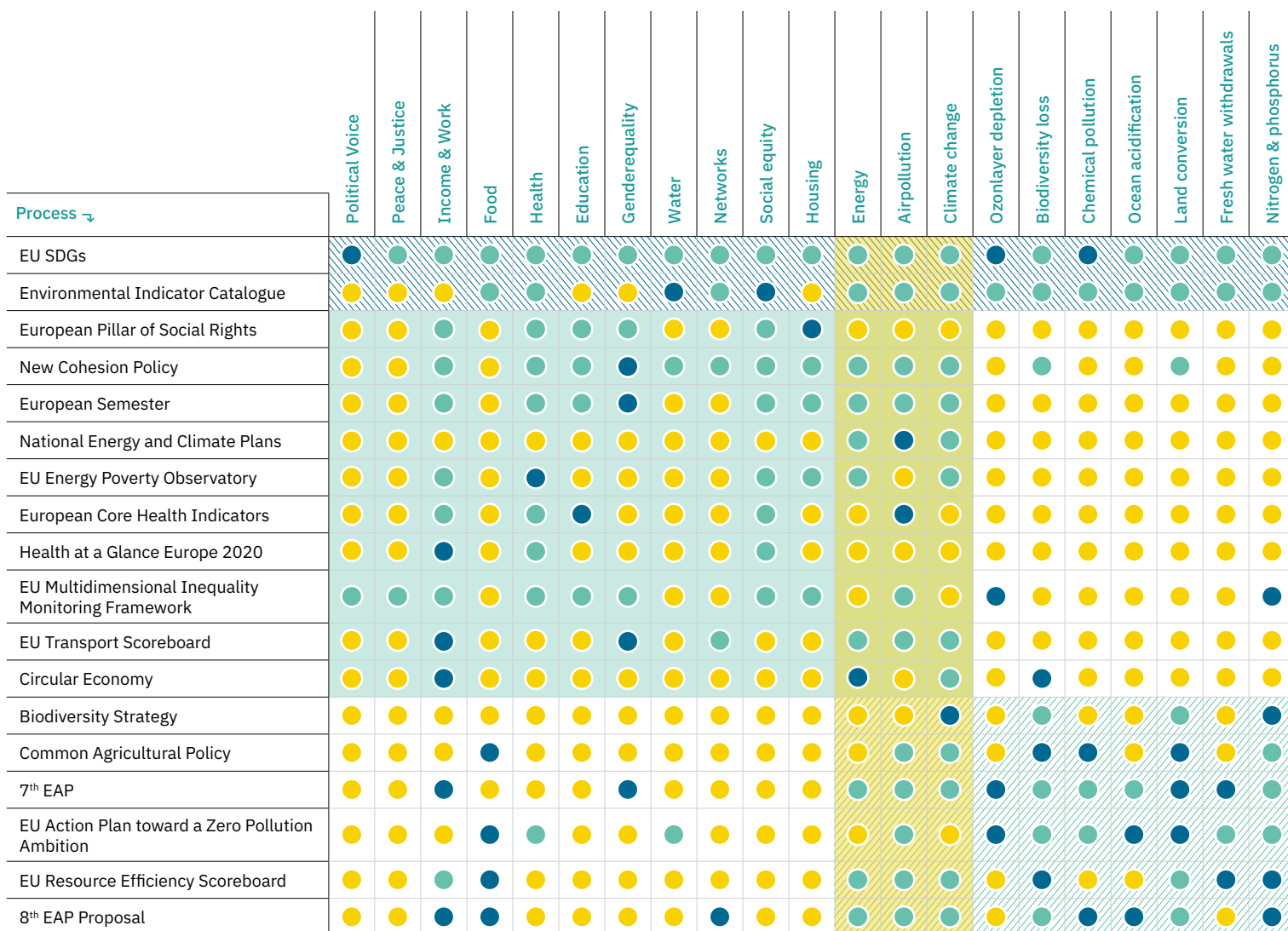


Figure 1: Are existing dashboards systemic? A comparison of existing dashboards and indicator inventories within the dimensions of the Doughnut Economics framework. ZOE Institute, 2021.

assessment, we used the social and environmental categories of the Doughnut Economics framework to understand the scope of each dashboard. These are:

Social: political voice, peace & justice, income & work, education, health, food, water, energy, networks, housing, gender equality, and social equity

Environmental: climate change, ozone layer depletion, air pollution, biodiversity loss, land conversion, freshwater withdrawals, nitrogen & phosphorous loading, chemical pollution, ocean acidification

In a nutshell, our results show that few dashboards integrate both environmental and social aspects. The inventory of 450 existing indicators used for

this assessment can be [downloaded](#) from our website. The colour code indicates for each objective and dashboard, that:

- Yellow:** no indicator is included
- Blue:** a maximum of two indicators is included
- Mint:** more than two indicators are included

One can derive several other conclusions from this analysis:

1. **Only two dashboards cover most of the environmental and social objectives**, namely the SDGs and the Environmental Indicator Catalogue (the blue shaded area in Figure 1).
2. The **mainstreaming of some environmental topics like energy, air pollution and climate**

change has been successful, as most dashboards include these objectives (the **pale yellow** area).

3. In contrast to climate, **other important environmental priorities are often missing**, such as biodiversity loss.
4. In many cases, **dashboards remain focused on their particular policy areas**; one set of dashboards focuses on socio-economic objectives while falling short on environmental issues (the **pale mint** area). In contrast, another set focuses on environmental objectives while lacking socio-economic indicators (the **mint shaded** area).

Most of the existing dashboards add value and provide important information for a respective policy area. However, our impression is that none of the existing dashboards present an easy-to-understand political summary that reduces complexity for decision-makers. Many EU dashboards still present a risk of working in silos due to a too-narrow focus on specific policy areas and the lack of a compelling narrative for the Commission as a whole. As demonstrated in Figure 1, the SDG monitoring is the most systemic monitoring exercise. However, due to its size (169 indicators and 231 targets) important hotspots are difficult to understand, and their scope is not fully consistent with the EU's political agenda. Another candidate, the 8th EAP monitoring⁴⁸, in its draft version, integrates dimensions related to wellbeing, resilience and just transition. However, it lacks overarching social and economic indicators. The creation of the resilience dashboards⁴⁹ integrates a social, economic and environmental indicators. However, the dashboards are designed around capacities and vulnerabilities, and therefore measure the *ability* to make progress rather than the progress to targets itself. Additionally, these dashboards **lack a compelling narrative and visualisation of progress.**

Thus, according to our assessment there is still a need for a dashboard which defines important priorities, serves as a summary of headline indicators and as such supports the needs of the Commission to track progress towards the European Green Deal, the Social Pillar and the quest for a resilient and regenerative economy in a consistent way. In chapter three we outline our vision of how this dashboard could look.

2.4 Making indicators effective: the role of targets

Besides fragmentation, another challenge to increasing the impact of social and environmental indicators in the policy design process lies in the definition of targets. Targets enable decisionmakers to easily interpret indicator values and see if, compared to the reference year, the situation is moving in the right direction and at a sufficient speed.

In the context of past and ongoing legislative processes, the EU has defined targets for environmental (e.g., Environmental Action Programme, Climate Law), economic (e.g., Stability and Growth Pact) and social indicators (e.g., social targets agreed at the Proto Summit). However, setting a target for a selected indicator doesn't mean the indicator becomes politically relevant. There are, for example, more than 100 environmental targets, with many having a rather weak importance⁵⁰. Targets can be very effective in creating an impact (e.g., targets set in the National Emissions reduction Commitments (NEC) Directive), but they do not guarantee that they will be achieved.

The question to what extent a target drives political action, in a way that the associated indicator effectively moves in the right direction, is shaped by four success factors:

1. **Binding vs. non-binding targets:** while non-binding targets can shape political discourse by painting a precise picture of what policy wants to achieve, they lack enforcement. Binding targets hold Member States accountable and give the Commission a means of enforcement.
2. **Quantitative vs. qualitative targets:** the advantage of a quantitative target is that it brings clarity to policymakers (and any stakeholders concerned, such as businesses, trade unions, citizens) and it allows for proper monitoring and evaluation. A qualitative formulation (e.g., "increase the number of bathing waters classified as 'excellent' or 'good'") without quantification gives a sense of direction, but it does not allow evaluation of whether the target has been

reached or how far the status quo is away from the target (see Box 1 in the following chapter). Based on IEEP’s analysis of the 2018 progress report for the 7th EAP⁵¹, in areas where there only qualitative targets, the risk for differences in interpretation at the implementation stage is much higher. Qualitative targets give the EU Commission a tougher task for demonstrating that a Member State might be in breach.

3. Governance process vs. simple reporting:

governance processes determine the levers of action that are possible to use when a target is not met. In some cases, governments are obliged to come up with ideas and solutions of how to achieve the targets (as for example in the case of the Climate Pact and the Stability and Growth Pact), while in others political action mainly focuses on the reporting of how the indicator develops (e. g., SDGs).

4. **Legal form:** targets can be found in different types of legal documents, be it a directive (e. g., the EU Waste Framework Directive, which set recycling targets by 2030), a regulation (e. g., the European Climate Law) or a communication (e. g., the Sustainable and Smart Mobility strategy⁵², which defines a target for 100 European cities to be climate neutral by 2030). The legal form of the text that includes the target impacts the enforcement by the Commission’s services and the implementation of associated measures through action plans and investments.

Box 1: Distance-to-target and gap monitoring

One way to merge a target and an indicator into one single number is the “distance to target” or “gap” approach. A recent example where distance-to-target measurements occur are emissions gaps, that measure “the difference between where we are likely to be and where we need to be”⁵³. This approach stands at the core of the Doughnut Economics framework. Distance to targets or gaps are promising for policy use for several reasons:

- They contain both what should be reached and the state of the reality.
- They’re potentially easy to compute based on existing data.
- They help framing discussion on the costs and means of “bridging the gap”.
- They serve as a basis for prioritising areas of action by comparing the distances.

Generally speaking, the definition of targets at the EU level is politically sensitive. Since targets can have important legal consequences for Member States as part of a binding governance process and thereby restrict the power of governments, a broad political consensus is needed. This is often difficult to achieve, especially at the Council level, as shown by the negotiations in the Council on the –55% target of the European Climate Law⁵⁴. Additionally, the definition of targets in the EU is spread across various institutions with different formats, time scales and governance processes attached. The EU has set targets in different policy areas in a disparate way and with different levels of effectiveness. To date, there is no consistent structure on how the targets between policy areas are linked.

Box 2: The state and outlook for targets in EU policymaking

While the EU has many targets, there is no balance of targets across policy areas. Usually, targets are not designed in a coherent manner but rather separately within each policy area. Consequently, there is potential for tensions between targets of different policy areas. Below is an overview of the EU targets and target setting for each area.

Environmental issues

The EU has at least 100 quantitative policy targets that are relevant to climate and the environment⁵⁵. In recent years, discussions have centred around climate targets. Targets for emission reductions have now been enshrined in different pieces of legislation,

e.g., the 55% reduction compared to 1990 in the EU Climate Law⁵⁶, but also at the level of Member States, e.g., a 65% reduction target in the German climate law or the 40% reduction target by 2030 in the French Climate and Resilience Law⁵⁷.

Science is inevitably pushing the EU to adopt new targets. Biodiversity preservation and restoration are increasingly getting attention for their strong economic implications⁵⁸. As part of the EU Biodiversity Strategy 2030, the EU Commission aims to propose binding nature restoration targets by the end of 2021⁵⁹⁶⁰. There is an emerging agreement among scientists that global resource extraction of renewable and non-renewable materials needs a limit, estimated at nearly an annual maximum of 50 billion tons globally⁶¹⁶²⁶³. Against this background, the European Parliament Environmental Committee adopted a report⁶⁴ that calls for absolute targets for resource use within the EU's Circular Economy Action Plan.

Economic issues

While the EU Semester communications do not include proper targets, these are covered by the underlying economic rules of the Stability and Growth Pact (SGP). The 2008 financial crisis led to a series of reforms through the Fiscal Compact, which ensures that concrete steps are taken if a country falls short of meeting the budgetary rules⁶⁵. The SGP ensures fiscal discipline by requiring each Member State to stay within the limits for government deficit (3 % of GDP) and debt (60 % of GDP).

Further targets are defined as part of the EU's research and innovation agenda. In addition to confirming the target of 3 % of the EU's GDP to be invested in R&D as laid out in the Lisbon Strategyⁱ, the Research and innovation Strategy 2020–2024 defined that Horizon Europe will dedicate at least 35 % of its budget to climate-related actions, contributing to the general 30 % budgetary target of the Commission.

Social issues

For a long time, the Commission and Member States lacked the definition of social targets (job creation and employment excluded), especially in the fields of health and wellbeing⁶⁶. While the proposal for the 8th EAP monitoring framework aims to integrate indicators to track progress for wellbeing, resilience and just transition, both indicators and targets for these are missing.

Only recently, at the Porto Social Summit, EU leaders, social partners and civil society representatives endorsed the Commission's proposal to create a new set of measurable social targets to be achieved by 2030ⁱ. Those targets of the European Pillar of Social Rights are set out in the European Skills Agendaⁱ, the Council Recommendation on Vocational education and trainingⁱ, and in the Council Resolution on the European Education Areaⁱ: at least 78 % of the population aged 20 to 64 should be in employment by 2030; at least 60 % of all adults should participate in training every year; the number of people at risk of poverty or social exclusion should be reduced by at least 15 million by 2030.

3. The vision for a beyond GDP dashboard

The window of opportunity for advancing the discussion of prioritising social, environmental, and economic indicators and create concrete proposals is now. Decisionmakers are now discussing in trilogue the 8th EAP, where the EU Parliament⁶⁷ is calling to establish a set of beyond GDP indicators which measure progress towards a sustainable wellbeing economy. Furthermore, the resilience dashboards, announced in the 2020 Strategic Foresight Report⁶⁸, are an important step towards a more integrated approach for measuring wellbeing and sustainability beyond GDP. In addition, the Commission still must develop the dashboard for the European Green Deal.

Moving forward, we recommend further elaboration of an overarching narrative and dashboard that ensures a balance between the three political priorities of environmental sustainability, a resilient and digital economy and wellbeing. In the following, we refer to this political summary as a “beyond GDP” dashboard.

3.1 Expectations and design criteria for a beyond GDP dashboard

An overarching political summary of existing indicators in the way that is presented in Figure 2 can meet a variety of needs and expectations that we have collected in an internal workshop with Commission members in July 2021ⁱⁱ as well as through bilateral exchanges. In order to improve sustainability, prosperity, well-being and health of citizens across 27 Member States, progress towards targets needs to be monitored consistently across these Member States. To be politically relevant, such a dashboard should meet several expectations which we translated into concrete design criteria that should characterise a beyond GDP dashboard. These are presented in Box 3.

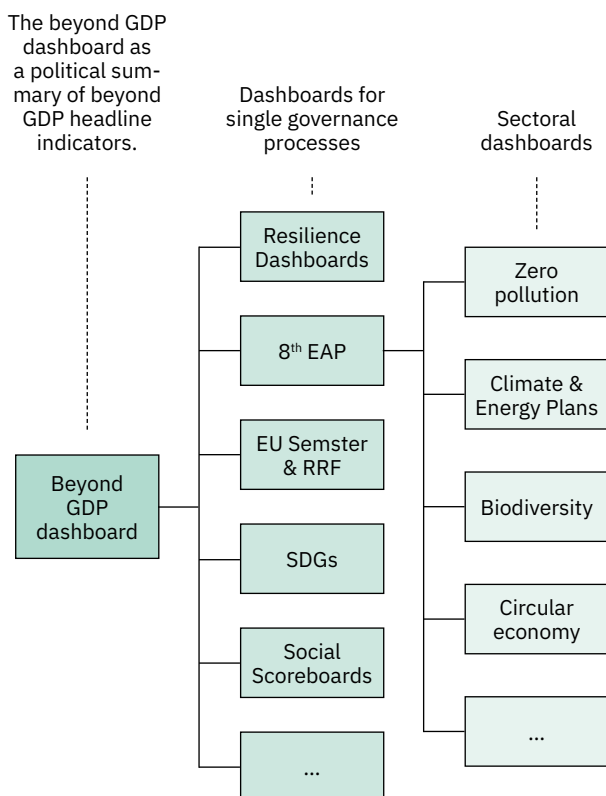


Figure 2: Illustration of the relation of the beyond GDP dashboard to the existing dashboards

Box 3: Design criteria for a beyond GDP dashboard

- 1. Consistent:** Avoid additional administrative burden by reflecting the integration of beyond GDP as a political summary of indicators with the EGD Dashboard. Ensure the consistency of indicators in comparison to other dashboards and avoid overlaps between indicators. Add value compared to the 8th EAP which fails to include overarching social and economic indicators. To be consistent with existing dashboards, it should capture their essence as well as

ⁱⁱ The workshop collected input on the criteria for an EGD dashboard. As the participants highlighted the need to include social, environmental and economic indicators in a balanced way, the criteria for the EGD dashboard also apply for a political summary of indicators.

sector- and topic-specific processes such as Zero Pollution, climate and energy plans, and biodiversity. The dashboard should also embed the “leave no one behind” principle into a series of overarching social objectives as well as qualify the resilient economy we need in the future.

2. **Systemic:** Adopt a holistic and systemic approach to capture the essence of existing dashboards, picturing the changes in the economy and society and thereby help manage tensions between policy objectives. The dashboard should enable decision-makers and citizens to **quickly grasp the EU’s most important trends** and enable readers to easily **identify important interconnections** between policy objectives that need to be balanced, ensuring a balance between the economic, social and environmental dimensions.
3. **Long term:** build the dashboard around 2030 targets with the objective of making this dashboard a political tool for tracking progress made under this Commission and beyond, and steer policymakers towards the long term.
4. **Transformative:** point at the core priorities to accelerate the a green and just transition towards a resilient economy
5. **Impact focused:** Focus on measuring the impacts and outcomes of policies needed to reach the 2030 targets rather than the policy outputs.
6. **Up to date:** From a technical point of view, the dashboard should utilise the most advanced existing indicators.
7. **Easy to understand:** In order to drive political action and support decision making, the indicators should be easy to interpret, and the number of indicators should be limited to 20–30. It should help mainstream **social and environmental indicators** throughout the Commission and Member States as well

as give a **clear visual representation** of the EU’s priorities. The dashboard should address the right audience with a compelling narrative and visualisation that can speak to both policymakers (at the EU and national levels) and to EU citizens.

In addition to the criteria for the dashboard as a whole, experts mentioned several fundamental criteria for the selection of single indicators, such as robustness, timeliness, breadth of coverage, alignment with policy targets, transparency, and accessibility to everyone. This complements the RACER criteria from the better regulation guidelines and toolbox⁶⁹ (see 3.2). The most important criteria for the dashboard and the selection of indicators are summarised in Table 1 below.

Types of criteria	Description
Technical criteria	robust; frequent; up to date; easy to measure; broad geographical coverage; sound scientific basis; quantifiable
Political criteria	focus on transformative action; clear directionality; accepted by policymakers
Audience	policymakers in the EU Commission; policymakers in Member States; EU citizens; media

Table 1: Criteria for the selection of single indicators

3.2 Monitoring in public policy: important considerations

Beyond these specific criteria, there are important aspects to be taken into account when designing a monitoring dashboard for public policy. Many issues related to the design of policy monitoring are discussed within the better regulation guidelines (BRG). With the BRG, the European Commission sets standards for preparing new initiatives and managing existing legislation⁷⁰. The better regulation “Toolbox” (BRT) is designed to complement the guidelines with specific operational guidance. Tool #41 within the

BRT provides guidance on monitoring arrangements and indicators. This tool lays out important considerations for monitoring a policy intervention.

When considering how to design the monitoring of a policy, several aspects need to be considered:

- What to measure:** to monitor progress towards an objective at hand, a set of indicators must be defined. According to Eurostat, a [statistical] indicator is defined as “the representation of statistical data for a specified time, place or any other relevant characteristics, corrected for at least one dimension so as to allow for meaningful comparisons”⁷¹. Indicators are the backbone for setting targets and monitoring achievements of EU policies. Databases are published by government statistics agencies like Eurostat in the EU, as well as by the OECD, the World Bank, the IMF, and the institutions of the UN. The BRT highlights some criteria to assess the quality of an indicator. This includes the availability and quality of data to measure a certain indicator. Furthermore, the Toolbox suggests that indicators should follow the **RACER** criteria in being relevant to the objectives, accepted by staff and stakeholders, credible for non-experts, easy to monitor, and robust against manipulation. Proxy indicators can be used where underlying causal links are well understood to monitor things that are difficult to measure.
 - Where to measure:** When deciding on indicators it is also important to determine the precise point of a causal chain that needs to be measured. Looking at the interplay of policy and how it affects the real-world options includes, for example, the amount of policy *outputs* (e. g., enforcement of a law for congestion pricing), the *outcomes* from those outputs (e. g., fewer cars on the road at peak times), the *impact* of those results (e. g., a reduction of car-based emissions), the compliance with the policy (business compliance, court cases pursued) or *contextual information* that considers developments possibly influenced by the policy intervention but not intended by it⁷². One could also look at the interplay of the economy and the environment,
- as captured in the **DPSIR** framework. DPSIR describes interactions between society and the environment through policy choices by examining **d**iving forces, or needs, **p**ressures on the environment, **s**tates of the environments affected (physical, chemical and biological conditions), **i**mpacts on ecosystems and human health, and **r**esponses. This is the method adopted by the European Environment Agency⁷³ and is a strong framework for working with environmental indicators.
- How to measure:** There are various types of indicators that can be used for monitoring. Indicators can be of quantitative (defined by numbers) or qualitative (defined by qualities, such as “strong” or “weak”) nature. Multiple indicators can also be combined in an index, or a composite indicator. These typically measure concepts that are multi-dimensional and cannot be captured by a single indicator⁷⁴. Some indicators measure relative progress (e. g., emissions by GDP) and can provide information about the severity of a tension between objectives. In contrast, ultimate goals usually use absolute indicators like absolute carbon emissions, species lost, people at risk of poverty, etc.
 - How to present results:** After considering why and how to monitor policies, it is important to consider how to present results. The easiest way is to simply present the number of the indicator, either for a given year or as a time series, which is usually the case, e. g., in the Social Scoreboard⁷⁵. However, this lacks information on whether the indicator is moving in the right direction at sufficient speed. One way to deal with this is by using targets that represent goals to strive for, such as “reach climate neutrality by 2050”. Measuring the distance to target as the distance from a point in time to a goal⁷⁶ simplifies the interpretation of the indicator value. By measuring the distance to a target, we can ensure that the scale and pace of progress is on track to reach that target⁷⁷.

4. Applying Doughnut Economics to monitor a beyond GDP agenda

This report aims to present a proposal for a beyond GDP monitoring dashboard. For this, we take inspiration from Doughnut Economics as a framework for the selection and presentation of indicators.

The Doughnut Economics framework aims for a balance between social and environmental policy objectives and already has high-level support in the EU, including from Executive Vice President Maroš Šefčovič⁷⁸ and the Strategic Foresight report⁷⁹. It has also been discussed across the Commission within the informal cross-departmental working group “Doughnut for Europe”⁸⁰ during a workshop in March 2020. Additional experience from its application in

policy comes from cities such as Amsterdam who are applying the concept⁸¹.

Doughnut Economics provides a comprehensive and integrative framework to analyse policy impacts on ultimate social and ecological ends. The inner ring of the Doughnut represents the *social foundation*, below which lies a critical deprivation of aspects of a good life and a strong society. The outer ring represents the *ecological ceiling*, above which is an overshoot of planetary boundaries and a critical risk of planetary degradation which hinders the possibility to sustain a good life and society in the 21st century. Between these two rings is the *safe and just space for humanity* (see Figure 3)⁸². Downscaling the Doughnut for a context such as the EU supports policymakers by reflecting tensions and trade-offs between different policy objectives, as meeting a social threshold in one area could entail environmental

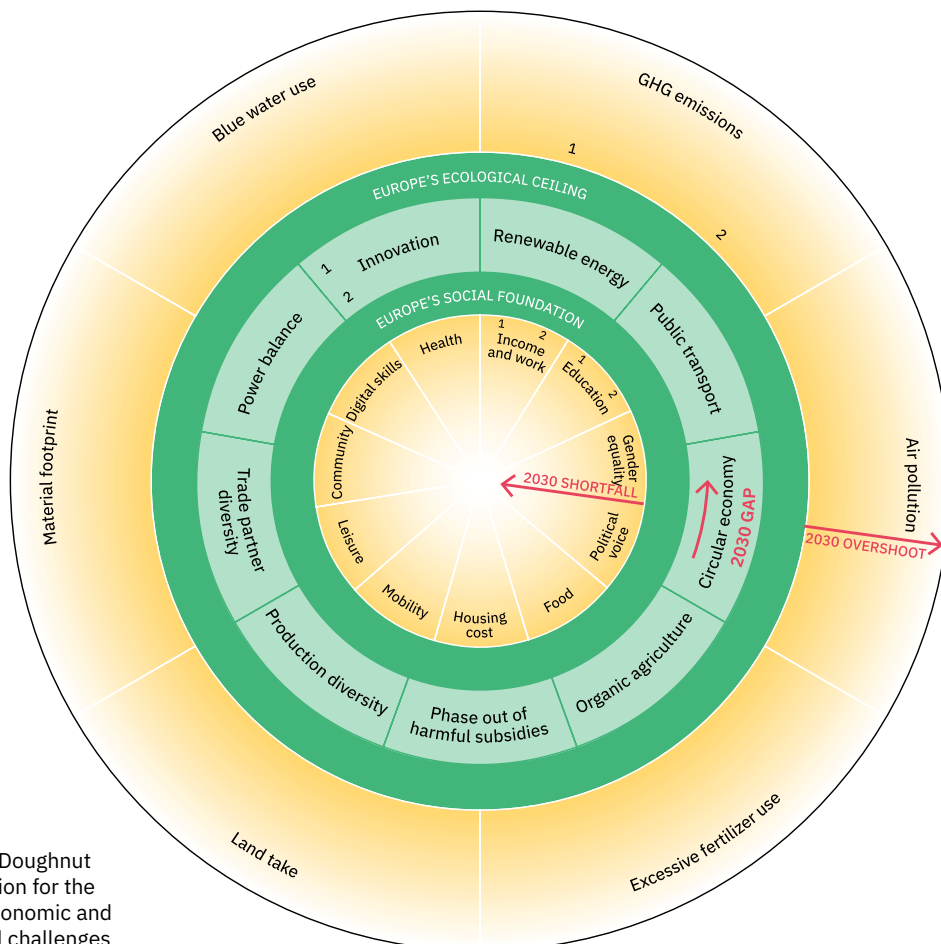


Figure 3: The Doughnut as a visualisation for the EU’s social, economic and environmental challenges

pressures elsewhere, as well as co-benefits between policy areas, e. g., improved health as a result of lower air pollution⁸³.

In this chapter, we present the indicators and corresponding 2030 targets selected for an overarching beyond GDP dashboard based on the Doughnut Economics framework. These indicators aim to underpin the notion of the “sustainable wellbeing economy” as demanded by the European Parliament in its report on the 8th EAP⁸⁴, the “economy of wellbeing” put forward by the EU Council⁸⁵, the Commission’s plan to “put sustainability and the well-being of citizens at the centre of economic policy” as laid out in the Communication on the European Green Deal⁸⁶, or a “regenerative and distributive economy” as phrased by Kate Raworth⁸⁷.

With this selection of indicators, we aim to meet the criteria for the beyond GDP dashboard as defined in chapter 3.1 in a way that meets the requirements for visualising them in a Doughnut (details in chapter 4.2). We integrated indicators from existing dashboards as often as possible. In some exceptional cases, we suggest further indicators. As many of the Commission’s priorities go far beyond those of the past (e. g., the goal of a resilient economy), we see the need to develop new indicators from existing data and to integrate them consistently into existing monitoring dashboards.

We complement the original Doughnut framework with additional indicators for policy levers and economic enablers to capture both potential areas for investments and the characteristics of a resilient economyⁱⁱⁱ and provide substance to the notion of a “regenerative economy” used by the European Commission⁸⁸. In doing so, we want to address the challenge that the Doughnut in its original form, with its focus on purely environmental and social goals, makes it difficult to apply in economic DGs such as ECFIN or GROW.

4.1 Indicators underpinning a beyond GDP dashboard

The indicators and targets used and presented in the following table are structured along the ecological ceiling (environmental indicators), social foundation (social indicators) and policy levers as well as economic enablers (economic and sectoral indicators). The environmental indicators strongly relate to the idea of planetary boundaries and are in line with the 8th EAP, the EGD priorities and the environmental SDGs. The social indicators capture the core aspects of the social foundation of Europe in line with the Social Pillar and the social SDGs. They represent ultimate social objectives that underpin the notion of a European Union that is “reflective, determined and caring”⁸⁹ and leaves no one behind. The indicators for policy levers as core characteristics of a resilient and regenerative economy are a deviation from the original idea of the Doughnut as explained in the introduction of this chapter. References here include the 8th EAP, the European Semester and the Resilience Dashboards but also new indicators we propose. It is here that policymakers will also find intervention areas for addressing the drivers of today’s environmental and social challenges.

You will find the selection of indicators on the next pages. The rest of the chapter explains the rationale behind the selection process and presents the overlaps with existing dashboards.

4.1.1 Environmental indicators and targets

The selection of environmental indicators is inspired both by the priorities of the EGD and the objectives and headline indicators of the draft monitoring framework for the 8th EAP. In addition, we aimed for consistency with the environmental SDGs, namely SDG 12 on responsible consumption and production, SDG 13 on climate action, SDG 14 life below water and SDG 15 on life on land. The priorities of the 8th EAP are presented in Box 4.

ⁱⁱⁱ These indicators build on previous recommendations on the measurement of the resilience dashboard: <https://zoe-institut.de/en/publication/3636/>

Box 4: Distance-to-target and gap monitoring

In its communication on the **European Green Deal**, the Commission outlined 11 priorities:

1. **Climate neutrality:** Climate neutrality until 2050
2. **Zero pollution:** A zero-pollution ambition for a toxic free environment
3. **Nature protection:** Preserving and restoring ecosystems and biodiversity
4. **Just transition:** Leave no one behind
5. **Circular industry:** Mobilising industry for a clean and circular economy
6. **From farm to fork:** A fair, healthy and environmentally-friendly food system
7. **Clean energy:** Supplying clean, affordable, and secure energy
8. **Sustainable mobility:** Accelerating the shift to sustainable and smart mobility
9. **Energy-efficient buildings:** Building and renovating in an energy and resource-efficient way
10. **Finance:** Financing the transition
11. **Innovation:** Mobilising research and fostering innovation

The **8th EAP monitoring framework** includes the following categories:

1. **Climate mitigation**
2. **Climate adaption**
3. **Circular Economy**
4. **Zero Pollution**
5. **Biodiversity**
6. **Reducing environmental and climate change pressures**
7. **Enabling framework**
8. **Living well within planetary boundaries – regenerative economy**

To distinguish which EGD objectives should be part of the ecological ceiling, and which fall under the categories of socio-economic indicators or policy levers, we used the DPSIR framework (see 3.2). This is the method adopted by the European Environment Agency⁹⁰ and is a strong framework for working with environmental indicators.

An example of DPSIR in action is a situation in which fossil energy production (driving force) emits CO₂ (pressure) that changes the CO₂ concentration in the atmosphere (state), leading to temperature increases (impact). The societal response to this could be increasing renewable energy production (response). Here, both the driving force and the response have strong links to the structure of the economy (including mobility, energy, food systems and built environment) and are therefore not suitable to be represented as part of the ecological boundaries, but rather as part of the indicators representing policy levers and the resilient economy (see 0). The environmental indicators instead correspond to indicators on pressures. This is a slight deviation from the planetary boundaries framework, but in line with the reasoning of other downscapes of the Doughnut⁹¹.

Against this background, we use only indicators (see Table 3) that represent the 8th EAP's environmental objectives (numbers 1–5, see Box 4). With relation to the EGD, the indicators capture to the associated ecological pressures from the following priorities: circular industry, Farm to Fork, clean energy, sustainable mobility, and energy efficient buildings.

Label for dashboard ↗	Indicator name	Publisher	Target 2030 [unit]	Justification of target
GHG emissions 1	GHG emissions	Eurostat (DEMO_GIND, ENV_AIR_GGE)	-55 [%] EU target	Target is derived from the European climate law and European Climate Target plan. One of the biggest priorities of the EGD is to reduce these emissions by 55 % from 1990 levels by 2030 in line with the net zero objective by 2050.
GHG emissions 2	GHG emissions	Eurostat (DEMO_GIND, ENV_AIR_GGE)	-62 [%] Scientific target	Several studies demonstrated that the fair share of the EU to reach the goal of the Paris Agreement should be a reduction of between 60 and 65 % ^{92,93,94} . Based on calculations from Climate Action Tracker and calculations made with the Carbon budget calculator, a 62 % reduction was found to be the minimum to reach the goal set by the Paris Agreement for 2030 ^{95,96} . Moreover, a study by Cornet et al. (2018), showed that the EU could reach this target of 62 % if best practices are applied by the MS ⁹⁷ .
Air pollution	Air pollutants (PM2.5)	Eurostat (ENV_AIR_EMIS)	MS specific [%]	National Emission Reduction Commitments (targets for 2020–2029, and after 2030) for SO ₂ , NO _x , NMVOC, NH ₃ , and PM _{2.5} have been set for 2005 under the National Emission Ceilings Directive, reducing the percentage of EU population exposed to concentrations above the WHO guideline values. The base year is 2005 for comparison. The NERC formulates reduction targets on MS level. New guidelines have been released by the WHO in September 2021 setting an annual average limit of 5 µg/m ³ for PM 2.5 ⁹⁸ .
Excessive fertiliser use	Gross nutrient balance for agricultural land	Eurostat (AEI_PR_GNB)	0 [kg of nutrient per hectare]	There is no clear target for gross nutrient balance. However, as a value above 0 indicates a net intake of nutrients into the ecosystem leading to eutrophication, the target is set to 0 and a value below 0 indicates a low soil fertility ⁹⁹ . Concrete EU targets include the reduction of losses of nutrients from fertilisers by 50 % by 2030, resulting in the reduction of the use of fertilisers by at least 20 % (indicative) as part of the EU Farm to Fork Strategy. In the past, the Seventh Environment Action Programme (7th EAP) called for further efforts to manage the nutrient cycle more sustainably and to improve the efficiency of the use of fertilisers.
Land take	Net land take	EEA	331 [km ² of sealed surface]	The most recent yearly land take of the EU is 425 km ² and a goal has been set through the Roadmap to a Resource Efficient Europe (COM(2011) 571) to reach net zero land take by 2050. Using interpolation, the target value for 2030 is 331 km ² of yearly land take. The target was allocated to each MS depending on their share of the EU population (more information on the MS targets can be found in annex).
Material footprint	Material footprint per capita	OECD	14,117 [kg]	The EP recently called for a target for the EU's material footprint target ¹⁰⁰ . A scientific target was calculated by interpolation between the most recent EU material footprint 20,043 kg per capita and the target from Bringezu (2015) for 2050 of 5,000 kg per capita ¹⁰¹ . Thereby the material footprint corresponds to per capital raw material consumption both for consumed products produced inside and outside the EU.
Blue water use	Water exploitation index, plus	Eurostat (sdg_06_60)	10 [%]	Over 40 % corresponds to severe water scarcity, between 20 and 40 % indicates water scarcity, between 10 % and 20 % represents moderate water scarcity and below 10 %, low water scarcity. Based on these scientific targets and for countries to prevent future worsening (especially linked to climate change ¹⁰²), the target was set to 10 % ¹⁰³ .

Table 2: Selected indicators and targets for the ecological ceiling

Label	Indicator name	Consistent with					
		8 th EAP	EGD objective	RES	SDG	SDG ^{EU}	RD
GHG Emissions 1 & 2	GHG Emissions	Climate mitigation	Climate neutrality; clean energy, sustainable mobility, energy-efficient buildings	X	13	13	X
Air pollution	Exposure to air pollutants (PM2.5)	Zero Pollution	Zero Pollution	X	11	11	X
Biodiversity pressure	Net land take	Biodiversity	Nature protection		15	15	
Material Footprint	Material footprint per capita	Circular Economy, Biodiversity, ~ Living well within climate boundaries – regenerative economy	Circular industry		12		X
Blue water use	Water exploitation index, plus	Zero pollution, biodiversity	Nature protection	X	6	6	X
Excessive fertiliser use	Gross nutrient balance for agricultural land	Zero pollution, biodiversity	Nature protection, farm to fork	X	12, 13, 15,		

8th EAP: 8th Environmental Action Programme; RES: Resource Efficiency Scoreboard; SDG: Sustainable Development Goals; SDG EU: Consistent with Eurostat SDG indicators; RD: Resilience Dashboards

Table 3: Consistency of indicators selected with the EU's environmental priorities

The objective of climate adaptation is not included in this proposed framework as this falls under the “response” category of the DPSIR framework. However, due to their environmental significance, we also included indicators on blue water use (*water exploitation index, plus*), and one on phosphorous and nitrogen use (*gross nutrient balance for agricultural land*). As part of the planetary boundaries¹⁰⁴, both topics strongly relate to the EGD objective of nature protection¹⁰⁵. In adding these indicators, we also do justice to the SDGs, in particular SDG 14 (life below water) and SDG 15 (life on land).

If needed, the indicators selected here could easily be replaced by two others from Eurostat’s SDG monitoring framework¹⁰⁶. However, for both indicators it is easy to agree on the definition of a “good” value; when the “Gross Nutrient Balance” is higher than 0, it means the soil is degraded due to an excess of nutrients and when it is lower than 0, it has a low fertility due to a lack of nutrients¹⁰⁷. Therefore, the

best value is 0. For the water exploitation index plus, levels of water scarcity have been determined. A “water exploitation index, plus” above 40% corresponds to severe water scarcity, between 20 and 40% water scarcity, between 10 and 20% moderate water scarcity and under 10% low water scarcity¹⁰⁸. Consequently, to prevent a potential worsening with climate change, the EU should aim for target of at most 10%. Most of these indicators are also included in the Resilience Dashboards and/or the Resource Efficiency Scoreboard.

While all indicators are in line with the RACER criteria (see chapter 3.2), a caveat is that the data available is not always up to date. Indicators such as air pollution, land take and material footprint only have data up to 2018 as the data is only published every two to three years, in contrast with others for which data is collected annually. Moreover, the indicator “raw material consumption” per capita from Eurostat displays much smaller values than the data

Label for dashboard ↗	Indicator name	Publisher	Target 2030 [unit]	Justification of target
Health	Self-reported unmet needs for health care (total per MS)	Eurostat (HLTH_SILC_08)	0 [%]	This target has been set to 0 % in the EU sustainable development report which tracks the progress of the EU MS towards the SDGs ¹⁰⁹ . This matches the target of SDG 3 on Good Health and Wellbeing (3.8) of which the main argument is to “Achieve universal health coverage” ¹¹⁰ .
Leisure	Long working hours in main job	Eurostat (lfsa_qoe)	0 [%]	According to the OECD, long working hours can have impacts on the amount of leisure and can thus decrease the wellbeing of an individual ¹¹¹ . Therefore, 0 % would be a reasonable target for this indicator.
Community	Persons who have someone to discuss personal matters	Eurostat (ILC_SCP18)	100 [%]	According to the OECD, “quality of life is also about relationships” ¹¹² That is why in their better life index, the community aspect and having relatives that are there for you are important factors ¹¹³ . This target is reasonably 100 % since the EU average was 91.9, and 93.8 respectively ¹¹⁴ .
Digital skills	Individuals who have basic or above average digital skills	Eurostat (tepsr_sp410 isoc_i)	80 [%]	The new European Pillar of Social Rights Action Plan set a target of 80% of the population aged between 16 and 74 with at least basic digital skills.
Education 1	Tertiary education attainment as share of population aged 25–34	Eurostat (sdg_04_20)	45 [%]	The Council Resolution (2021/C 66/01) sets the EU target for the tertiary education attainment as measured to be at least 45 % by 2030 for the population aged between 25 and 34 years old.
Education 2	Share of adults participating in education and training annually	Eurostat (trng_aes_101)	60 [%]	The European Commission has proposed a target of 60 % of adults participating in training annually by 2030. It is planned to be adopted as part of the new European Pillar of Social Rights Action Plan in Q4 of 2021.
Income & work 1	Employment rate age group 20–64 as a share of total population	Eurostat (LFSI_EMP_A)	78 [%]	The European Commission has proposed an employment target of 78 % of the population aged 20 to 64 for the EU to reach by 2030 to be adopted in the new European Pillar of Social Rights Action Plan in Q4 of 2021.
Income & work 2	People at risk of poverty or social exclusion	Eurostat (sdg_01_10)	17 [%]	The European Commission has proposed to reduce by 15 million the number of people at risk of poverty or social exclusion by 2030. Since, there were around 91 million people at risk in 2019, which corresponds to 20.9 % of the EU population. With a reduction of 15 million people, this would correspond to around 17 % of the EU population in 2030 (more explanation on this target can be found in Annex). However, the decrease needed in each MS depends on their share of population out of the total EU population. This will be adopted in the new European Pillar of Social Rights Action Plan in Q4 of 2021.
Gender equality	Gender employment gap	Eurostat (LFSI_EMP_A)	/2 [unit]	The target that will be adopted in Q4 of 2021 in the new European Pillar of Social Rights Action Plan is to halve the gender employment gap compared to 2019.
Political voice	Voter turnout	The International Institute for Democracy and Electoral Assistance (IDEA)	77 [%]	As there is no target from either the EU nor a scientific target, the threshold was defined as the average of the top 5 performers as explained in Section 4.1.1.
Housing cost	Housing cost overburden rate by income quintile (first quintile)	Eurostat (ilc)	12 [%]	There is no official EU target, and the EU average is around 32 %. Therefore, 0 % seems an unrealistic target for 2030. Thus, the average of the 5 best performers was calculated as explained in Section 4.1.1.
Food	Inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day	Eurostat (HLTH_DM030)	0 [%]	This target is not part of existing legislation, but in line with SDG 2 (2.1) on zero hunger which states “ensure access by all people [...] to safe, nutritious and sufficient food all year round” ¹¹⁵ .
Mobility	Self-reported unmet needs for mobility ^{iv}	Indicator proposal	0 [%]	This target is based on SDG 11 (11.2) on sustainable cities and communities which has the objective to “provide access to safe, affordable, accessible and sustainable transport systems for all” ¹¹⁶ .

Table 4: Selected indicators and targets for the social foundation

^{iv} This indicator does not exist, but we argue for its creation.

from OECD, while they are both measuring material footprint. This means that if used with the data from Eurostat, the target should be adapted. Nevertheless, the OECD data was chosen because the Eurostat dataset only include 11 Member States.

4.1.2 Indicators for the social foundation

Prioritising social objectives or the key components of human wellbeing is not as straightforward as the ecological, as the concepts at hand are not as mature as those in the environmental debate. Many different frameworks for understanding social progress and wellbeing exist, covering a range of theories on wellbeing, justice, equity and human needs. Prominent examples include the capability approach from Amartya Sen¹¹⁷ and Martha Nussbaum¹¹⁸ or the concept of needs and satisfiers from Manfred Max-Neef¹¹⁹.

Politically we draw on two main sources to derive a set of social indicators in Table 4.: The European Pillar of Social rights and the social Sustainable Development Goals. Only in a few exceptions do we add further indicators, especially to cover the “leave no one behind” principle. Thereby we refer to the recommendations on indicators by Öko-Institut and Tri-nomics which were commissioned by DG ENV¹²⁰.

4.1.2.1 The pillar of social rights and their integration with the SDGs

The Pillar of Social Rights that has been enforced at the Gothenburg Summit in 2017 and denotes the natural point of departure in our search for a selection of social indicators. The Pillar is about delivering on social rights by building on 20 key principles¹²¹ and steering Member State action towards three areas: equal opportunities and access to the labour market, fair working conditions, and social protection and inclusion¹²². In line with the recently published Porto Declaration¹²³, important steps for its implementation are outlined in the European Pillar of Social Rights Action Plan that also covers a list of headline targets¹²⁴.

These are:

- An employment rate of at least 78 % in the EU
- At least 60 % of adults attending training courses every year
- Reducing the number of people at risk of social exclusion or poverty by at least 15 million people, including 5 million children

The Action Plan highlights the relevance of these targets and the overarching principles of the Social Pillar for the recovery from the COVID-19 crises: targets should “guide policy decisions in the Member States and their regions, including in the context of National Recovery and Resilience Plans under the Recovery and Resilience Facility (RRF)”. The three targets that are consistent with and represent a subset of the 20 principles that are covered by the Social Pillar are: equal opportunities, fair working conditions, and social protection and inclusion. To measure progress against these principles, the Commission published the Social Scoreboard in 2017¹²⁵, which provides a time-series for a set of headline and sub-indicators across the three dimensions¹²⁶.

In parallel, the SDGs are another important framework to inform the selection of the social objectives. The EU SDG indicator set builds on key indicators from high-level scoreboards of EU policies. For example, 9 of 14 headline indicators and 8 supplementary social scoreboard indicators are also used for EU SDG monitoring¹²⁷. These capture SDGs 1, 3, 4, 5, 8 and 10. In 2020 the Commission announced it would fully integrate the SDGs into the EU Semester¹²⁸. While this momentum has lost traction due to the pandemic¹²⁹, the 2020 Country-Specific Reports from the European Semester also capture the SDGs represented by the Social Scoreboard¹³⁰. The links are captured in Table 5.

To represent the core topics of the Social Scoreboard and cover SDGs 1, 3, 4, 5, 8 and 10, we chose the indicators presented in Table 5 and Table 6 for the beyond GDP dashboard. This selection also depended on the availability of available targets. The area of the Social Scoreboard (SS) that is reflected by the indicator is presented in the third column.

Area of the Social Scoreboard	Respective SDG
Equal Opportunities (EO)	SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all SDG 5: Achieve gender equality and empower all women and girls SDG 10: Reduce inequality within and among countries
Fair Working Conditions (FW)	SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Social Protection and Inclusion (SP)	SDG 1: End poverty in all its forms everywhere SDG 3: Ensure healthy lives and promote well-being for all at all ages

Table 5: Areas of the Social Scoreboard and their relation to the SDGs according to the EU Semester Country Reports of 2020

Label	Indicator name	Consistent with					
		PS	SS	SDG	SDG ^{EU}	EGD JT	RD
Income & work 1	Employment rate age group 20–64 as a share of total population	X	FW	8	8		X
Income & work 2	People at risk of poverty or social exclusion	X	SP	1	1		X
Education 1	Tertiary education attainment as share of population aged 25–34		EO	4	4		
Education 2	Share of adults participating in training annually	X	EO	4	4		X
Health	Self-reported unmet needs for health care (total per MS)		SP	3	~		X
Gender equality	Gender employment gap	X	EO	5	5		X
Digital skills	Individuals who have basic or above average digital skills		EO	4	4		~
Food	Inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day			2		X	
Housing cost	Housing cost overburden rate by income quintile (first quintile)		SP	1,11		X	
Mobility	Unmet needs for mobility (placeholder)			11		X	
Community	Persons who have someone to discuss personal matters			11			
Leisure	Long working hours in main job			8			
Political voice	Voter turnout			16			

PS: Porto Summit; **SS:** Social Scoreboard; **SDG:** Related Sustainable Development Goals; **SDG^{EU}:** Coherent with EU SDG indicator; **EGD JT:** Just Transition; **FW:** Fair working conditions (Social Scoreboard); **EO:** Equal Opportunities (Social Scoreboard); **SP:** Social Protection (Social Scoreboard); ~: very similar indicator

Table 6: Selected indicators and labels for the social foundation from the Social Scoreboard, the SDGs and other sources

Equal opportunities of the Social Scoreboard are represented by three indicators. Education is represented through two indicators to ensure people have access to equitable and quality education through all stages of life: “share of adults participating in training annually” measures the share of people aged 25 to 64 who stated that they received formal or non-formal education and training in the 12 months preceding the survey¹³¹. “Tertiary education attainment as share of students” represents full- and part-time students in public and private establishments in school-based general education and vocational education/training¹³². Moreover, having equal opportunities through the lens of gender equality in mind, we looked at SDG 5, “achieve gender equality and empower all women and girls”, which is reflected in the indicator “gender employment gap,” defined as the difference between the employment rates of men and women aged 20–64¹³³. In this selection, an indicator for inequality (SDG 10) is not included, as this will be covered through one of the economic indicators (see chapter 4.1.3).

Fair working conditions that follow SDG 8 are reflected in the indicator “employment rate”. The rate is defined as percentage of employed persons in the age of 20 to 64 who worked at least one hour for pay or profit during the reference week or were temporarily absent from such¹³⁴.

The third area is Social Protection and Inclusion which links to SDG 1. “People at risk of poverty or social exclusion” is the indicator chosen here that corresponds to the sum of persons who are, for example, at risk of poverty after social transfers or severely materially deprived or living in households with very low work intensity¹³⁵. Moreover, the issue is represented through the indicator “self-reported unmet needs for health care” (SDG 3). This metric is defined as the total self-reported unmet need for medical care due to financial barriers, waiting times or too large of distance to travel¹³⁶.

While the Social Scoreboard covers important social objectives, several important aspects of well-being are lacking here when compared to the list of socially-relevant SDGs. These are, in particular, SDG 2 (no hunger), SDG 7 (affordable and clean en-

ergy), SDG 11 (sustainable cities and communities) and SDG 16 (peace and justice). As part of the SDG monitoring, Eurostat provides data for all these indicators¹³⁷.

Despite the environmental and social relevance of SDG 2 (no hunger), Eurostat mainly monitors economic and environmental aspects of hunger. Thus, we have added the social indicator “inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day”¹³⁸. This indicator would enable tracking progress against SDG 2, zero hunger.

The access to energy (SDG 7) is captured by two indicators. The indicator “people at risk of poverty or social exclusion” includes “arrears on utility bills” as one element indicating severe material deprivation and the “housing cost overburden rate” is based on the total housing of which the utility bills are an element.

In contrast to Eurostat, we interpret the social importance of cities and communities slightly differently. The Eurostat indicators for SDG 11 (cities and communities) measure the quality of living conditions and living environment. We focus our monitoring on the strength of social networks through the indicator “persons who have someone to discuss personal matters”. The OECD considers that relationships are an important factor for the quality of life¹³⁹. In 2018, 75 million¹⁴⁰ people in Europe felt socially isolated. In fact, loneliness and the importance of social relationships have become even more visible throughout the pandemic¹⁴¹.

For measuring SDG 16 (peace, justice and strong institutions) we have selected the indicator “voter turnout” rather than one of the Eurostat indicators. Voter turnout is defined as the total number of votes cast (valid or invalid) in executive power elections (presidential or parliamentary) based on the type of government in the country¹⁴². In terms of sustainability, it is important that citizens feel that they can have an impact on their society for them to feel represented¹⁴³. We assume voter turnout is a good proxy for measuring the overall agreement and trust in a political system, similar to the indicator “population with confidence in EU institutions” that is used by Eurostat and DG COMM. As we aim to develop dashboards for

each Member State, the Eurostat indicator lacks the Member State perspective. If needed, this indicator could also easily be replaced with other indicators from the EU's SDG monitoring dashboard.

Looking at the overall selection of indicators from the SDGs and the Social Scoreboard in Table 6, two important aspects are missing. First, important essential needs are not covered, namely the affordability of mobility and housing. Both play a particular role for implementing the “leave no one behind” principle of the European Green Deal. Statistics on household expenditure in the EU show that housing and transport are the two largest expenses, representing 23.5% and 13.1% of total household expenditure respectively¹⁴⁴. This highlights the importance of these two social aspects. While we need to switch to a greener economy with a larger share of renewables in our energy consumption for transport and utilities and more energy efficient buildings, this needs to come with affordable prices for the transition to be just.

For mobility, there is a lack of data that represent unmet needs for mobility in a similar vein as the indicator “self-reported unmet needs for health care”. However, there exists a best practice example in Sweden where data on “self-reported impairment, self-reported barriers to the use of public transport, and self-reported experience of avoiding public transport (bus, rail)” was collected¹⁴⁵. This is why we include a placeholder indicator here.

For housing we selected the indicator “housing cost overburden rate by income quintile”. This indicator is calculated by observing the share of the population living in households for which the total housing cost represents more than 40% of the total household disposable income¹⁴⁶. The housing cost overburden has also been applied by DG EMPL in their Employment and Social Development Report 2019 that highlighted some of the hotspot areas from the green transition on fairness¹⁴⁷.

Second, while the employment indicators give a strong indication on the level of employment, the

quality of employment is not captured. We address this through the indicator “long working hours in main job”, defined as percentage of employed persons usually working 49 hours or more per week. Working time can have a number of implications on quality of employment. First, earnings are understood in relation to the time spent at work, and excessively long working hours and atypical working time patterns often adversely affect the physical and mental well-being of the worker. An out-of-balance time allocation for work and non-working life can have a negative impact on well-being^{148 149}. Due to the threshold for working hours counted as “long” at 49 hours, the target value for the indicator is reasonably zero, which makes it a suitable candidate for our dashboard. In addition, this indicator also captures the work-life balance, a concern that is of high importance across Europe, with a fifth of Europeans saying they are not satisfied with their own work-life balance in 2018¹⁵⁰. The OECD identifies that by potentially decreasing the amount of leisure, long working hours can affect well-being^v. While this selection is subjective, other options could be, for example, “precarious working conditions” or “employees by flexibility of their working schedule”. Further options can be found in the “quality of life” indicator set published by Eurostat¹⁵¹.

In summary, our selection provides a consistent narrative of what social progress means for Europe. With a few exceptions, our selection thus represents a summary of the SDGs and the Social Scoreboard. Some of the indicators also overlap with the Resilience Dashboard, as Table 6 demonstrates. In line with the Social Pillar, social progress implies that all Europeans have equal opportunities to participate in prosperity and to adapt to the changing demands of a green economy. They should also have the opportunity to apply their skills and creativity in their profession. Their standard of living should be at least high enough that they are not afraid of poverty, nor of losing access to essential basic goods such as energy, housing, water, mobility, and food. However, beyond material security and for the benefit of psychological resilience and health, a stable social base is needed, which involves time for and access to social relationships, as well as a health system that meets people's needs.

^v The OECD identifies that by potentially decreasing the amount of leisure, long working hours can affect wellbeing.

4.1.3 Policy levers and economic enablers for a resilient economy

As an operationalisation of social and ecological objectives alone is not sufficient for the framework to be applicable to economic policy and DGs such as ECFIN or GROW, we complement the original Doughnut framework with additional indicators to capture both potential areas for investments and the characteristics of a resilient economy^{vi}. They aim to provide substance to what Kate Raworth defines as the “regenerative and distributive economy” – a term that strongly resonates with the narrative of a “regenerative economy” used by the European Commission.

4.1.3.1 Intervention areas and policy levers

The first part of the indicator set draws from both the enabling framework in 8th EAP¹⁵² and the objective to reduce environmental pressures. In addition, these indicators also capture the EGD priorities which represent important policy levers for transformative change such as in the areas of mobility, food, housing, energy and industry as well as the enabling conditions of the EGD “financing the transition”.

For clean energy we chose the indicator “share of renewables in final energy consumption”. Unfortunately, data for the “share of renewables in primary

Label	Indicator name	Resilience enhancement feature	Consistent with					
			8 th EAP	EGD	ES	SDG	SDG ^{EU}	RD
Renewable energy	Share of renewables in final energy consumption	Ability to transform	Reducing environmental and climate pressure	Clean energy	X	7	7	X
Public Transport	Share of busses and trains in total passenger transport	Ability to transform	Reducing environmental and climate pressure, living well within climate boundaries – regenerative economy	Sustainable mobility		11	11	X
Circular economy	Circular material use rate	Ability to transform	Reducing environmental and climate pressure	Circular industry		12	12	X
Organic agriculture	Area under organic farming	Ability to transform	Reducing environmental and climate pressure, living well within climate boundaries – regenerative economy	Farm to fork		2	2	X
Phase out of harmful subsidies	Fossil fuel support as a share of GDP	Ability to transform	Enabling framework, Living well within climate boundaries – regenerative economy	Financing the transition	X	12		X

8th EAP: 8th Environmental Action Programme; SDG: Sustainable Development Goals; SDG^{EU}: EU-relevant SDG; RD: Resilience Dashboards ES: European Semester Green Scoreboard (unpublished)

Table 7: Indicators measuring investment areas and policy levers

^{vi} These indicators build on previous recommendations on the measurement of the resilience dashboard: <https://zoe-institut.de/en/publication/3636/>

total energy consumption” – which would be more comprehensive – was not available. The latter would also capture energy use for mobility, housing, industrial processes and agriculture compared to electrical energy only.

For mobility we opted for an indicator that measures the importance of public transport. This selection excludes other important kinds of transport, e.g., electric cars or freight transport. However, we think that the share of public transport fits better to the need of a transformation of provisioning systems (transformation) rather than only a change in technology (adaption). As such, it is better suited to represent the idea of a resilient economy (see chapter 4.1.3.2).

The circularity of the economy is measured through the circular material use rate. This indicator is calculated by dividing circular use material by the total material use. The total material use is the sum of the total domestic material consumption and the circular material use. The circular use of materials is the amount of material recycled domestically minus the material imported for recycling plus the waste that is exported for recycling abroad. An increase in circular material use rate represents an increase in the substitution of primary materials by secondary materials¹⁵³. While the material footprint is focused on the emissions linked to the lifecycle of materials, this indicator captures instead the aspects of circularity or reuse of materials. It is an important indicator to monitor the progress towards a circular industry. An increase in circular use rate will usually translate to the decrease of the material footprint and GHG emissions in general.

To include the food system, we use the indicator “area under organic farming”. This indicator is calculated as the share of the area under organic farming out of the total utilised agriculture area. Both the area currently under organic farming and being converted to organic farming are considered in the area under organic farming¹⁵⁴. It reduces or even avoids the use of chemicals from fertiliser, pesticides, use of antibiotics for livestock and losses of nutrients. It therefore can improve the Gross Nutrient Balance of agricultural soils. This indicator can monitor progress of the Zero Pollution and Farm to Fork strategy.

In addition to these sectoral indicators that paint a picture of what kind of economy the EU is moving towards, we chose one indicator that relates to public finance: harmful subsidies. “Fossil fuel support” can be either a direct transfer or a tax expenditure from a government to fossil fuel consumers, services or producers and it is calculated as a share of GDP¹⁵⁵. Fossil fuels are “coal, petroleum, natural gas, oil shales, bitumens, tar sands, and heavy oils”¹⁵⁶. It is necessary to bring the support to fossil fuels to an end in order to reach the 2030 climate objectives; the energy use contributes to 75 % of man-made GHG emissions¹⁵⁷. Therefore, halting subsidies to the fossil fuel industry would impact production and consumption of fossil fuels and consequently reduce GHG emissions. Public finances are an important lever to steer and promote a green transition¹⁵⁸. Alternative candidates for this indicator can be found in the unpublished draft of the green scoreboard for the EU semester and the SDGs, as for example “the share of environmental taxes”.

These indicators are all related to a specific EGD objective and are consistent with the 8th EAP and the resilience dashboards. All except harmful subsidies are covered by the EU SDGs. This highlights the importance of those indicators as policy levers for change.

4.1.3.2 Measuring progress towards a resilient economy

To be relevant in the context of the Recovery and Resilience Facility, the second part of the set of indicators provides our understanding of the characteristics of a resilient economy. As such, the metrics capture important aspects of the resilience dashboards but also of the Green Scoreboard, which the Commission plans to incorporate into the European Semester.

In line with the Strategic Foresight report 2020 we define resilience as “the ability not only to withstand and cope with challenges, but also to transform in a sustainable, fair and democratic manner”¹⁵⁹. Most conceptual literature considers a variety of capacities necessary to prove resilient. Roughly, it can be differ-

entiated between three main capacities, namely absorption, adaptation and transformation¹⁶⁰.

The literature also presents a variety of *resilience enhancement features*¹⁶¹ that can ensure these resilience capacities. Important features include¹⁶²:

1. *storage capacities and buffers*
2. *the substitutability* of inputs (e. g., switch from coal to renewables) that is determined through:
 - a. the dependency of the economy on certain inputs measured through the *degree of concentration* (e. g., many trade partners to provide access to grain or only one trade partner)
 - b. *creativity and innovation* to make use of a different set of inputs to ensure an economic outcome (e. g., use renewables rather than fossil fuels to drive a car)
3. *the ability to transform* how the economy ensures certain societal outcomes (e. g., fulfil the need for mobility) by incorporating new ways for provision (e. g., use car sharing rather than individual transport for travel).

The adaptability of the economy through a high degree of creativity as well as technological and social innovations is measured through two indicators, both of which also relate to the EGD objective “research and innovation”. First, “R&D investments” captures the degree of creativity of the economy. Both the green transition and the provision of physical infrastructure, social infrastructure and productive facilities require continuous investments. A target of 3 % of GDP has been set for R&D expenditure. The “eco-innovation index” as part of the proposal for the Green Scoreboard of the EU Semester has some overlaps with the R&D indicator. The “eco-innovation index” is a composite indicator made up of 16 indicators, and is calculated as the unweighted average of those indicators. These 16 indicators cover four themes which include eco-innovation inputs, activities, outputs, socio-economic outcomes and resource efficiency outcomes. Nevertheless, in contrast to R&D investments it observes the quality of the investments rather than the quantity.

The second resilience enhancement feature of adaptability – that is, degree of concentration – is represented by three economic indicators: the Economic Complexity Index, the labour / profit share, and trade partner concentration.

Label	Indicator name	Resilience enhancement feature	Consistent with				
			8 th EAP	SDG	SDG ^{EU}	RD	EGD IN
Innovation 1	Eco-innovation index	Creativity	Enabling framework		9		X
Innovation 2	Research and development expenditure (% of GDP)	Creativity	Enabling framework	9	9	X	X
Production diversity	Economic Complexity Index	Degree of concentration	~ Living well within climate boundaries – regenerative economy		9		
Power balance	Labour income share as a percent of GDP	Degree of concentration			10		
Trade independence	Trade Partner Concentration Index (HHI)	Degree of concentration	~ Living well within climate boundaries – regenerative economy		9		

8th EAP: 8th Environmental Action Programme; SDG: Sustainable Development Goals; SDG^{EU}: EU-relevant SDG; RD: Resilience Dashboards; EGD IN: Innovation

Table 8: Indicators for monitoring a resilient economy

The “Economic Complexity Index” (ECI) is used here as a proxy for the degree of concentration of the production structure. As such, it stands for the adaptability of the economy. The index is calculated by Harvard Growth Lab to “assess the current state of a country’s productive knowledge”¹⁶³. The economic complexity “measures the knowledge of a society in terms of the products it makes”. It is calculated based on the diversity of a country’s exports and on how many countries can produce these exports. This is where the know-how is important. The ECI gives a score of each country based on their complexity. The higher the complexity is, the higher the score¹⁶⁴. Increasing complexity of Member States’ production structure increases their capability to produce things they have not produced before. This enables their economy to adapt more easily to mid- to long-term trends in changing demand patterns. Furthermore, the ECI captures aspects of international competitiveness that are important for any open economy to ensure material wealth generation and job security. As a metric for the diversity of the production structure, the index stands for qualitative aspects of competitiveness rather than price competitiveness¹⁶⁵. A downside to the ECI is that it can be quite complex to understand for a non-expert public affecting its credibility.

In a similar vein, the labour / profit share (also called wage share), is used to measure labour market concentration. The labour / profit share corresponds to the ratio between the income from labour and profits of GDP in nominal terms¹⁶⁶. Labour market concentration means that a small number of companies are dominating the hiring in a specific market¹⁶⁷. Moreover, studies have shown that in the UK, high labour market concentration levels have been linked with lower salaries and a decorrelation between wages and productivity. Research also shows a negative correlation between overall market concentration and labour share¹⁶⁸. In the US, a large drop in labour share has been seen in the markets where there has been a higher increase in concentration¹⁶⁹. The reason is that economic profits increase in more concentrated markets due to monopsony or monopoly power, which is reflected to a lower wage share. This is especially true for sectors without collective bargaining agreements¹⁷⁰. Consequently, the indicator also

stands for the degree of power imbalance between employers and employees.

In addition, the labour / profit share also captures issues of inequality. Known as the Bowley’s law, a stable share of labour income was considered a “stylised fact” of economic growth, with steep drops observed after the neoliberal reforms in the 1980s¹⁷¹. The wage share shows how the distribution of income changes over time, which is why it also stands at the core of Piketty’s “first law of capitalism”¹⁷².

The last indicator is the trade partner concentration, measured by the Herfindahl-Hirschman Index (HHI)¹⁷³. The HHI usually measures the degree of market concentration for a specific industry or sector¹⁷⁴. We used both import and export trade data to calculate the index based on the UN Comtrade Database¹⁷⁵. The indicator shows how concentrated the trade network of an economy is. A high degree of concentration (with 100 % as the highest possible value) comes with two downsides that make the economy overall less resilient. First, imports and exports of a country depend solely on this one partner. If the relationship breaks away all imports and exports are affected, which poses a high risk for maintaining the level of production. Second, the number of trade partners is politically relevant. The fewer actors a country depends on the more leverage these partners have in negotiations, which affects the degree of freedom the country has in its economic and trade policy.

We are aware that these indicators represent a quite substantial deviation from the indicators that are currently used in economic monitoring. While R&D and eco-innovation are indicators that are commonly used in different monitoring dashboards, most of these indicators would be new additions to the selection of economic indicators. However, the commitment to resilience rather than just economic growth is just as important a paradigm shift. To do justice to this ambition, new indicators are needed to describe the new course of action. With our reasoning and these prototypical ideas, we hope to have provided a first impetus that can enrich the discussion on the structure and composition of a resilient economy.

Label for dashboard ↗	Indicator name	Publisher	Target 2030 [unit]	Justification of target
Innovation 1	Eco-innovation index	Eco-Innovation Observatory (EIO), Eco-Innovation Scoreboard (Eco-IS) and the Eco-Innovation Index	154 [Score]	As there is no target from either the EU nor a scientific target, a target was set based on the average of the best 5 performers. The approach is described in Section 4.1.1.
Innovation 2	Research and development expenditure (% of GDP)	Eurostat (RD_E_GERDTOT)	3 [%]	The target for R&D of 3 % of GDP stems from the March 2002 Barcelona European Council and was initially for 2010. It was then reconducted in the Europe 2020 Strategy as an objective for 2020.
Production diversity	ECI index	Harvard Growth Lab	1.81 [unit]	As there is no target from either the EU or a scientific target, the threshold is defined as the average of the top 5 performers as per the approach described in Section 4.1.1.
Power balance	Labour income share as a percent of GDP	ILO	70 [%]	The Bowley's law which states that the wage share should be constant over time was believed to be a stylised fact of economic growth ¹⁷⁶ . The labour income share was about 70 % in 1970s, with a steep drop observed after the neoliberal reforms in the 1980s ¹⁷⁷ while the GDP per capita kept increasing ¹⁷⁸ .
Phase out of harmful subsidies	Fossil fuel support as a share of GDP	OECD	0 [%] by 2025	Annual reduction targets in Fossil Fuel subsidies. The EU Parliament and the Council of the EU support the proposal in the 8 th EAP of phasing out all direct and indirect fossil fuel subsidies by 31 December 2025 ¹⁷⁹ .
Trade partner diversity	Trade Partner Concentration Index (HHI)	UN Comtrade Database	22 [%]	As there is no target from either the EU or a scientific target, the threshold is calculated as the average of the top 5 performers accordingly with the approach described in Section 4.1.1. The EU Commission has defined guidelines for HHI on market concentration and mergers. They consider the risk low at below 31 % and begin considering the change in HHI when it reaches above 31 % and take even more considerations at above 44 % ¹⁸⁰ .
Renewable energy	Share of renewables in final energy consumption	Eurostat (NRG_IND_REN)	40 [%]	This target is derived from the European Energy Directive. The aim by the Renewable Energy Directive is to reach a share of 32 % of renewables by 2030 and the more recent aim from the Fit for 55 package is a more ambitious share of 40 %. The latter was selected for the EU since it is the most recent. Nevertheless, the MS have different targets based on the Renewable Energy Directive. An increase of the target has been proposed as part of the fit for 55 package, which we use here. Thereby the national targets on MS level have been adjusted, using the same proportion as in the European energy directive.
Public transport	Share of busses and trains in total passenger transport	Eurostat (TRAN_HV_PSMOD)	25 [%]	Increase public transport ridership by 25 % by 2030. Target is derived from Think2030 report by the IEEP ¹⁸¹ and informed by the non-binding targets of the Transport 2050 strategy "shift to rail the majority of long and medium distance passenger road transport" by 2050. There is no specific EU target but the current EU27 average is around 17 %.
Circular economy	Circular material use rate	Eurostat (cei_srm030)	24 [%]	The target from the new Circular Economy Action Plan is to double the circular material use rate by 2030. For the EU this means a 24 % target if we take 2019 as the base year. It is difficult to allocate this target to each member on a specific criteria and MS have already very different rates with some having already high rates. Therefore, it was decided to apply this target of 24 % to every MS.
Organic agriculture	Area under organic farming	Eurostat (SDG_02_40)	25 [%]	This target of 25 % of agricultural land under organic farming by 2030 comes from the EU Farm to Fork Strategy.

Table 9: Selected indicators and targets for a regenerative, distributive and resilient economy

4.2 Formal characteristics for a beyond GDP Doughnut

To be able to downscale the Doughnut to the EU, we first must understand some key technical characteristics of the Doughnut and their implications for the selection of indicators.

4.2.1 Defining targets, thresholds and boundaries

To develop a Doughnut, it is not sufficient to have only indicators; the Doughnut also requires targets. These targets are needed to define the “safe and just space” where the EU’s economy can thrive. In the case of the environment, the targets present *boundaries* that the EU should not overshoot. In the case of the social indicators, the targets can be interpreted as *thresholds*, where non-compliance leads to a shortfall. If the indicator value lies below the threshold, a shortfall occurs. For the policy levers and economic enablers, the target can either be a threshold or a boundary depending on the indicator.

We focused our selection of indicators on those (see Table 2, Table 4 and Table 9) where we can refer to existing EU targets for 2030. If targets are no longer up to date—as in the case of the EU2020 strategy

targets—we interpolate their value to 2030. 2030 is the timeframe set for all targets we have defined except for harmful subsidies where the target should be reached by 2025.

Where existing EU targets were missing, we prioritised indicators for which the target can reasonably be set to an absolute value (e.g., risk of poverty rate at zero) or – where possible – added scientific targets from the literature. Scientific targets for the global level were downscaled to the EU level using the population share in 2021 as an allocation key. The scientific targets should therefore be seen as ideal proposals that are not yet politically endorsed but rather can inform debates and need to be downscaled properly to 2030. In the case of greenhouse gas emissions, we added a scientific target for 2030 next to the politically agreed target. The scientific target also reflects global equity considerations (such as the fair-share of the EU’s carbon budget according to its population¹⁸²).

If this approach did not work, the target was set by taking the average of the top 5 best performers as was done to measure the progress of some SDG indicators in the Europe Sustainable Development Report¹⁸³. The targets are then used to calculate a normalised distance-to-target value for all MS. This process is shown in Figure 4. We then chose suitable labels to reflect the aspirations, which sometimes differ from the terms used in the indicator title.

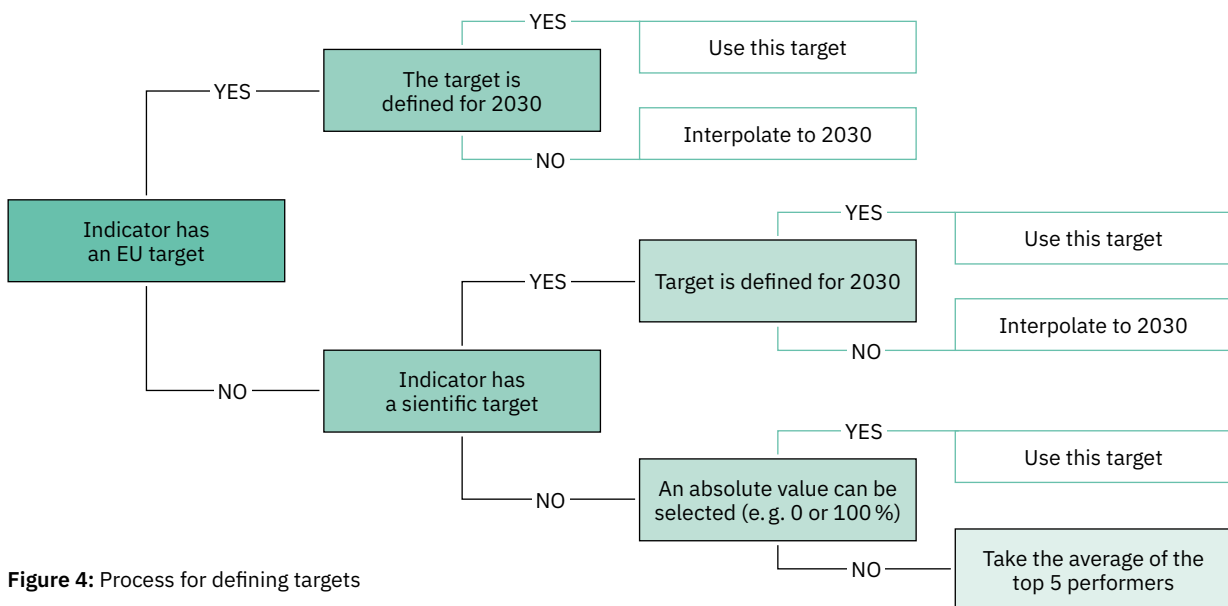


Figure 4: Process for defining targets

4.2.2 Harmonisation to enable comparison

In order to allow the comparison of indicators between countries and across the stages of their evolution, we needed to harmonise them. For the evolution of the indicators to be comparable across Member States, they need to be expressed in the same unit. Our approach builds on O'Neill et al.¹⁸⁴. For each indicator we calculate an Index Value (IV) which shows how far a Member State is away from its target for 2030. In other terms, it shows by how much it overshoots the boundary or falls short from the threshold associated to the indicators.

For the environmental indicators with a boundary, it is calculated as follows and can be interpreted as the factor of overshoot:

$$\text{Boundary indicators (e.g., environmental): } IV = \frac{x}{b}$$

Here, x is defined as the most recent value for a specific indicator provided by the data source and b is the boundary associated to this indicator. Values greater than 1 indicate overshoot and are visible, while values below 1 are not displayed in the figures. As this approach doesn't work for the indicator of excessive fertiliser use and harmful subsidies (target = 0), the IV is calculated differently as is described in the Annex. In this approach, there is no maximum value for the overshoot. That makes visualisation difficult, as the space for graphics is usually limited. Therefore, we cut off any overshoot at the value of 2.5.

Box 5: Example for calculating the environmental index values

Greece had a "Water exploitation index, plus" of 39.37% in 2017. The boundary we chose for this indicator is 10%. Therefore, we get: $IV = \frac{39.37}{10} = 3.937$. The index value indicates that the most recent "Water exploitation index, plus" of Greece is 3.937 times larger than the target it should achieve by 2030. Consequently, the whole area for the indicator is filled with colour showing that the maximum of 2.5 is reached, even if the actual overshoot is larger than 2.5 (see 5.3).

The social wedges in the doughnut visuals are clipped at the social threshold (i.e., zero), although the numerical values can be greater than zero. Similar to O'Neill et al., we normalise the social indicators. The worst-performing value equals -1 (wedge is displayed as fully yellow), while the threshold is assigned the value of 0 (wedge is not yellow). The reason for a negative IV of social indicators is that when a shortfall occurs, a wedge fills up toward the centre of the doughnut. This is the opposite of what happens with biophysical indicators. Thereby, $IV \geq 0$ indicates that $x \geq t$: the threshold is reached, and the indicator is within the safe and just space. In this case we set the indicator to 0. If $IV \leq 0$, a shortfall occurs.

$$\text{Threshold indicators: } IV = \frac{(x-t)}{t-x_{worst}}$$

The numerator is calculated in two ways. Where possible we calculated the numerator from the difference between the target and the worst possible share ($t-x_{worst}$, e.g., for the indicator "people who have someone to discuss personal matters", the worst case would be 0%). For all indicators except "gender equality", the worst possible share is 0%.

Box 6: Example for calculating the social index values

The most recent data on the "Share of population who have the ability to afford a proper meal every second day" in Denmark is 95.7%. The target for this indicator is 100%. The worst possible share is 0%. Thus, $r = 100 - 0 = 100$. This gives us an $IV = \frac{(100 - 95.7)}{100} = -0.043$. This means that Denmark is 4.3% away from its target for 2030.

5. Beyond GDP portraits for the EU and selected Member States

Using the methodology and reasoning outlined in chapter 4, we developed six exemplary portraits displaying the performance of the EU27 as well as five Member States for these indicators. We chose these countries (Italy, Greece, Poland, Denmark, and Romania) to demonstrate a variety of income levels and a geographical spread across the EU. We thereby limit ourselves to the description of the data, as a proper interpretation and assessment of the countries' portraits would go well beyond the scope of this report.

5.1 The EU 2030 portrait

The portrait in Figure 5 presents the EU's current progress towards the targets set for the indicators for 2030 and as such, the EU's performance towards reaching a **safe, resilient and just space**.

Any overshoot (yellow) above the ecological ceiling indicates a transgression of ecological targets for 2030. The maximum overshoot equals a factor of 2.5, indicating that the current status of the indicator value is 2.5 times higher than the target for 2030. The largest overshoots happen in the case of GHG emissions 1 & 2 and material footprint. The GHG emissions in 2019 have been reduced by 24% compared

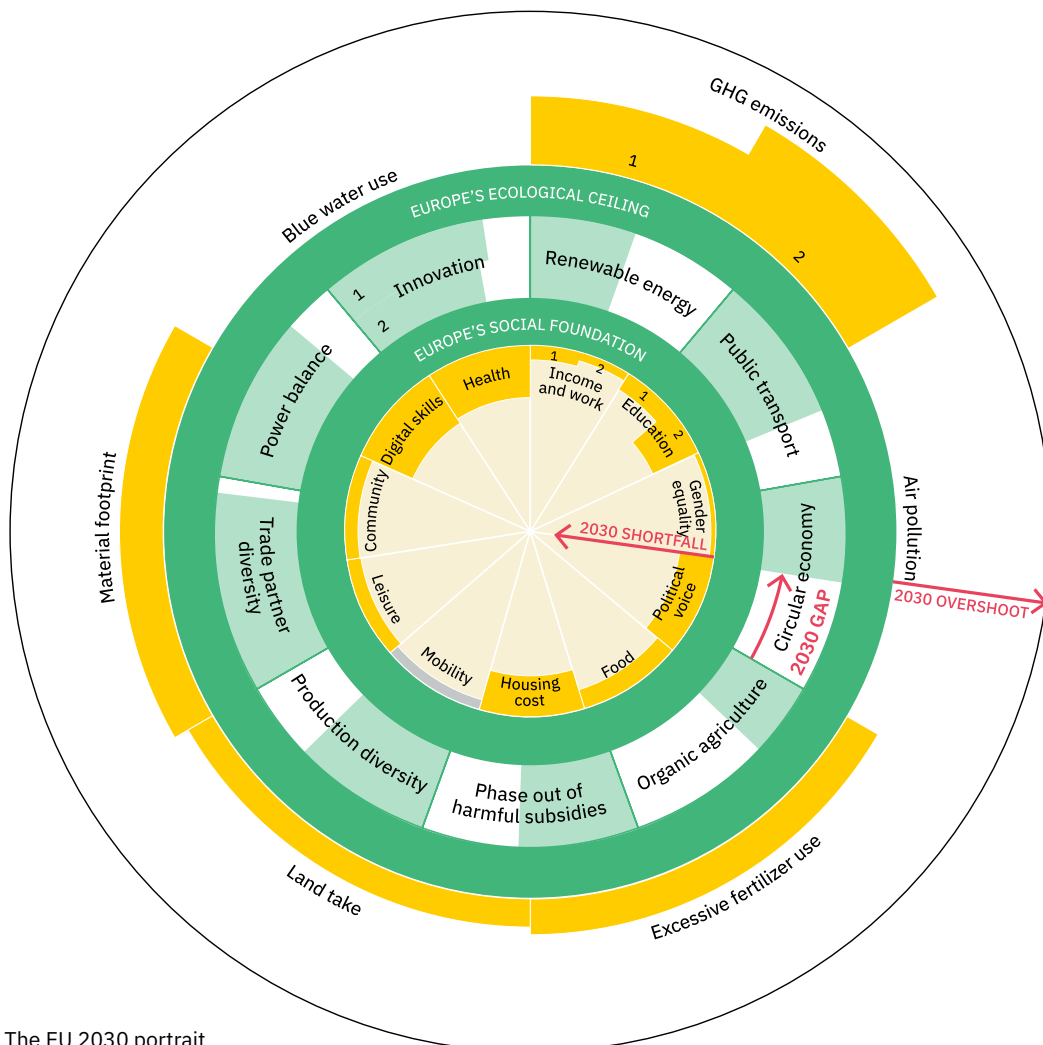


Figure 5: The EU 2030 portrait

to 1990. While this is a strong achievement it is still far from the ambition of the EU of 55 % reduction by 2030 which requires an additional reduction of 31 percentage points within a period of only 11 years (the reduction gap equals 39 percentage points if the EU would aspire to reach the fair share target). Moreover, given the strong dependence of the EU's material consumption not only within but especially outside the EU, the material footprint taking into account these resources embedded in trade corresponds to almost 3 times the target for 2030. For land take the target is overshoot by a factor of 1.3. Nevertheless, the EU has achieved a 26 % reduction in air pollution which is more than its target and faces low levels of water scarcity. However, this situation is different in single Member States as we will describe below.

The yellow wedges below the inner green ring (social foundation) indicate a shortfall regarding the EU's social objectives for 2030. The magnitude is indicated by the size of the yellow area. Shortfalls occur for all social indicators of the EU (except mobility which is highlighted in grey due to lack of data, see explanation in chapter 4.1.2.1). However, the magnitude of the shortfall varies from 3.1 to 30 percentage points beyond the 2030 target, the largest being health and digital skills. In 2014, more than 27 % of the population reported unmet needs for health care in the EU and in 2019 close to half of the population of the EU was still lacking basic or above average digital skills. While these are the highest shortfalls, other issues like 20 % of people at risk of poverty, or 32 % of people that are spending more than 40 % of income on housing, or 6 % of people not having someone to talk to about personal matters show that there is lot to do, both for ensuring material security and access to essential goods and services as well as community and social cohesion. As we will show in the next sections, each member state performs differently on each of these dimensions.

The interior "dough" of the Doughnut represents the policy levers and economic enablers. The more the slice is filled with green, the better the state of the indicator. If the entire slice is green, this indicates that the indicator's 2030 target is achieved. The top three with the biggest gaps are the circular economy, organic agriculture, the phase-out of harmful subsidies

and renewable energies. Only about 8 % of the agricultural land was under organic farming in 2019, this is 17 percentage points less than the EU target for 2030. Also, regarding the energy transition, the gap to achieve the 2030 target of 40 % becomes clearly visible: to date, renewable energy only accounted for 19.7 % of final energy consumption. The numbers are similar for the circular material use rate with a gap of 50.8 percentage points until the target for 2030. These numbers strongly underline the importance of the high ambitions of the European Green Deal and the contribution of the policy levers and economic enablers to close these gaps.

5.2 Italy 2030 portrait

Italy has its largest overshoots of planetary boundaries for GHG emissions and excessive fertiliser use, and also has a large overshoot for blue water use. According to the data from 2019, Italy would still need to decrease its GHG emissions by 38 percentage points to reach the EU target and by even 45 percentage points to reach the scientific target by 2030. Moreover, its level of blue water use indicates moderate water scarcity¹⁸⁵. On the other hand, it has achieved the targets for air pollution and land take.

Regarding the social foundations, Italy's shortfalls are larger than those of the EU. The largest shortfalls are for digital skills and health much like the EU, but

large shortfalls also occur for tertiary education attainment and adult training and housing cost. More than half of the Italian population did not have basic or above average digital skills in 2019. Moreover, 35% of the poorest quintile of the population suffered from an overburden of the housing cost (more than 40% of their total disposable income).

Finally, for the policy levers and economic enablers, Italy is the furthest away from its targets for phase-out of harmful subsidies, R&D investments, renewable energy and organic agriculture. Only 17% of the energy consumed in Italy came from renewable energy in 2019; their target requires a doubling of that number by 2030. They also need to double efforts on R&D to catch up with the EU's target of 3%.

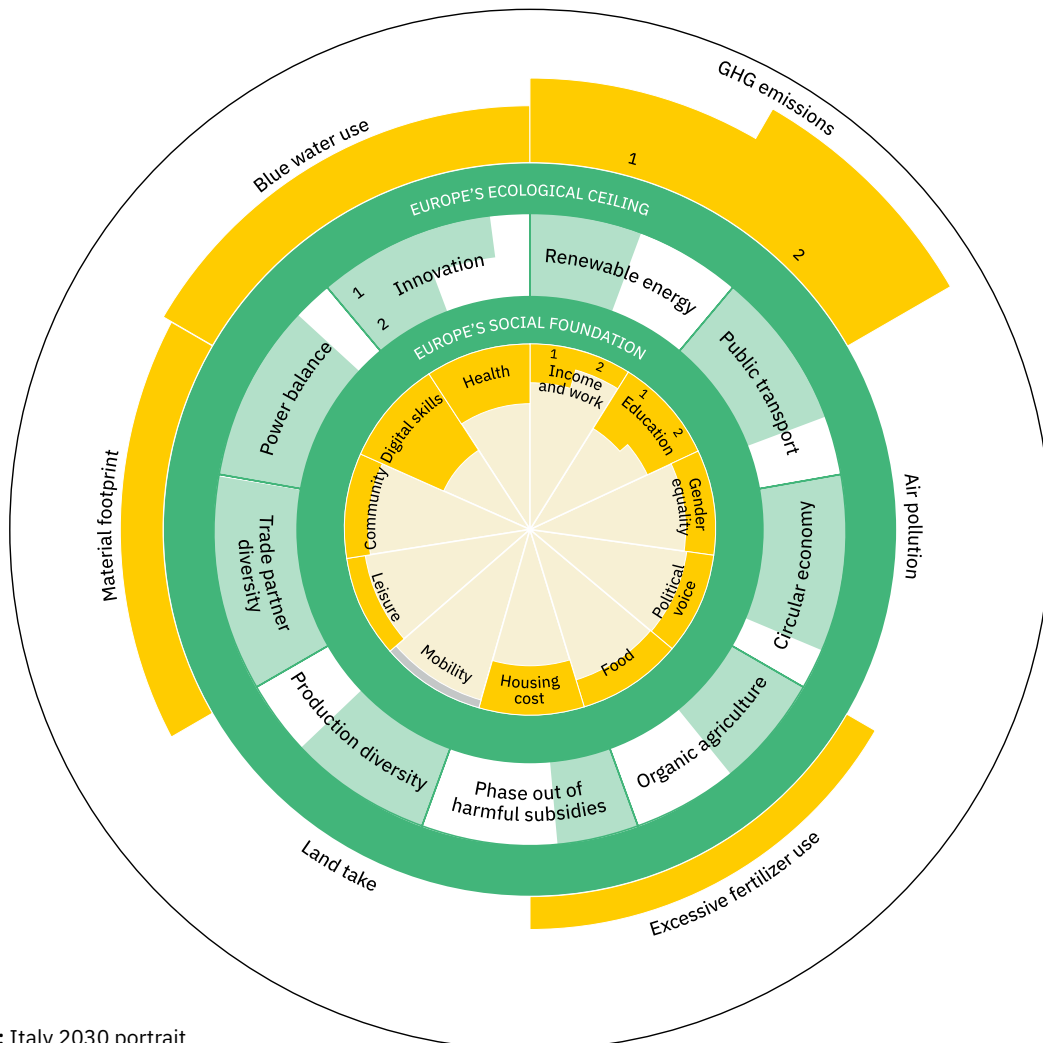


Figure 6: Italy 2030 portrait

5.3 Greece 2030 portrait

Greece has larger overshoots of planetary boundaries than the EU for all indicators and 2030 targets except for air pollution. Its overshoot for blue water use is the second largest in the EU behind Cyprus. The level of its “water exploitation index, plus” was very close to 40% in 2017, indicating severe water scarcity¹⁸⁶. Its material footprint overshoots the target by a factor of almost 2.

For the social foundations, Greece has smaller shortfalls for tertiary education (Education 1) and community than the EU. It is 2 percentage points away from the EU target on tertiary education and 96% of its

citizens have someone to discuss personal matters. Nevertheless, it has very large shortfalls for housing cost and adult training (Education 2). More than 85% of the population within the first income quintile suffered from an overburden of the housing cost in 2019 (see what housing cost overburden means in 4.1.2.1).

Regarding its policy levers, Greece is very far from the targets for circular economy, phase-out of harmful subsidies and production diversity. It had the largest amount of fossil fuel subsidies by percentage of GDP, the worst Economic Complexity Index score within the EU and a rate of material circularity of only around 3.2% in 2019. On the positive side, it has the best level in the EU in terms of trade independence.

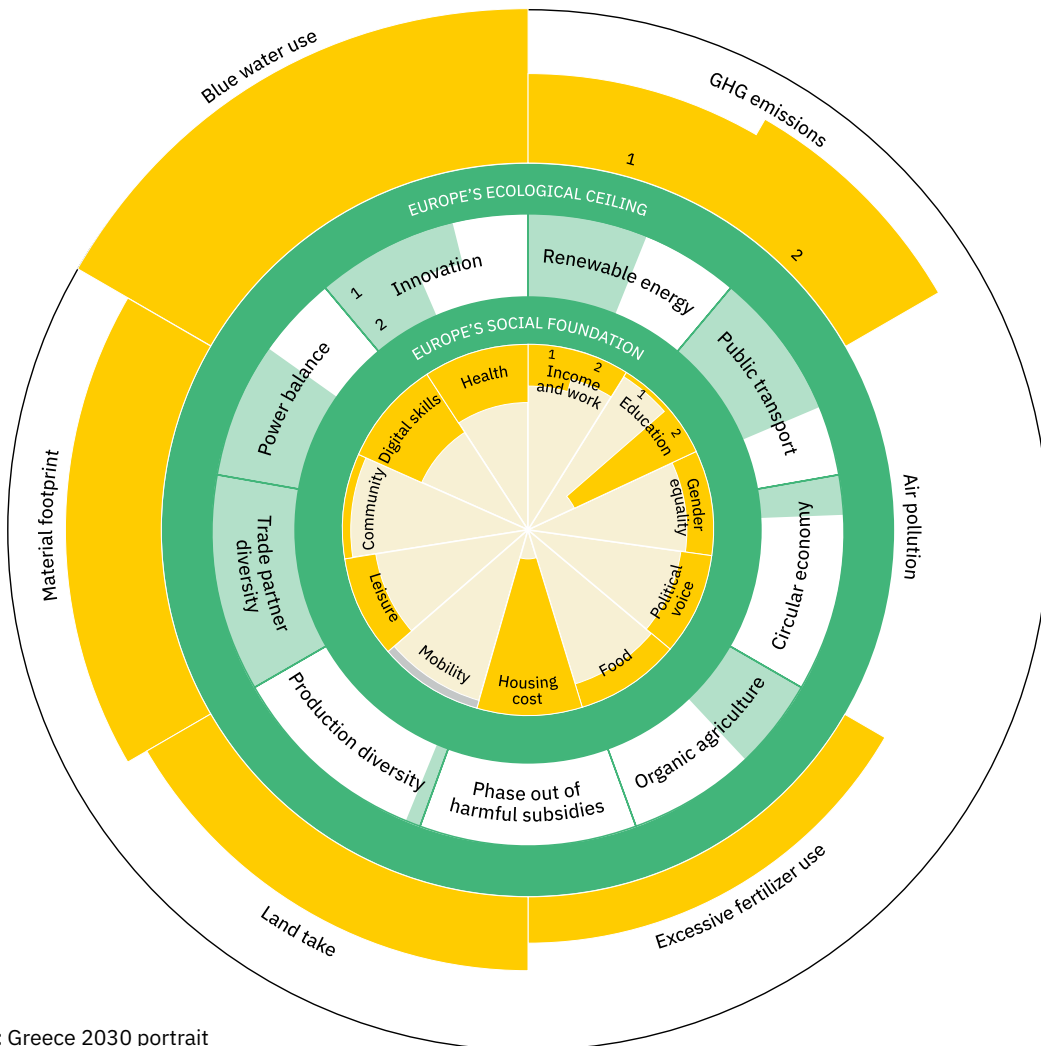


Figure 7: Greece 2030 portrait

5.4 Poland 2030 portrait

The doughnut of Poland has higher overshoots than the EU for material footprint, GHG emissions and land take. Regarding the fair share of GHG emissions and land take, the overshoot equals a factor of 2. Poland has also an overshoot for air pollution.

Its largest shortfalls for the social foundation are in adult training, digital skills, and health. 66 % of the population did not have basic or above average digital skills in 2019 and 32 % of the population reported unmet needs for health in 2014. However, it has al-

most achieved the target on “people at risk of poverty or social exclusion”; it is only 5 percentage points away from reaching the target.

In terms of policy levers and economic enablers, it lags especially far behind on the targets for organic agriculture, innovation 1 & 2, renewable energy, and circular economy. Only 8 % of its energy consumption came from renewable energy sources and organic agriculture covered only 3.5 % of its total agricultural land in 2019. It also had the second worst eco-innovation index in the EU and is almost 60 percentage points away from the target for this indicator.

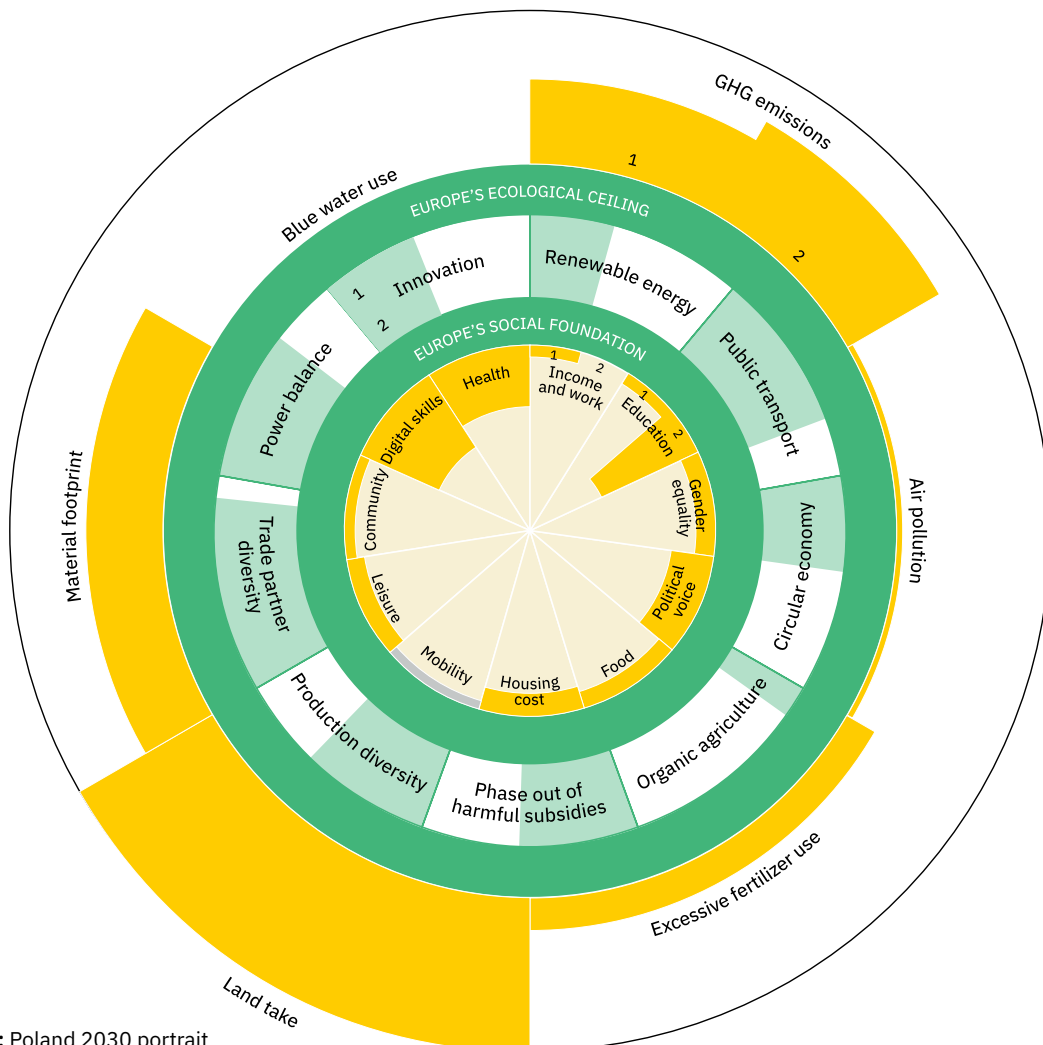


Figure 8: Poland 2030 portrait

5.5 Denmark 2030 portrait

While Denmark has already achieved two targets and is very close to achieving six others within the social foundation, it is only within one ecological boundary with material footprint, GHG emissions and excessive fertiliser use being far above the planetary boundaries. Its material footprint is 1.7 times larger than the target. Additionally, it has one of the largest overshoots on the nutritional balance in the EU and the 5th worst level of air pollution.

Denmark has already reached the EU target for tertiary education, has a high voter turnout around of 76 % (beyond threshold) and 96 % of its population

could afford a proper meal every two days in 2019. Additionally, it is already above 95 % in terms of people having someone to discuss personal matters and people having long hours in main job. Nevertheless, housing cost is an issue and it overburdened almost 60 % of the population within the poorest quintile in 2019.

Denmark is also rather close to achieving most of the targets that refer to policy levers and economic enablers, except that of circular economy and organic agriculture. It has the third highest level of eco-innovation in the EU and the third lowest level of fossil fuel subsidies.

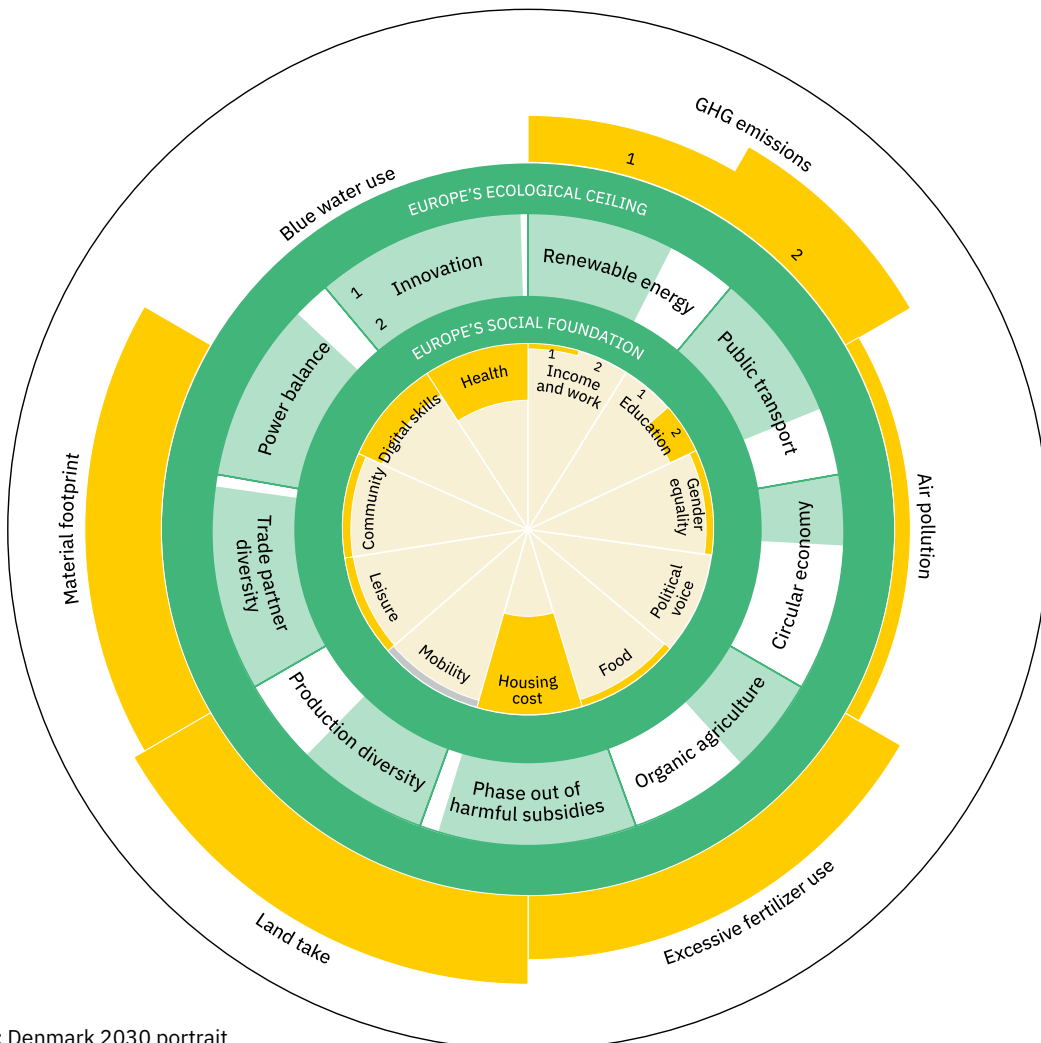


Figure 9: Denmark 2030 portrait

5.6 Romania 2030 portrait

Romania has a slightly opposite picture to Denmark. While it stays within most of the 2030 environmental targets, Romania has not achieved any of its social thresholds.

However, Romania still has one of the worst levels of air pollution in the EU; it still needs to decrease its air pollution by 20 percentage points. Furthermore, it overshoot the target for land take by a factor of 2.3. Looking at this from a time series perspective, the good performance on the GHG target results from the breakdown of the Soviet Union and the associated breakdown of industries.

In terms of social foundations, it especially falls short for tertiary education attainment, adult

training, political voice and digital skills. Only 26 % of the Romanian population aged between 25 and 34 years old had successfully completed their studies in 2020. 61 % of the population lack basic or average digital skills and Romania has the lowest voter turnout in the EU. However, Romania performs well on the issues of leisure and community, and only 2 % of the Romanian population worked more than 50 hours per week in 2019.

Additionally, Romania especially lags far behind in terms of the targets for circular economy with a rate of only 1.3 % and organic agriculture since only about 3 % of its agricultural land is covered by organic agriculture. It also has the lowest % of GDP invested in R&D in the EU. On the other hand, it has one of the highest shares of buses and trains in total passenger transport.

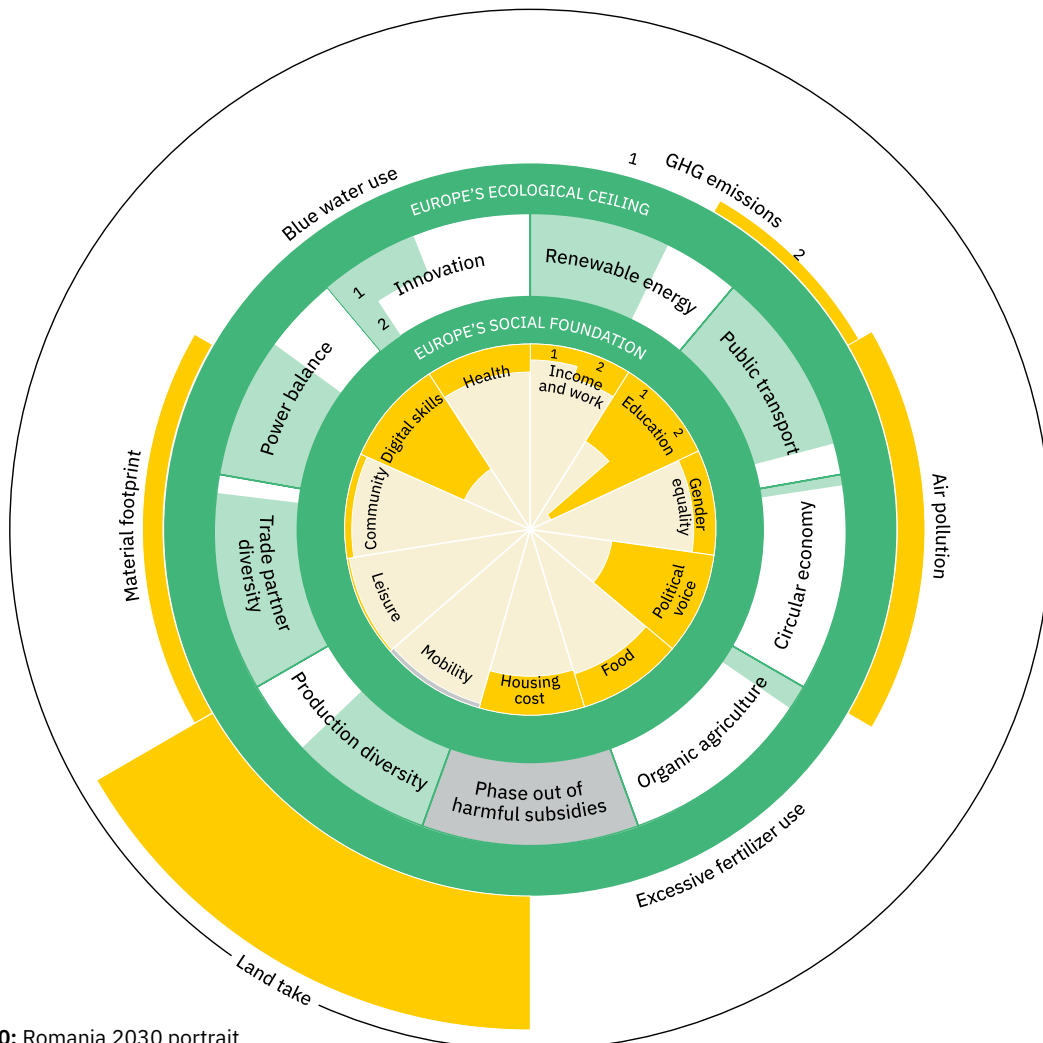


Figure 10: Romania 2030 portrait

5.7 Comparisons between Member States

In Figure 11 we present a graph for the performance of all Member States on the social, environmental and economic indicators. The y axis displays the number of boundaries transgressed and the x axis the number of thresholds transgressed. The size of the bubble represents the number of policy levers and enablers' targets which are not achieved (the number next to the country name indicates this number).

Figure 11 gives an indication of how far the countries are from the goal of reaching the social, environmental and economic targets for 2030. It shows that all countries are far away from their 2030 goals, which calls for ambitious and transformative action for the coming

decade and shows the scope of the challenge ahead. Sweden and the Netherlands are the closest to reaching the 2030 targets. Nevertheless, regarding the policy levers and economic enablers, both have only achieved one of the targets. On the other hand, Cyprus seems to be the country the furthest away from the safe, regenerative, and just space since it has transgressed all the planetary boundaries, has only achieved two social thresholds, and has not achieved any of the policy levers and economic enablers' thresholds. Estonia is the country which is transgressing the fewest environmental boundaries with only two of them transgressed while the Netherlands and Sweden are the countries with the most social thresholds achieved, and Germany has the most policy levers and enablers achieved with three total.

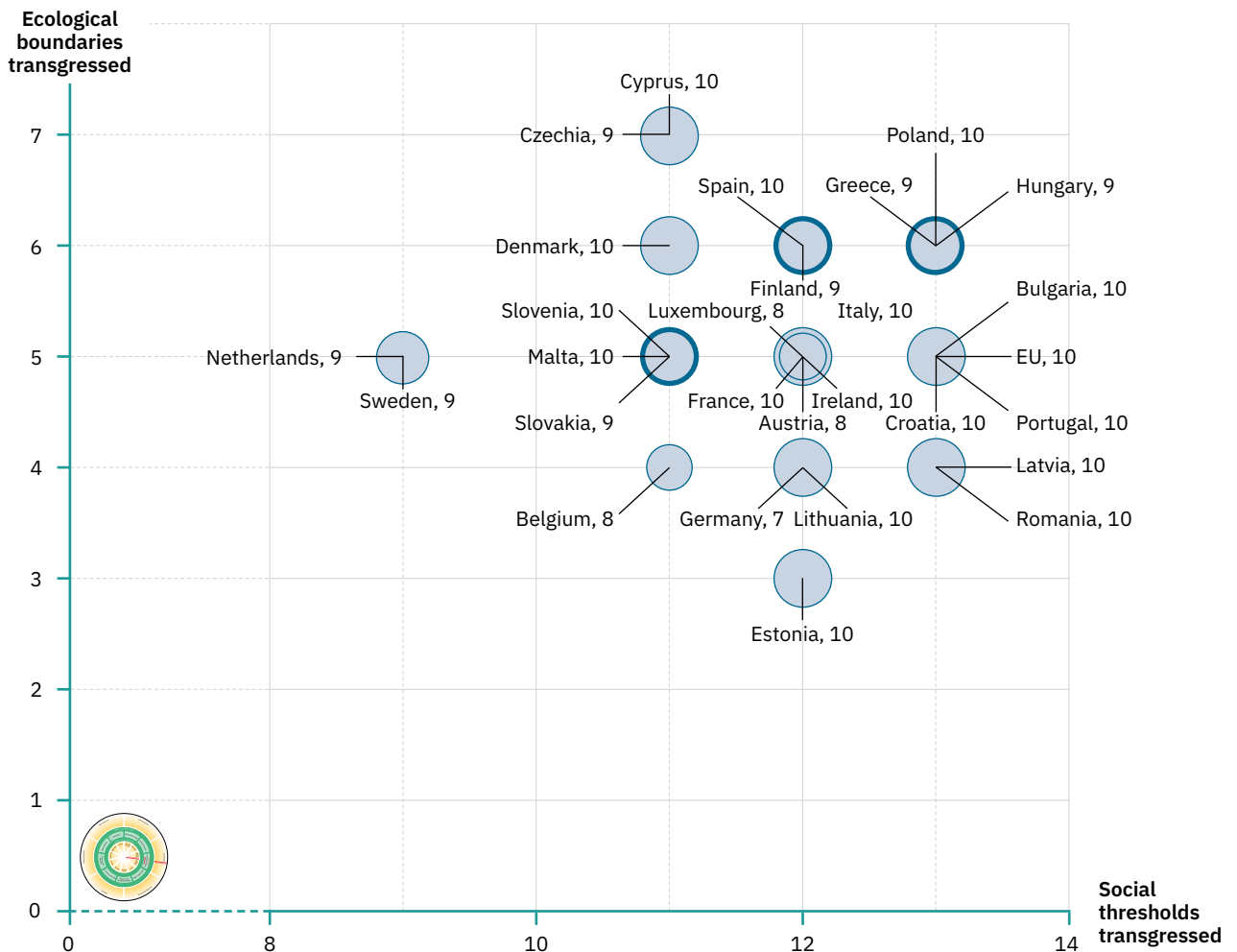


Figure 11: Boundaries transgressed and thresholds achieved for the EU and each Member State

6. Evaluation of the proposal against the design criteria

The aim of this report is to develop a proposal on how to develop a beyond GDP in a way that does justice to the systemic challenge of achieving the EU's 2030 objectives, and at the same time limits additional monitoring burden on the EU Commission and Member States. Combining headline indicators from different processes and policy areas in a beyond GDP dashboard would ensure the dashboard doesn't come with much additional effort for the EU Commission and Member States. It would avoid potential gaps and inconsistencies and simplify the reporting from Member States. By having them presented together, policymakers would be able to quickly grasp trends and support management of trade-offs and tensions between policy objectives. This proposal focuses on the transformative measures for economy and society, qualifying the resilient economy we need in the future, moving beyond GDP.

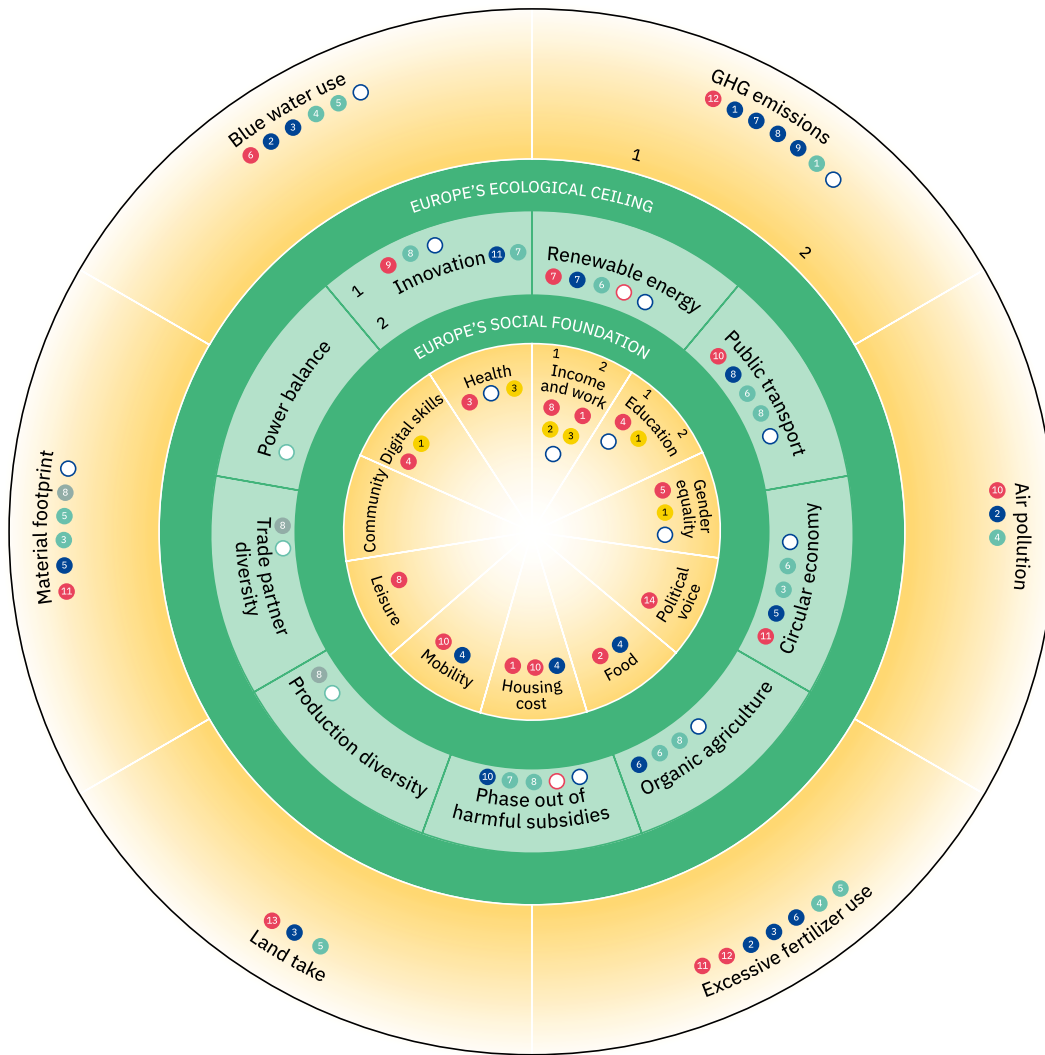
For the beyond GDP dashboard proposed in this report, we began choosing indicators which corresponded to political priorities of the EU. For environmental indicators, we chose at least one indicator for each EGD objectives (see chapter 4.1.1 for further explanation). Socio-economic and wellbeing aspects should be key elements of a beyond GDP dashboard, thus we added indicators covering the social and wellbeing aspects of the SDGs and the Porto Summit on the European Pillar of Social Rights (see chapter 4.1.2 for more detail). As explained in chapter 4.1.3, social and ecological objectives alone are not enough to meet the criteria of a systemic approach. As such, we developed a set of characteristics of a resilient economy to both inform the further development of the RRF and drive the selection of indicators.

How the indicators relate to existing political priorities and dashboards can be seen in Figure 12.

To limit the administrative burden, we see great potential in thinking about the beyond GDP dashboard not in isolation, but as an integration with the EGD dashboard. Thereby, the dashboard can add value by summarising the headline indicators and related tar-

gets of the 8th EAP, the relevant SDGs, the Social Pillar, the Resilience Dashboards and the European Semester. As explained in chapter 4, most of the indicators chosen are already suggested for the monitoring of those processes. As such, the indicators selected are all internationally recognised and consistent with the RACER criteria set by the Better Regulation guidelines.

The strength of our approach is that it fulfils all the criteria that have been formulated by members of the European Commission (see Table 10 that builds on the description of criteria in chapter 3.1).



Sustainable Development Goals

- 1 SDG 1: No poverty
- 2 SDG 2: No hunger
- 3 SDG 3: Good health and wellbeing
- 4 SDG 4: Quality education
- 5 SDG 5: Gender equality
- 6 SDG 6: Clean water and sanitation
- 7 SDG 7: Clean and affordable energy
- 8 SDG 8: Decent work and economic growth
- 9 SDG 9: Industry innovation and infrastructure
- 10 SDG 11: Sustainable cities and communities
- 11 SDG 12: Responsible consumption and production
- 12 SDG 13: Climate action
- 13 SDG 15: Life on land
- 14 SDG 16: Peace justice and strong institutions

European Green Deal

- 1 Climate Neutrality
- 2 Zero pollution
- 3 Nature protection
- 4 Just transition
- 5 Circular Industry
- 6 Farm to fork
- 7 Clean energy
- 8 Sustainable mobility
- 9 Energy-efficient building
- 10 Financing the transition
- 11 Innovation

8th EAP priorities

- 1 Climate mitigation
- 2 Climate adaptation
- 3 Circular economy
- 4 Zero pollution
- 5 Biodiversity
- 6 Reducing environmental and climate pressure
- 7 Enabling framework
- 8 Living well within climate boundaries – regenerative economy (● = 8th EAP: Similar priorities)

European Social Pillar of Human Rights

- 1 Equal opportunities
- 2 Fair working conditions
- 3 Social protection and inclusion

European Semester ○

Resilience Dashboards ○

New Indicators ○

Figure 12: The relation of indicators selected to the EU’s political priorities and dashboards

Criteria for a beyond GDP dashboard	How is the criterion fulfilled?
Consistent	The dashboard focuses on the existing political priorities of the Commission and incorporates the existing targets set at the EU level for 2030. 80 % of the indicators we have selected are relevant headline indicators from existing EU dashboards. In some exceptions, additional socio-economic indicators serve as a proposal to monitor a resilient economy.
Systemic	The dashboard is composed of 30 indicators in total, including 7 biophysical indicators, 13 socio-economic indicators and 10 policy levers and enablers. It includes indicators for the success of the "leave no one behind" pledge as well as sectoral changes through economic provisioning systems (e. g., mobility, agriculture, energy, circular material use). As such, the dashboard enables decisionmakers and the public to quickly grasp the EU's most important trends and identify important interconnections between policy objectives that need to be balanced.
Long term	Most indicators of the dashboard are already used to monitor EU policy objectives and targets towards 2030. Where needed the dashboard proposes ideal targets for the 2030 to fill gaps based on recent academic literature to encourage EU policy-makers to agree on EU targets, e. g., material footprint, phasing out energy-related environmental harmful subsidies.
Transformative	The dashboard brings together a sectoral and economic angle on economic progress with an assessment of both environmental and social outcomes. As such, it points at the <i>core priorities to accelerate</i> the transition towards a resilient and regenerative wellbeing economy.
Impact focused	The dashboard focuses on <i>measuring the impacts and outcomes of policies needed to reach social, economic and environmental targets for 2030 rather than the policy outputs.</i>
Up to date	All indicators used in the dashboard are recognised as some of the most advanced indicators and are collected by internationally-renowned institutions such as Eurostat, ILO, OECD, European Institute for Gender Equality, The International Institute for Democracy and Electoral Assistance, Eco-Innovation Observatory, and the Harvard Growth Lab.
Easy to understand	Through using a distance-to-target approach, relying on indicators whose interpretation is straightforward, and applying the Doughnut Economics framework, the dashboard becomes easy to understand and accessible for a non-expert public, the EU and its MS.

Table 10: The evaluation of the proposal against the design criteria for a beyond GDP dashboard

7. Discussion

In this report, ZOE proposes a beyond GDP dashboard based on the Doughnut Economics framework that meets seven criteria that are fundamental to make it politically successful. This dashboard should be consistent with existing dashboards, systemic, long term, transformative, impact-focused, up to date and easy to understand.

7.1 The choice of indicators

We are conscious that every selection of indicators has its strengths and weaknesses. It is important to note that there were many possible indicators that would encompass the different topics of the dashboards available. As such, many of the indicators discussed could be easily replaced by others. There was also a difficulty of prioritising between indicators as we wanted to keep the total number of indicators selected at maximum of 30, while ensuring that we covered all relevant political topics. Compared to the 8th EAP, this beyond GDP dashboard includes only selected headline indicators for the different environmental objectives^{vii} and extends the scope to social and economic indicators with a holistic approach. Compared to the Resilience Dashboards, the beyond GDP dashboard focuses on the policy impacts of the green transformation as opposed to focusing on capabilities to deal with change and vulnerabilities towards shocks.

It was challenging to select only one to two indicators for each of the existing social, economic and environmental policy objectives and processes. We acknowledge that in some cases we had to make difficult choices and that some alternative indicators could have found a place in our dashboard, or that some are missing. For example, for addressing the drivers of climate change like unsustainable mobility, energy and food systems, our indicators capture the role of public transport or renewable energies. However, there are missing drivers to climate

change, which are not encompassed by this indicator such as freight transport or technologies used for heating and cooling. As another example, we use the indicator “net land take” for monitoring the preservation of ecosystems through protection. Other possible indicators are those under the biodiversity objective in the 8th EAP monitoring framework like the “common birds index”¹⁸⁷. Also issues of intersectionality, as covered in the recent multidimensional inequality monitoring framework, are missing in our presentation as it would have been difficult to stay within the upper limit of indicators.

Furthermore, in some cases there is still a lack of data to directly capture the relevant policy outcome at hand. One example is “access to transport” where we are lacking data. We considered using “transport expenses as share of total expenditure”. However, the indicator has its weakness as the indicator value will decrease when carbon pricing leads to an increase of expenses on carbon-intensive transport options. Furthermore, the indicator doesn’t provide information whether other transport options are available that can substitute carbon-intensive transport. In addition, higher prices might also be seen as positive when they incentivise a reduction in the need for transport, e.g., through teleworking. However, these contextual factors are not taken into account.

Our recommendation is therefore to develop a new indicator “self-reported unmet needs for transport” in a similar manner as “self-reported unmet needs for health care”, as such an indicator would be about access to transport while considering different preferences and context. Another simpler option could be to disaggregate transport expenses by income groups and especially consider the changes for low-income groups as these are the most affected.

In some cases, our selection is also based on proxies for the objective at hand. One example is the labour share indicator as a proxy for market concentration. A more straightforward approach to measuring market concentration across different sectors could be done by the Herfindahl-Hirschman Index (HHI) for

^{vii} At the time of this report, the proposal for the headline indicators for the 8th EAP is still being discussed with Member States and stakeholders.

Europe¹⁸⁸. However, while the underlying data to calculate this index exists¹⁸⁹, to date, none of the established statistical institutions provide a standardised set of data for different countries and sectors. Therefore, we chose to use the data on labour shares from the ILO.

cial transformation and social and environmental goals (such as the SDGs and Paris agreement). However, 2050 was also a potential choice as the EU has already set some targets for 2050, such as climate neutrality¹⁹².

7.2 The choice of targets

In addition to the choice of indicators, we had to select suitable targets for 2030. Defining targets in a political context is always very sensitive. We defined them here based on existing targets, existing legislation and scientific evidence wherever possible.

However, in many cases, targets could also have been defined differently, taking into account important aspects of global justice in a different manner. The global dimension is important to understand as the behaviour in the EU has implications elsewhere through the strong interconnectedness of the EU's value chains with the rest of the world. For example, there are different options to consider how costs and budgets (such as the carbon budget) are globally shared between countries. While we included a "fair share" target for carbon emissions, we could also factor in the different vulnerabilities, historical responsibilities and capacities for adaptation of different countries. In such a case, a carbon budget for the EU would require a much faster reduction speed, if budgets are allocated according to the population size. For limiting global warming to 1.75°C, with a 67% probability of reaching the target, the global CO₂ budget amounts to 800 Gt CO₂ from 2018¹⁹⁰. According to these calculations, a fair share for Europe by on a per capita basis would be 6% (if the global CO₂ budget is distributed proportionally based on 2014 emission levels and without taking historical emissions into account, the share would be 11%). This implies that the reduction pathway of the EU must be much steeper, as stressed by various organisations. It should be around -62% by 2030¹⁹¹.

Another issue is related to the timeframe for which those targets should be defined. In our case, we chose to set targets for 2030, as this is a year that already has a lot of political attention related to so-

8. Conclusion and recommendations

The main objective of this report is to evaluate the suitability of the Doughnut Economics framework to monitor and visualise the priorities at the EU level in a consistent way. As we are selecting a short list of 30 indicators for which EU data is already collected, our approach positions our proposal well within the list of existing EU policy dashboards. The proposed summary of statistics would help minimise efforts by the EU Commission, avoid gaps and inconsistencies in monitoring and simplify Member States' reporting. As such, our proposal reflects the systemic nature of a beyond GDP approach and replaces need for an additional dashboard for the European Green Deal. While adjustments are possible in various directions, it became clear that a beyond GDP Doughnut is an effective approach which will address all the expectations put forth by Commission members for an overarching dashboard.

There is political momentum for policymakers to have a political summary of existing dashboards which can quickly grasp the EU's most important trends and identify important tensions between policy objectives that need to be balanced. Institutions need to consider necessary adjustments to better reflect the needs and evolution of our society in a post-Covid world. The major economic changes that underpin the transition to climate neutrality and economic resilience require the support of the European public. This calls for clear targets for 2030 and clear communication with strong visualisation of the state of the EU towards their achievement.

An overarching beyond GDP dashboard will not weaken the existing dashboards. On the contrary, it will make them stronger and more relevant, because it will help create the consistent narrative and common vision that is necessary to policymakers to navigate the systemic changes that Europe is undergoing. The indicator set can serve as a portal to solve the dashboard conundrum, highlighting the state of key EU headline indicators and inviting readers to investigate the more specific dashboards for more details on specific policy areas and governance processes.

From our deep analysis of dashboards and thorough selection of indicators, we have developed a set of **6 concrete recommendations** for the EU Commission, the EU Member States and the EU Parliament to consider:

- 1. Summarise indicators from existing dashboards into a condensed beyond GDP dashboard** and discuss whether this can replace the need for a European Green Deal dashboard.
- 2. Use headline indicators from existing dashboards in a consistent way.** Particular dashboards to consider are the European Green Deal monitoring framework, the 8th EAP monitoring framework, the Social Scoreboard, the Resilience Dashboards, the beyond GDP indicators in the EU Semester and Recovery and Resilience Facility, and the Sustainable Development Goals.
- 3. Use a distance-to-target approach for monitoring to improve understandability.** "Distance to targets" or gaps are a promising approach for policy as they contain both what should be reached and the state of the reality and help frame the discussion on the costs and means of "bridging the gap".
- 4. Use the Doughnut Economics framework as a powerful tool to inspire the visualisation of progress on the targets for 2030 for Member States and broader society and adapt it to the EU's political priorities.** The Doughnut makes it easy for policymakers to grasp the state of important headline indicators and identify important tensions between political objectives that need to be balanced.
- 5. Further promote the institutionalisation of environmental and social indicators throughout the Commission and Member States.** First, by continuing the efforts to integrate the SDGs into the European Semester and further promoting the development of a Green Semester Scoreboard as proposed by ECFIN. Second, by updating current indicators where necessary and increasing their timeliness to track the EU's

objectives. Many of the indicators needed to monitor some of the most recent priorities of the EU are not published on an annual basis. Increasing the frequency of publication can strengthen the institutional uptake of these indicators. Third, the relevance of social and environmental indicators can be mainstreamed through the whole policy design process, e.g., through further advancing impact assessment methodologies in the Better Regulation Guidelines, mainstreaming the system of environmental accounts, progressing on a system of social accounts and developing quantitative models for projecting the development of key social and environmental indicators.

- 6. Develop new indicators for measuring some of the priorities of the EGD and the leave-no-one behind principle as well as economic resilience (adaptability, transformability).** Our analysis shows that some EU priorities, especially the leave-no-one behind principle and the road to a resilient economy, are lacking suitable metrics to monitor progress. We see the need to develop additional indicators for measuring access to essential goods such as food, mobility and housing, and the degree of concentration of the economy (e.g., power concentration, market concentration, trade partner concentration).

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