

# THINK 2030

Science-policy  
solutions for a more  
sustainable Europe

November 2018

## 30x30 Actions for a Sustainable Europe #Think2030 Action Plan

By David Baldock and Céline Charveriat



**Convened by:**



**In collaboration with:**



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## Executive summary

After more than half a century of peace and rising living standards, Europe's current economic, political and social model is heading for a crisis. Europe's economy is failing to eliminate poverty, provide employment for all and address rising inequalities. These failures are both fuelling existential doubts about the future of the European project as well as calls for taking back control of national destinies. Meanwhile, the message from scientists is unequivocal: the high-carbon, resource and energy intensive nature of Europe's growth is unsustainable. It is also creating a persistently toxic environment, leading to premature deaths: for instance, life expectancy in Europe's 25 most polluted cities could increase by almost 2 years, if air pollution was adequately addressed. In a context of a rising global population and accelerating environmental degradation, the intensifying competition over natural resources is also becoming a major threat to Europe's peace and security.

In 2019, the European Heads of State, together with the next European Parliament and Commission, have a unique opportunity to turn Europe's destiny around and meet citizens' increasing alarm about climate change by defining a new, coherent strategy for the EU based on a shared vision for well-being, prosperity, peace and security and protection of nature. This vision must be translated into a new over-arching post-2020 strategy for the EU, in line with the UN Sustainable Development Goals and long-term goals to 2050. It should be supported by a set of science-based quantified targets to 2030 and by policies fully integrating the environmental, social and economic and security dimensions of sustainability. It must include urgent short-term actions, map out the transition required and allow Europe to assert much needed leadership on an increasingly fractured world stage.

### PROSPERITY 2030

**The EU needs to adopt a transition framework for the coming decades, reaching deep into economic goals and production systems. High level measures should include:**

1. **A clean macro-economic, monetary and growth framework** supporting decarbonisation, greater resilience to economic shocks and natural disasters as well as mobilizing public and private investments necessary for the ecological transition.
2. **A coherent mid-century decarbonisation strategy**, aimed at achieving net zero emissions before 2050, taking the urgent early steps needed to put us on track for that objective, and supported by **sectoral industrial strategies** and a **carbon floor price**.
3. **A comprehensive European policy for sustainable consumption**, covering nutrition, mobility, housing and lifestyles, as a complement to the current circular economy package, and aiming at an 80% reduction in per capita material footprint by 2050.
4. Greater use of targeted economic instruments such as green **taxation and public procurement policies** at all levels of governance to shift individual and collective behaviours.

5. An accelerated implementation of the **sustainable finance action plan**, in order to reorient capital flows towards a more sustainable economy.
6. **Increased support for eco-innovation**, starting with a more ambitious **eco-design directive** and supported by mission-oriented goals and adequate instruments within Horizon Europe.
7. A new generation of waste prevention targets within the **circular economy package and the plastic strategy** based on an absolute reduction in annual waste.
8. **A new approach to Europe's food systems** (both production and consumption) ensuring coherence with relevant EU strategies (such as those on decarbonisation) and supporting farmers through results-based payments combined with support for knowledge transfer and innovation.

## WELLBEING 2030

**The social dimensions of Europe's environmental policy must be recognized as central to delivering a legitimate sustainability transition. Critical measures at the EU level should include:**

9. **Design a comprehensive environmental health strategy**, providing a coherent framework for addressing public health threats linked most urgently with air pollution, which disproportionately harms the life chances of poorer communities, and supported by **new regulations for chemicals and medicines**.
10. Strengthen the **European Social Pillar of Rights to support a Just Transition**, through a range of social interventions needed to secure jobs and livelihoods covering all potentially affected sectors, communities and regions.
11. Integrate sustainability considerations in the reforms of **income and wealth taxation and social protection** systems, which will be necessary to address rising inequalities and demographic changes.
12. Build the resilience of cities, rural communities and the wider environment through **more effective adaptation strategies** and action plans to address climate change.
13. Ensure the adequate representation of the interests of both youth and future generations, by establishing **an EU Guardian for future generations**.
14. **Close the knowledge gaps** regarding the connections between poverty, multidimensional inequality (generation, geography, gender, race, income) and sustainability in Europe through research and funding for socially innovative projects.

## NATURE 2030

**The EU and its Member States need to work together to halt the deterioration of Europe's natural capital, embark on an ambitious and credible restoration pathway:**

15. **Adopt an ambitious EU biodiversity 2030 strategy, with smarter targets**, specifying how biodiversity will be valued, further loss halted and large scale restoration achieved as well as a **binding global agreement on biodiversity conservation**, equivalent to the Paris climate agreement.
16. **A new Value Based approach to the ocean**, addressing both the needs of different stakeholders and the array of policies which have a bearing on the marine environment.
17. **A sustainable bioeconomy strategy**, ensuring that the transition from fossil to bio-based resources remains within the scale compatible with SDGs and planetary boundaries.
18. **A fresh review of the challenge of improving soil management** in Europe, exploring the option of a common policy.
19. An increased focus across the Member States on **implementing their Water Framework Directive commitments** more fully and rapidly and stimulating **more investment in water conservation**.

## PEACE AND SECURITY 2030

**To protect global peace and security, Europe needs to support a worldwide transition towards greater sustainability through the following means:**

20. **Adopt a comprehensive horizon scanning and early warning system for environmental and climate change risks** for Europe's neighbourhood and other regions of strategic interest.
21. **Broaden the scope and increase the ambition of European climate diplomacy** to include other major interrelated environmental risks, for instance by strengthening the focus on water issues.
22. **Adopt specific initiatives to improve the awareness and capacity of the EU and Member States' military forces** regarding the role of climate and environment in conflict prevention and resolution.
23. Use the EU's trade policy to push for **harmonized and ambitious environmental standards worldwide** and **cooperation agreements around low-carbon and other environmentally friendly technologies**.
24. **Carry out an assessment of the EU's performance and also sharpen the targeting of EU external assistance** vis-à-vis delivery of SDG implementation in third countries, whilst addressing the negative spill-over effects of its own economic model.

## GOVERNANCE 2030

**Achieving the transition will require major changes to Europe's current governance system:**

25. **Align the EU's budgetary resources to sustainability** through tighter environmental conditionalities on the use of European funds, greater alignment of the Multiannual Financial Framework to National Energy and Climate Plans, and measurable targets for the environmental outcomes of each programme.
26. **Include all levels of government** in the design, implementation and monitoring phases of Europe's new sustainability agenda, and ensure local areas that want to make faster progress are encouraged to do so.
27. **Establish a European Panel for Sustainability (EPS)** as an independent, high-level scientific multidisciplinary body, based on the IPCC model, reporting to the European Council, to provide guidance and monitor progress.
28. Tackle gaps in the implementation of legislation and in accountability through more effective use of **Member State and European enforcement mechanisms** and a more systematically facilitated public **access to environmental justice**.
29. **Incentivize businesses to go beyond compliance**, thanks to a **new sustainability certification scheme for European companies** aligned with SDGs, independently verified and based on best available environmental footprint methodologies.
30. **Utilise Europe's semester process** to increase momentum, coherence and transparency in the transition integrating well-being metrics into the process.



## Foreword

*“Since 1992, with the exception of stabilizing the stratospheric ozone layer, humanity has failed to make sufficient progress in generally solving (...) environmental challenges, and alarmingly, most of them are getting far worse... Soon it will be too late to shift course away from our failing trajectory, and time is running out. We must recognize, in our day-to-day lives and in our governing institutions, that Earth with all its life is our only home.” Letter signed by 15,364 scientists from 184 countries (2017).<sup>1</sup>*

Open letter after open letter, scientists are warning us that we are running out of time: the more we wait, the more likely it is that damage will become irreversible. The more we procrastinate, the more painful will be the decisions we have to make. What is at stake is simply the capacity for humanity to thrive and live in peace.

Three years ago, the European Union and its Member States, alongside other countries of the world, took a bold step. They committed to transform radically the way we work, move, eat and consume goods and services by 2030 and to leave no one behind. In policy time, 2030 is tomorrow: with only 4000 days left to turn the entire economy and society around, decisive leadership is needed now.

In spite of its many achievements, the European continent has a tough road ahead to achieve sustainable development. We would need almost three earths to support the global economy if European consumption patterns were replicated throughout the planet.<sup>2</sup>

The European project is facing an existential crisis. Diverging views among member states, together with increasing political polarisation within many of them, are increasingly paralyzing progress, creating a temptation to “take back control” at the national level. While still supportive of the European project, most European citizens believe the European Union is largely irrelevant to their daily reality. In fact, 64% believe their lives would be the same without the EU.<sup>3</sup>

With elections around the corner, it will be tempting to focus debates on more or less Europe and to propose quick fixes to citizens’ calls for greater security, prosperity and democracy. For parliamentary candidates, parties and European officials, focusing on sustainability will feel like discussing fire prevention when your own house is burning down around you. Yet it has never been so urgent for Europe to take a long-term view. In the words of the Great Law of the Iroquois Confederacy, “In every deliberation, we must consider the impact of our decisions on the next seven generations”.

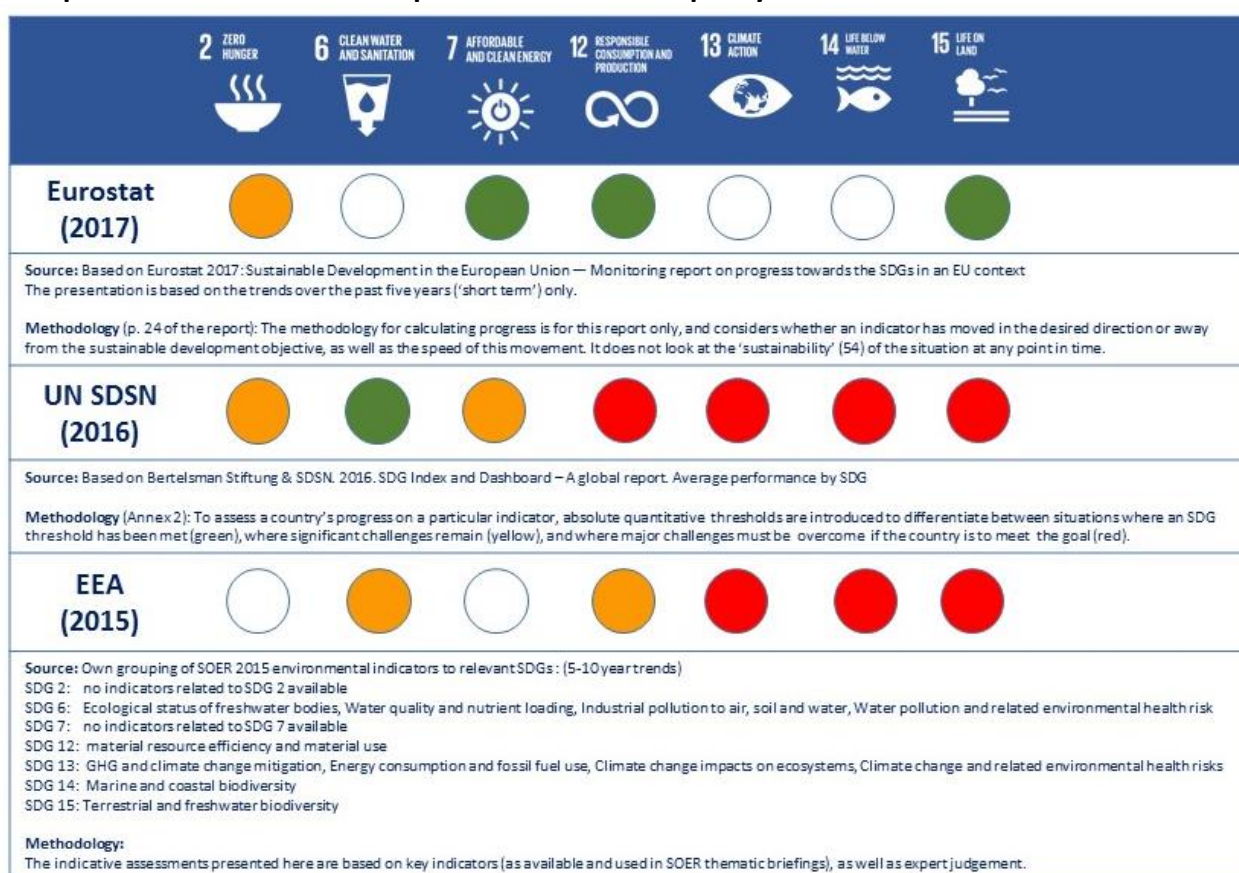
In 2030, our children and grandchildren will be in their prime, trying to lead peaceful and meaningful lives. The question which should inspire all of us is what world we want to create for them. This report, based on a series of papers and exchanges among more than a hundred European leading experts from civil society, the private sector and public institutions, is aimed at those decision-makers which will be bold and visionary enough to face Europe’s sustainability challenge and leave a legacy of prosperity, well-being, peace and security. It includes 30 concrete proposals for action by 2030, which, if enacted by the next European Parliament and Council, could chart Europe and the world on a safer course.

# 1 Introduction

The 7<sup>th</sup> European Environmental Action Plan (EAP), adopted in 2013, set an inspiring vision: *“In 2050, we live well, within the planet’s ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society’s resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society.”*

However, evidence to date suggests that Europe is not on track to reach the objectives of the 7<sup>th</sup> EAP or the SDGs.

**Graphic 1: Scoreboard of European environmental policy vis-à-vis selected SDGs**



This explains the growing consensus among scientists and experts on the need for systemic change—in Europe and globally—as the current generation of policies reaches its limits. More ambition and new types of intervention and initiative are required to meet the targets now emerging for 2030 and 2050 beyond that. No surprise that the Commission’s DG RTD frames its future programme, Horizon Europe, in terms of supporting multiple transitions. So does the European Environment Agency (EEA) in terms of its forthcoming State and Outlook of European Environment Report (SOER).<sup>4</sup>

The Think 2030 exercise and the papers within it are offered as a contribution to adopting a transition approach based on a refreshed ambition in the next phase of EU policy following the elections and institutional changes due in 2019. This synthesis draws on a set of 15 individual papers on key thematic topics for 2030 commissioned from think tanks in 2018 and circulated for comments amongst experts and interested stakeholders.

It aims at putting them in a wider context and at expanding some major themes and priorities. On this foundation it draws some wider policy conclusions, considering both the EU's internal policies and its role on the global stage. Finally, it offers some thoughts about the role of the European Parliament in engaging both its members and voters in building a shared vision and a sense of ownership in taking this seminal agenda forward.

## 2 Post-2020 planning: governance 2030

Europe's 2020 strategy and the 7<sup>th</sup> Environmental Action Plan were conceived before the SDGs, the Paris agreement and before some of the recent advances in scientific understanding of planetary boundaries, and of the scale of interconnected challenges to come. In light of the severity and urgency of risk identified by experts around the world, a new approach is now needed.

There is a growing sense that the time has come to move forward, underlined by the growing public concern about the pressures on the oceans, especially from plastics and the expanding interest in sustainable food and dietary change. There may be more political space than seemed possible only two years ago. In Eurobarometer's latest survey, 35% of European citizens indicated that they wanted for the upcoming European elections to include debates around climate change and the environment.<sup>5</sup> Other key stakeholders, such as CEOs, sustainability analysts and policy makers attending the World Economic Forum put environmental challenges very high in terms of their analysis of global risk.<sup>6</sup>

Within this context, Europe faces a number of challenges, which will impact on well-being, nature, prosperity and security, and therefore on its ability to achieve the SDGs. This requires a new model, with a stronger global framing, and more holistic understanding of the interplay between different social, economic, cultural and technical dynamics. This places "nature" and the environment alongside prosperity, security and well-being as aspirations that are interlocking and need to be addressed together. This framework is captured in Figure 1.



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# MOVING FORWARD: FRAMING THE POST-2020 EUROPEAN AGENDA

#Think2030



Despite their different foci, six common themes are emerging from the thematic Think2030 papers regarding how Europe should move forward.

**Think2050:** Europe's future planning should be framed over a 2050 horizon and governance needs to be conceived as enabling multiple transitions at the scale and speed required. This approach, already adopted in the context of climate change and planning decarbonisation pathways, needs to be applied in other areas, for instance in the circular economy.

**Adopt science-based targets:** There is need for science-based targets, addressing all planetary boundaries, with supporting policies and sectoral strategies. Long-term targets risk a lack of attention to short-term action as having a '2050' time horizon can give a false sense of having time. Credible pathways are required, as well as flexibility to revisit and recalibrate approaches or objectives. This needs back-casting, rapid feedback loops between science and targets which allows ratcheting—either because technology is allowing for more rapid change or because progress on quantifying planetary boundaries or new findings regarding interaction between different phenomena warrants a new approach. Important questions must be asked regarding the appropriate horizon for the post 2020 strategy and its linkages with budgetary and electoral cycles.

**Towards a European Sustainability Panel (EPS)?** Adopting science-based targets assumes a much stronger science-policy interface process than what currently exists. Indeed, an effective science-policy interface should include horizon scanning and foresight, address short-term expertise needs, provide consolidated views from science, identify policy-relevant knowledge needs and priorities to inform EU and Member States' research strategies and communicate to inform public debate on complex issues.<sup>7</sup> It might be time for Europe to build on the success of the IPCC model and establish a similar multidisciplinary body, dedicated to Europe, encompassing all SDGs, whose independence would be guaranteed by adequate statutes and resources, and whose report would be formally adopted by the European Council to ensure necessary political buy-in.

**Close the gap:** It is high time to find new solutions to the implementation gap of existing European policies in the environmental field and the related accountability gap arising from failures in delivery. The better regulation agenda has not necessarily led to more effective environmental policy, in terms of increasing the likelihood of reaching impacts aligned with what science requires. Given the scale and complexity of the challenge, the engagement of local authorities, including municipalities, regions and macro-regions needs to deepen alongside the established relationship between the EU institutions and the Member States.

**Greater engagement:** Businesses need to be incentivized to go beyond compliance, by for instance reforming EMAS to become an independent performance-based verification mechanism for businesses' environmental footprint and by forging on with Europe's sustainability finance action plan. Exploring how best to ensuring improved access to environmental justice is also essential. To this effect, a Europe wide review of compliance with the relevant EU law,<sup>1</sup> Aarhus Convention<sup>11</sup> access to justice provisions, and the pertinent European Court of Justice case law is required.

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<sup>1</sup> Directives 2003/4 and 2003/35 contain provisions on access to justice in environmental matters.

<sup>11</sup> UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice on Environmental Matters.

<http://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf>

**Reinventing the policy tool box:** given the scale and the interconnectedness of the challenges, a new tool box and new decision-making process might be required.<sup>8</sup> Examples include a much more proactive use of economic instruments, such as taxation, as well as new approaches to governance which effectively break siloes, building upon the experience of those member states which have set up effective mechanisms for policy coherence for sustainable development.<sup>9</sup> Aligning the better regulation agenda to SDGs would contribute to improved regulatory efficiency but also contribute to greater coherence of Europe's agenda.<sup>10</sup> In light of new developments of the CAP, it is essential to ensure that the new focus on subsidiarity and performance-based approaches actually leads to the impact we need, at the scale and the speed required.

**Act 2020:** In light of the scale of the change needed and the time it takes for policy decisions to be fully implemented, most papers call for a renewed sense of urgency, not only on climate change, but also on a number of other issues, such as biodiversity, food or soils.

## Recommendations for governance 2030

**Achieving the transition will require major changes to Europe's current governance system:**

- **Include all levels of government** in the design, implementation and monitoring phases of Europe's new sustainability agenda, and ensure local areas that want to make faster progress are encouraged to do so.
- **Establish a European Panel for Sustainability (EPS)** as an independent, high-level scientific multidisciplinary body, based on the IPCC model, reporting to the European Council, to provide guidance and monitor progress.
- Tackle gaps in the implementation of legislation and in accountability through more effective use of **Member State and European enforcement mechanisms** and a more systematically facilitated public **access to environmental justice**.
- **Incentivize businesses to go beyond the essentials of compliance** through a **new sustainability certification scheme for European companies** aligned with SDGs, independently verified and based on best available environmental footprint methodologies.
- **Utilise Europe's semester process** to increase momentum, coherence and transparency in the transition-integrating well-being metrics into the process.

### 3 A central challenge: consumption 2030



In light of planetary boundaries,<sup>III</sup> the ways that we consume today – at a high rate and along a largely linear trajectory (take-make-dispose) – are not sustainable.<sup>11</sup> In the simplest terms we would need almost three earths to support the global economy if European consumption patterns were replicated throughout the planet.<sup>12</sup>

In fact, each European will have to reduce by 80% the amount of natural resources<sup>IV</sup> they currently use for nutrition, housing, mobility and leisure (see figure below) by 2050. This means a reduction of material footprint per capita by 1 tonne annually during the next 32 years.

This can be achieved through a combination of efficiency and sufficiency. Greater efficiency is required to reduce the material footprint of every day consumption, while sufficiency (i.e. reducing overall consumption) will be also needed for those items whose footprint cannot be brought to an acceptable level by efficiency only.

According to the OECD,<sup>13</sup> governments play an essential role in encouraging people to factor the environment into their everyday lives and purchases.<sup>14</sup> To reach the change at the scale and speed that is required means going well beyond labelling to include selective “choice editing” i.e. ensuring that products put on the market are both safe for consumers and in line with planetary boundaries. A recent example of action to trigger change in consumption is the decision by the European Parliament to ban certain single use plastics such as plastic cotton buds, straws, plates and cutlery.

Increasing the sustainability of consumption should not come at the expense of other societal objectives such as social justice, health and quality of life. Sometimes there will be a win-win: a greener approach to travel for work might for instance improve work life balance and reduce exposure to air pollution. Reducing meat consumption is likely to improve the health status of those individuals whose consumption goes beyond what is recommended as part of a healthy diet.

Sometimes, there might be trade-offs, which needs to be addressed through carefully crafted policies: for instance, taking into account challenges linked with the availability, suitability and affordability of more sustainable products will be essential.

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<sup>III</sup> The planetary boundaries framework defines a safe operating space for humanity based on the intrinsic biophysical processes that regulate the stability of the Earth system such as Stratospheric ozone depletion; Loss of biosphere integrity (biodiversity loss and extinctions); Chemical pollution and the release of novel entities; Climate Change; Ocean acidification; Freshwater consumption and the global hydrological cycle; Land system change; Nitrogen and phosphorus flows to the biosphere and oceans; Atmospheric aerosol loading.

<sup>IV</sup> The unit used is the material footprint per capita, taking the current footprint of Europeans of 40 tonnes per capita per year as the baseline (upper boundary level, based on literature from Groezinger 2009; SPREAD consortium 2012) and the objective of 8 tonnes per capita by 2050 (based on literature from Lettenmeier et al, 2012; Bringezu, 2009; Kotakorpi et al, 2008).



Policies must also anticipate differential impacts on households, livelihoods and lifestyles and put in place supporting policies to ensure a just transition for all (see details in section 5).

The infographic below (figure 2) illustrates the challenges ahead and proposes concrete solutions for reaching sustainable consumption.



Through the Single market, the EU has a long-standing competence over consumption issues and has a good menu of policy tools to build from, including the Ecodesign Directive and the Ecolabel and EMAS regulations. The EU Action Plan for the Circular Economy and the 2008 Sustainable Consumption and Sustainable Industrial Policy Action Plan look ahead at the choices and some of the measures required. However, the bulk of concrete interventions have focused on supply side measures addressing the negative impacts of the current linear economy, including improving the resource and energy efficiency of production and end-of-life management of products. There has been much less focus on the demand side. Some progress has been made, for example in the uptake of recycling. However, productivity gains and cost savings in one area often lead to increased consumption and resource use in another – the so called “rebound effect”. This can significantly reduce the effectiveness of consumers’ “green” choices.<sup>15</sup>

So far, general consumption patterns have remained unchanged and environmental impacts related to consumption remain unsustainably high despite those demand-side measures that have focused on raising consumer awareness and encouraging more reliable and comparable product information. On their own, these efforts do not seem to result in the required behavioural changes.<sup>16</sup>

Action is required at different levels of governance, with EU strategic framing and support for interventions that will be developed particularly within member states and in the private sector. Both household consumption, accounting for about 60% of GDP within the EU, and public sector consumption, another 14%, need to be included.<sup>17</sup> Demographic trends, such as the increased level of single households often associated with more wasteful consumption practices, also need to be taken into account.

A combination of different policy instruments needs to be deployed. Many can build on existing approaches, such as consumer engagement and information and standards for public procurement. Others will involve extending the field of intervention more widely, such as introducing environmental tax reform, designed to shift the burden of taxation from labour to one based on the use of natural resources and energy.<sup>18</sup> Well-designed taxes, fees and other charges or subsidies can successfully promote business models contributing to closing the loop on materials and resource use. Examples might include differential VAT rates, which could explicitly favour repair and renovation services, and more support for leasing and sharing of products with a sizeable footprint.

Initiatives aimed at encouraging behavioural change can take advantage of technological innovation, such as aspects of digitalisation – potentially empowering better informed and more motivated consumers. Measures can apply insights from consumer behaviour studies to ensure that interventions, whilst ethical, are well-designed and targeted. Importantly, behavioural insights might help address the prevailing gap between consumer knowledge and action when it comes to sustainable consumption. The OECD has suggested that promising policy domains for the application of behavioural insights include resource efficiency and waste management, transport, water and environmental compliance.<sup>19</sup>

These demand-side measures require the field of choice to include a better range of more sustainable options. Reinforced incentives to design and build products with lower impact and longer functional lives will be essential, utilising more ambitious labelling schemes and product standards where the EU has a key part to play globally as well as internally.

### **Recommendation for consumption 2030**

- **A comprehensive European policy for sustainable consumption**, covering nutrition, mobility, housing and lifestyles, as a complement to the current circular economy package, and aiming at an 80% reduction in per capita material footprint by 2050.<sup>v</sup>

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<sup>v</sup> Literature from Groezinger (2009) and SPREAD Consortium (2012) indicate an average per capita material footprint of Europeans between 27 and 40 tonnes per year. A reduction of 80% in per capita material footprint is estimated from the upper bound level (40 tonnes) to reach the sustainable level of 8 tonnes per capita in 2050. This level of material footprint of household consumption is based on existing literature from Schimdt-Bleek (1993), Bringezu (2009), Kotakorpi et al (2008) and Lattenmeier et al (2012)

## 4 Prosperity 2030: time for a paradigm shift

### 4.1 Reinventing growth for Europe...



**Europe's ability to maintain and enhance its prosperity** for generations to come requires a hard look at the nature of growth and at the changes that would be required to achieve sustainability in line with SDGs.

A return to economic growth in Europe has been a major focus of the Juncker Commission. This strategy, alongside that of member states, has achieved some results: GDP per capita in Europe recovered its pre-financial crisis level in 2014. The employment rate has increased by 1.1% annually since 2012 and the 2020 employment target of 75% will be achieved if the current growth rate of employment is maintained.<sup>20</sup>

However, Europe's modest growth does not appear to be sustainable over the long term, economically, socially or environmentally:

In spite of a moderate upward swing since 2013, the investment of share of GDP in Europe has been on a downward trend over the past 15 years. 2.3% of GDP was spent on R&D in the EU in 2016, which is so far falling short of the 2020 target of 3% of GDP.<sup>21</sup>

Not everyone has benefited from European growth in the same way. While economic disparity between European countries has decreased in the past 5 years, albeit at a slower pace than during pre-crisis levels, the income share of the bottom 40% of the population has decreased from 21.5% in 2005 to 20.9% in 2016.<sup>22</sup> The poor have become poorer over time, as illustrated by the growing distance between the median income level of people living below the poverty line and the poverty line itself. Beyond legitimate concerns over social justice, a continuation of these trends to 2050 is likely to be detrimental to one's growth potential.

Looking towards 2050, OECD countries are likely to see declines in the rate of economic growth as a result of aging.<sup>23</sup> The EU-28's population is projected to increase to a peak of 528.6 million around 2050. In the coming decades, the high number of 'baby boomers' and 'Generation X' will swell the number of elderly people.<sup>24</sup> A key additional factor is an increasing burden of care. The inactive population due to caring responsibilities is already increasing in Europe, with women taking a disproportionate share of this burden.

While growth has been accompanied by a decrease in domestic material consumption, reflecting a shift of Europe's economy towards services, there is **no absolute decoupling of growth** when one takes into account the net material use embedded in trade. In spite of a decade of debates on green growth, Europe is still relying on **exploitation of finite resources to fuel its economic prosperity**.

Finally, a variety of **shocks** along the way are likely to continue to occur (natural disasters, debt crisis, interest rate volatility, stock markets, trade tensions). Macroeconomic policies should also factor in the impact on growth of large scale environmentally-related shocks:

Climate change is expected to wipe out \$4.2tn off the value of the world's current stock of manageable assets by 2100 (on average),<sup>25</sup> a value equivalent to Japan's GDP. Likely losses would be much higher in more extreme 'outlier scenarios', with losses of up to \$13.8tn – 10% of the current value of the world's financially manageable assets – in the case of 6°C of warming.

While all the above clearly poses a formidable challenge to a business-as-usual growth model, moving to greater sustainability can also be seen as an economic opportunity, which Europe must seize. The global market for low carbon goods and services, already worth \$5.5tn in 2011-12,<sup>26</sup> is rapidly growing.<sup>27</sup> In this burgeoning global marketplace, ambitious policy in the EU can create a first mover advantage, building on existing European strengths to drive domestic development in the low carbon and circular technologies, expertise and services that other countries will rely on to deliver their Nationally Determined Contributions (NDCs) under the Paris Agreement and SDGs.<sup>28</sup>

**Many of the jobs being created within the low carbon economy are in regions and sectors that have seen decades of underinvestment.** Growing the low carbon and resilient economy has the potential to deliver higher quality of life to citizens across Europe not only through jobs growth, but also improved air quality, resilience to natural disasters, and greater physical and mental wellbeing associated with quality, green spaces.

Capitalising on these global growth opportunities will require overcoming a common perception amongst policymakers that environmental regulation is a burden for business and a barrier to economic growth. A recent report published by engineering consultancy BuroHappold<sup>29</sup> found that contrary to common belief, **well-designed, ambitious environmental regulations can deliver economic as well as environmental benefits.**<sup>VI</sup>

As the Commission noted in its **Sustainable Finance Action Plan**, the 2030 Climate & Energy Package faces an annual investment gap of almost €180bn and the EIB estimates the overall investment gap in transport, energy and resource management infrastructure at an annual €270bn.<sup>30</sup> To ensure enough private finance is dedicated to sustainability requires seeing through the implementation of the current Sustainable Finance action plan and going beyond—as the plan is solely focused on climate change, will be critical. Much work needs to be done to understand the role that private finance could play in other sectors and on other issues, such as biodiversity or the food system.

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<sup>VI</sup> The analysis carried out by BuroHappold concludes that to be economically and environmentally effective, environmental regulations need to be pitched at the right geographic scale, be consistent with other existing policies, set a clear sense of direction and be implemented in a way that gives businesses enough time to adjust to them. To maximise economic benefits and avoid unintended consequences, environmental regulations also need to be complemented by other policies, such as on skills (to maximise opportunities in terms of supply chain growth and job creation) or targeted financial support (to help industries at risk in the early stages of the transition to a resource efficient, low carbon economy).

Moreover, raising funds on such scale has implications for **macroeconomic and monetary policies**. Research conducted during the last economic crisis by Ernst and Young established a clear link between austerity and widening climate public funding gaps in several OECD countries.<sup>31</sup> Mechanisms to ring fence transition funding should therefore be explored to protect the transition from the effects of another financial crisis, which is probably a given over the next time period. Guarding against too abrupt a rise in interest rates would be also key.

Financing the transition also has **major budgetary and fiscal implications**: A clear link to the EU Long Term Climate Change Strategy, based on a whole-economy vision of net zero emissions by 2050, would help to identify the sectors, and technologies, where progress is currently too slow, and where early deployment of new technologies and new ideas is needed in order to accelerate learning effects, and bring down the cost of the transition from fossil fuels to low-carbon economy.

## 4.2 Reforming key sectoral policies

In addition to creating the right enabling macroeconomic and financial framework at EU level to reach 2030 and beyond, key thematic and sectoral policies need a major rethink as they are not delivering change on the scale and at the speed required to build prosperous and sustainable industries and services in Europe. This requires integrating other dimensions than climate change and energy, as the changes required need to address multiple challenges and affect all sectors of the economy.

### 4.2.1 Climate change policies

**The EU's current climate ambition to 2050 is not aligned with its international commitment to the Paris Agreement.** The Paris Agreement establishes the additional goal of net zero global emissions by the second half of the century, which the EU should reach sooner to provide a fair contribution, in line with its own responsibility and capacity. The existing 2050 roadmap, drafted by the European Commission in 2011 used a pathway in which the EU reduces its GHG emissions by 80% to 2050. This target is now out of date. The distinction is key: the technological and societal choices implied by aiming for -80% or -95% and net zero as end-points can be very different – and so is the actual accumulated carbon balance emitted over time.

Moreover, **the EU is not on track to meet its existing 2030 targets and even further from its 2050 ambition.** According to the EEA, Member States project the pace of current GHG reductions to *slow down* beyond 2020, meaning reductions that would occur based on current policies would fail to meet the 40% reduction target by 2030. Meeting the existing 2030 target would require increasing the pace of GHG reductions to 2030, and increasing it even *further* to enable the EU to reach GHG neutrality by 2050.<sup>vii</sup>

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<sup>vii</sup> Taking into account the recently adopted increases of the energy efficiency and renewable energy targets to 2030, which mechanically translates into a higher GHG reduction target (slightly over 45%) according to the Commission (Cañete, 2018), the existing gap between the existing commitments and implementation is even

The EU thus needs to double down on both the 2030 emission milestone towards 2050 and the policies required to get there. Incremental change will not be sufficient.

The impact of climate change is felt already and will increase over time, so more systematic investment in adaptation should not be delayed. Up to now the position adopted within the EU has been largely expecting private actors to move in their own interest. Less weight has been given to the need to link preparedness more closely to wider social and environmental priorities, such as water conservation. After a hot summer and costly compensation payments to farmers in some countries following reduced yields, the benefits of more proactive adaptation may be clearer. There could be a co-ordinated effort to model climate impacts at regional, national and occasionally local levels and draw up plans for potentially extreme weather events and climate conditions.

### 4.2.2 Circular economy

The **Circular Economy Action Plan (CEAP)**,<sup>32</sup> adopted by the Commission on 2 December 2015, provides a good basis, from which to build on. So far, the EU policies on the circular economy have a strong focus on increasing recycling rates, reducing landfill and creating secondary markets for materials. This is echoed in existing Member State policies. On their own, however, these measures are insufficient to result in a paradigm shift in resource use – or indeed prevent a rebound effect where net productivity gains are lost in growing consumption overall. The goal of the circular economy should be to **reduce the consumption of resources and the production of waste in absolute terms**.

- **Develop clear targets and timelines to reduce the material consumption in the European economy.**
- Strengthen national statistical capacity on **material flow accounting** to support the monitoring of progress
- Europe's circular economy transition should be a **social agenda** – integrating ambitions for green jobs, carbon and material equality, as well as the objectives of the European Pillar of Social Rights.
- **Environmental fiscal reform should be used as a key instrument in circular economy transition** – the tax burden should be shifted away from labour and onto material consumption, i.e. the double dividend. Progressive reforms should also cover the removal of environmentally harmful subsidies – such as those on fossil fuels, which are inherently linear.
- **Europe's industrial, digital and innovation policies** – including the EU Industrial Policy Strategy, the Digital Single Market and Horizon Europe – should reflect the overall ambition for the EU to reduce material consumption and waste production.

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higher (Fig. 1). Targets revised in June 2018 from at least 27% to at least 32% for renewables, and from 27% to at least 32.5% for energy efficiency. The renewable energy target is binding at EU level (but not broken down to binding national targets as that for greenhouse gases), the energy efficiency target is indicative and non-binding at EU level.

### 4.2.3 *Plastics*

8,300 million metric tonnes (Mt) of virgin plastics have been produced globally to date.<sup>33</sup> Annual global production of plastics has increased twentyfold since the 1960s, reached 322 million tonnes in 2015, and is predicted to double again over the next 20 years.<sup>34</sup> In Europe, the largest use of plastics is for packaging, which accounted for almost 40% of the 49 Mt of plastics demand in 2015 (around 42% globally).<sup>35</sup> This is followed by building and construction related applications (almost 20%), automotive applications (around 9%) and electronics (almost 6%).<sup>36</sup> According to estimates, the scale of plastic waste which entered the global marine environment ranged between 4 and 12 million Mt in 2010.<sup>37</sup>

Some aspects of EU plastics related policy can be considered as having a reasonable or even high degree of ambition towards achieving more sustainable plastic use. However, in other areas higher levels of ambition can be seen at the global, Member State or industry level. For this reason, it is crucial to ensure that the existing levels of ambition are not diluted, but strengthened, especially since the EU wants to take a leading global role on the issue.

### 4.2.4 *The agri-food system*

The agri-food system needs to play a central role in the transition to sustainability, contributing to protect Europe's natural capital, achieving better nutritional status for the European population alongside providing an affordable food supply. This is a field where EU policy has considerable reach and influence not only through the Common Agricultural Policy, but also via the development of the circular and bio-economies, food labelling, trade relations, research funding and other interventions. Now that the proposals for the next Multiannual Financial Framework are on the table it is important to give the food system in its broadest sense due prominence in the preparations for 2030 and setting a pathway for 2050.

Many experts are therefore expressing the need for a transition, taking the whole food system on a journey over decades to a position where it is compatible with global limits, improved public health, economically and socially viable farming systems, acceptable technological choices and fair trading arrangements. Progressive food companies, such as Unilever, talk the same language.

Achieving global and EU mitigation targets by 2050 will require large scale carbon sequestration on land occupied primarily by agriculture and forestry as well as a significant reduction in emissions from the agriculture sector. Reaching other environmental targets will also require significant changes, including:

- **Changes in management on the ground** affecting agriculture, forestry, utilisation of wastes and by-products. Both high tech solutions, such as data driven precision farming and more traditional methods, such as organic farming have a role. Improved resource efficiency and resilience will be key strands.
- **Enabling conditions**, including market adjustments, fair prices for sustainable products and for farmers within the food chain, targeted investment by the private sector and by beneficiaries (such as water suppliers) in better forms of land



management. In essence this should lead to a re-balancing of the food and agricultural commodity supply chains so that sustainable products become more affordable to consumers and more convenient wherever possible.

- **Policy support**, including information, advice, R&D, regulation and CAP measures focussed effectively on public good provision and measurable outcomes.

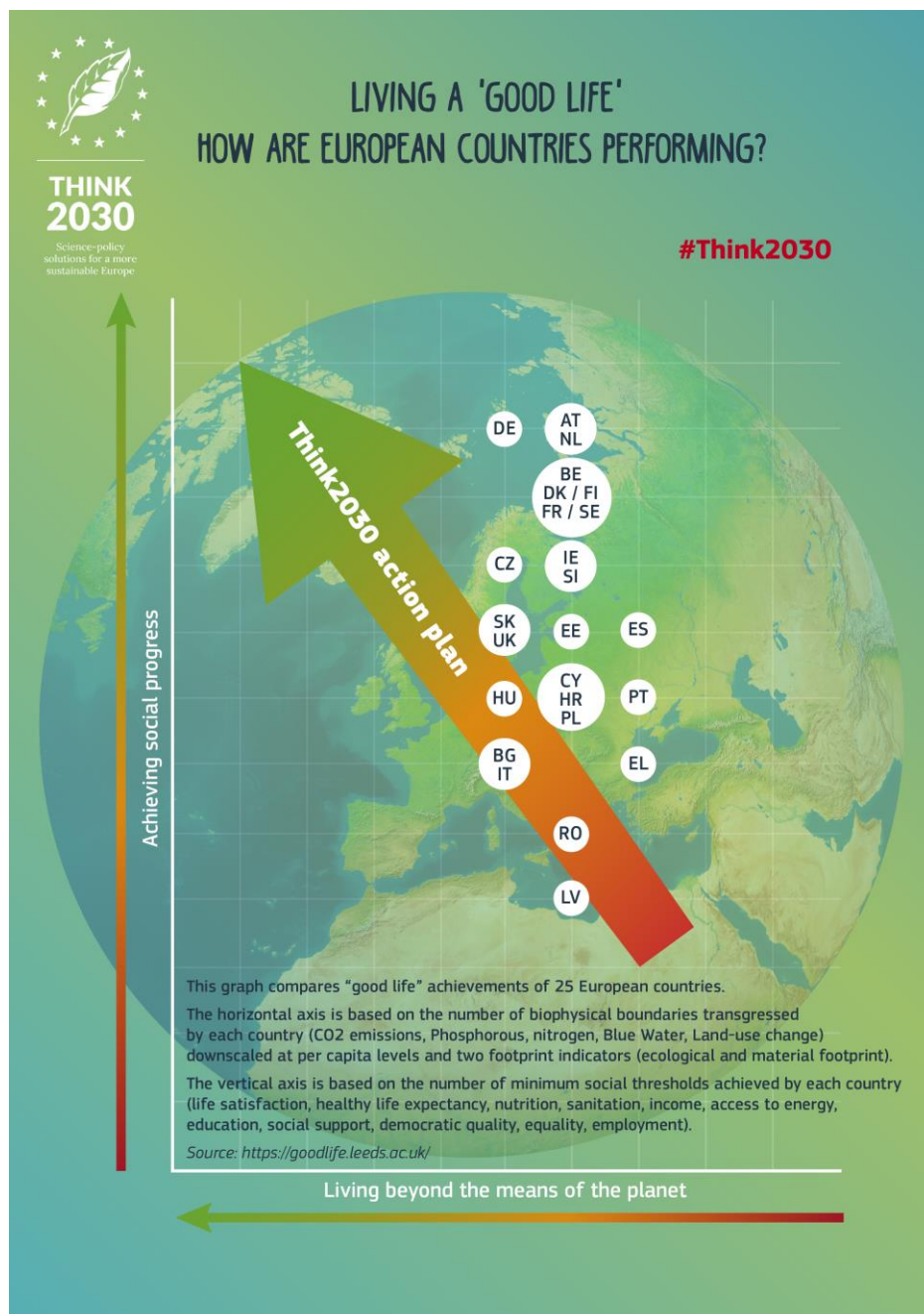
## Recommendations for prosperity 2030

The EU needs to adopt a transition framework for the coming decades, reaching deep into economic goals and production systems. High level measures should include:

- **A clean macro-economic, monetary and growth framework** supporting decarbonisation, greater resilience to shocks and mobilizing public and private investments necessary for the ecological transition.
- **A coherent mid-century decarbonisation strategy**, aimed at achieving net zero emissions before 2050, taking the urgent early steps needed to put us on track for that objective, and supported by **sectoral industrial strategies** and a **carbon floor price**.
- Greater use of targeted economic instruments such as green **taxation and public procurement policies** at all levels of governance to shift individual and collective behaviours.
- An accelerated implementation of the **sustainable finance action plan**, in order to reorient capital flows towards a more sustainable economy.
- **Increased support for eco-innovation**, starting with a more ambitious **eco-design directive** and supported by mission-oriented goals and adequate instruments within Horizon Europe.
- A new generation of concrete waste prevention targets within the **circular economy package and the plastic strategy** based on an absolute reduction in annual waste.
- **A new approach to Europe's food systems (both production and consumption)** ensuring coherence with relevant EU strategies (such as those on decarbonisation) and supporting farmers through results-based payments combined with support for knowledge transfer and innovation.
- **Align the EU's budgetary resources to sustainability** through tighter environmental conditionalities on the use of European funds, greater alignment of the MFF to National Energy and Climate Plans, and measurable targets for the environmental outcomes of each programme.

## 5 Well-being 2030: Health, quality of life and social justice

Europe benefits from very high levels of Human Development and its citizens have amongst the longest life expectancies in the world. However, Europe has still a way to go in achieving the social dimension of the Sustainable Development Goals and it needs to do so while reducing its material footprint per capita. As figure 3 shows below, all European countries are currently living well beyond the means of the planet while still failing to achieve some of social objectives included in the SDGs.



Although access to a healthy environment is now considered by Eurostat as a component of well-being,<sup>38</sup> there is insufficient understanding of the interactions between well-being, social outcomes, and the state of the environment: this is mirrored in the narrow focus and missed opportunities in terms of policy design. The European Pillar of Social Rights,<sup>viii</sup> the priorities of which include equal opportunities and access to the labour market, fair working conditions, social protection and inclusion, is conceived as completely separate from environmental policies. The EU social funds do not have an impressive record of addressing climate change, with only an estimated 7% allocated towards a low-carbon and climate-resilient economy through reform of education and training systems, adaptation of skills and qualifications, up-skilling of the labour force, and the creation of new jobs.<sup>39</sup>

Likewise, environmental policy generally lacks credible tools and instruments to ensure its compatibility with social policies. While the circular economy is presented as inclusive, there remains scope for more concrete measures, beyond initiatives on food waste, which would foster inclusivity. Moreover, the Social Rights Pillar is still incipient and a contested area of competence with Member States, weakening the incentive to embody it more strongly in the much more established environmental acquis.

## 5.1 Public health

The changing nature of global burden of diseases suggests the need for much greater focus on **the linkages between health and environment**. Tackling growing worldwide air pollution as well as other forms of pollution including noise, soil, water and food should become a priority for European health policies in Europe. **Urban air pollution** is expected to be the main environmental cause of premature mortality worldwide in 2050. The EEA estimated that in 2014 399,000 premature deaths in Europe were attributable to exposure to fine particulate matter (PM 2.5), 75,000 to exposure to nitrogen dioxide and 13,600 to exposure to ground level ozone. Even allowing for some overlap, there are about 400,000 such premature deaths in the EU, constituting the biggest single environmental health risk. There are major variations within Europe with the highest rates of premature mortality in Eastern and Southern parts of the EU, the lowest in Sweden. The EU Court of Auditors estimated “hundreds of billions of euros in health related external costs” in a recent review and critique of policy.<sup>40</sup>

With pre-obesity affecting more than 50% of EU’s population, changing diets and food consumption habits are becoming a health emergency. The issue of pesticides and endocrinal disruptors is now high on the agenda, with increasing evidence of the health impacts of these substances. Endocrine disrupting chemicals (EDCs) are affecting the environment and are related to diverse health issues and diseases such as obesity, diabetes, cancers, and effects on puberty and the hormonal system in general.<sup>41</sup>

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<sup>viii</sup> [https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights\\_en](https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en)

New public health challenges also include the prevention of new epidemics or antibiotic resistant infectious diseases linked with practices of the livestock industry. By 2050, drug-resistant infections could cause global economic damage on a par with the 2008 financial crisis.<sup>42</sup>

There is increasing recognition of the interest expressed by the public in supporting a transition towards a healthier diet, and the concept of the sustainable diet has gained ground rapidly amongst nutritionists. Under nearly all definitions it includes a decline in the consumption of sugar, livestock products and alcohol and an increase in fruit and vegetables. Several Member States, such as Denmark, are already experimenting with more assertive advice and labelling policies, and experimenting with taxes on less healthy foods such as sugary drinks.

Several emerging trends point to potentially changing preferences, at least amongst some social groups (including some of the most educated groups and millennials). For example, markets for organic and environmentally friendly food are expanding in many Member States. Meat consumption is projected to fall in several larger Member States over the coming decade.<sup>ix</sup> There is also increasing momentum around the issue of food waste, with a number of public and private initiatives explored at different levels of governance.

## 5.2 Leaving no-one behind

In 2015, 119 million people, or 23.8% of the EU population, were at risk of poverty or social exclusion. Risk factors include being a woman; being young; living in a single-headed household with dependents; living in rural areas; having a low educational attainment; having been born in a non-EU country. Severe material deprivation, an absolute poverty measure, affected 37.5 million people or 7.5% of the EU population in 2016.<sup>43</sup> This was not evenly distributed within Europe, with over a quarter of the Romanian population for example living on less than \$5.50 a day, the highest poverty rate in the EU.<sup>44</sup>

According to the (partial) evidence available, low-income households tend to live in a less healthy environment than higher income ones and suffer from multiple sources of vulnerability. They suffer from poorly insulated housing, more affected by dampness, noise and air pollution, lack of access to green recreational facilities and to fresh and nutritional foods. They also have greater challenges in terms of affording energy and mobility. All these factors have a proven negative impact on their health and life expectancy. The case of air pollution is well documented but it is likely to be a more widespread issue. For example, there is growing evidence that the lack of access to nature is a contributing factor in poor mental health and obesity among low-income groups.<sup>45</sup>

Their capacity to cope with shocks, such as natural disasters, life-threatening diseases, or sudden increases in prices of essential goods are also more limited.

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<sup>ix</sup> After increasing by eight years since 1960, life expectancy at birth could continue to rise by at least a further five years by 2050. However, Europe's current model is failing to put an end to poverty and to prevent rising inequality and widespread youth unemployment, while at the same time spending too much of its natural capital.

### 5.3 Addressing multidimensional inequality: towards a just transition

The impact of the sustainability transition on **employment** is a critical issue. Some predict that global unemployment could rise to 25% by 2050,<sup>46</sup> because of technological change rather than environmental constraints. Impacts of the twin technological and sustainability transition on production systems will not be fairly distributed across gender, geographical location and age and might exacerbate already existing inequalities in Europe.

There is a growing awareness about the need for a just transition in the energy sector. In the EU, the coal sector provides jobs to about 240,000 people, with 180,000 employed in the mining of coal and lignite and 60,000 working in coal- and lignite-fired power plants. The European country that records the highest number of coal mining jobs is Poland with about 115,500 people employed in coal mines and related businesses. In all other countries, less than 30,000 people are employed in the coal industry, representing less than 0.6% of total national employment. Compared to other sectors, the scale of the challenge is, thus, relatively small and impacts will be regionally concentrated.

Compared to the coal industry, the scale of the transition required for a decarbonisation of the transport sector and its impacts on the automobile industry are very different as a much higher number of jobs are involved. 13 million Europeans work in the automobile sector in manufacturing, services and construction, representing 6.1% of total EU employment.

Agriculture is another sector that will undergo massive transformation. Some subsectors might be hit particularly hard. Various studies that have looked into the climate impact of farming and livestock have concluded that a 50% reduction in livestock capacities will be necessary for farming to help achieve existing climate goals for 2030 and 2050. In fact, the RISE foundation identified a safe operating space for livestock and found that in order to reach EU climate targets, livestock in the EU needs to be reduced by 74% in 2050.<sup>47</sup>

**Growing income inequality** in Europe also needs to be factored in. There is a correlation between income levels and carbon footprint.<sup>x</sup> Environmental taxes have to be designed to ensure behavioural change amongst the top income group as well as to minimise impacts on income and asset inequality. Conversely, tax reform as a key policy instrument for redressing social inequalities<sup>48</sup> needs to factor in the environmental considerations, not least because of the links between the exploitation of natural resources and fiscal evasion, money laundering and corruption. Social transfers also need to be taken into account. The changing nature of work due to technological change as well as ageing and the crisis of classic retirement models will make the issue of the **new entitlements**, such as the universal basic income, a key debate for the next period. Ensuring their design contributes, rather than hinders, sustainability will be important.

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<sup>x</sup> In Europe, the share of the top income group in income (45%) broadly correlates with its share in the carbon footprint (37%). This is also true for the bottom income group (6% in income and 8% in footprint).

**Generational equity** is a key topic for Europe's sustainability transition. Europe's current economic model tends to disadvantage Europe's youth. In Europe today, people under 24 years of age are most at risk of severe material deprivation. Due to youth unemployment and the stagnation of workers' income, the income of young people has only recently reached pre-crisis levels while people aged 65+ registered a 10% increase in their income.<sup>49</sup> Correspondingly, there seems to be a correlation between age and carbon footprint, not only because many older people simply have more money to spend, but also tend to use less energy efficient products.<sup>50</sup> Moreover, environmental degradation, depletion of resources and climate change will also have disproportionate impacts on those who will live through to 2100.

The consequences of an ageing population also need to be better understood. With the percentage of the population over 65 reaching close to 30%,<sup>51</sup> there will be implications not only for resource allocation, employment and environmental footprint, for example in health care, but also for gender equality due to the unequal burden of care. Scenarios which foresee the use of robots and machines to take care of the elderly or children could be hard to square with the need for less consumption of energy and materials overall. **So greening of the care economy might become a greater priority.**

Not all citizens place the same burden on the environment and policy development needs to reflect this in appropriate ways. Should the 'polluter pays' principle apply more systematically at the household level for example? A report by the International Institute for Environment and Development (IIED) found per capita greenhouse gas emissions for a Londoner in 2004 were the equivalent of 6.2 tonnes of CO<sub>2</sub>, compared with 11.19 for the UK average.<sup>52</sup> The rural northeast of England, Yorkshire and the Humber, were singled out for having the highest footprints per capita in the UK. However, at the same time rural populations often play an important role in providing ecosystem services.

Globally, 67% of people will be living in cities by 2050. In Europe the rate of urbanisation is expected to reach 80%.<sup>53</sup> The geographical distribution of population has an impact on transport, the supply of services and the environment more generally. Average demographic density in Europe reached 120 inhabitants per square meter, ranging from 3 people per square meter in Iceland and over 16,000 in Monaco.<sup>54</sup> While internal migration within Europe is low, there are still rapidly growing regions and shrinking ones. Such changes need to be factored into **sustainable urban planning, as low-carbon infrastructure and adaptation.**

A large proportion of the action required to bring about the transition will need to be initiated and managed within communities, whether they are large urban conglomerations or remote villages. Local ownership and engagement are key. EU frameworks, funding, R&D, sectoral targets and other mechanisms can support a web of localised actions. Much of the focus will be on urban areas, including major cities, where a growing share of the population live. But it is important that the specific needs of rural areas are not overlooked in the process.

Little is known about potential interactions between the sustainability transition and other forms of inequality such as gender or minorities. Such considerations need to be integrated to ensure co-benefits of the sustainability transition on other social justice issues.

## Recommendations for well-being 2030

The social dimensions of Europe's environmental policy must be recognized as central to delivering a legitimate sustainability transition. Critical measures at the EU level should include:

- **Design a comprehensive environmental health strategy**, providing a coherent framework for addressing public health threats linked most urgently with air pollution, which disproportionately harms the life chances of poorer communities, and supported by **new regulations for chemicals and medicines**.
- Strengthen the **European Social Pillar of Rights to support a Just Transition**, through a range of social interventions needed to secure jobs and livelihoods covering all potentially affected sectors, communities and regions.
- Integrate sustainability considerations in the reforms of **income and wealth taxation and social protection** systems, which will be necessary to address rising inequalities and demographic changes.
- Build the resilience of cities, rural communities and the wider environment through **more effective adaptation strategies and action plans to address** climate change.
- Ensure the adequate representation of the interests of both youth and future generations, by establishing **an EU Guardian for future generations**.
- **Close the knowledge gaps** regarding the interlinkages between poverty, multidimensional inequality (generation, geography, gender, race, income) and sustainability in Europe through research and funding for socially innovative projects.

## 6 Nature 2030: protecting Europe's natural capital

One of the key challenges facing Europe to 2050 concerns the protection of the continent's natural capital.



### 6.1 Biodiversity

The continued large-scale loss of biodiversity on a global scale is one of the most fundamental and urgent challenges confronting societies, rich and poor. In Europe, the EU Sustainable Development Strategy established the target to halt biodiversity loss by 2010, but the scale and vigour of efforts to meet this were clearly insufficient and losses have continued. Recent assessments show that 23% of species are threatened with extinction, while 66% of species and 77% of habitats continue to be in unfavourable condition.<sup>55</sup> Progress has continued to be very slow and the target will not be met for a second time despite some clear demonstrations of success in restoring ecosystems and reversing the decline of individual species where this has received the priority and resources required. The Iberian lynx, until recently the most endangered cat in the world, is one example. Restoration is possible if the conditions are right.

Ahead of the meeting of the 15<sup>th</sup> Conference for the Parties to the Convention on Biodiversity in 2020, there is a crucial opportunity for the EU to re-set ambitions. To be credible, the EU and its Member States will need to commit to a more robust plan to achieve the goals already set. A credible programme of action in the EU would complement protected area approaches, which remain essential but tend to treat symptoms only, with more fundamental socio-economic changes, including the allocation of budgets, the design of sectoral policies and land use planning and patterns of consumption.

One key dimension is to address the management of agricultural land in the EU. As underlined by recent research in Germany,<sup>56</sup> more than half the territory in many Member States has ongoing declines in birds, butterflies and other animals. New questions also arise about why invertebrate numbers are falling so sharply. A route to healthier ecosystems and species revival would include action to reduce the most severe pressures (from agrochemical use, excessive nitrogen deposition from ammonia emissions, largely from farmed livestock and soil erosion) primarily through regulations, taxes, changes in consumption and the promotion of organic and low input systems.

In parallel, action is required in the marine environment, in forests and within the areas devoted to infrastructure, for example greening urban spaces and using ecosystem-based approaches to climate mitigation and adaptation, flood control and the stripping of wastes from water bodies. It is becoming clear that the restoration of nature and time spent outdoors has benefits for physical and mental health.



## 6.2 The ocean

The ocean covers 70% of the world's surface: historically this has fed perceptions that they are almost immune from serious anthropogenic damage-- nearly untouchable. The reality is that they now face considerable risks because of over-fishing, habitat destruction, nutrient and toxic pollution, acidification, discarding of plastics and other marine litter, coastal pressures and rising sea temperatures. As a result, the ocean might no longer be able to supply key ecosystem services, including fishing and climate regulation. Many fisheries in Europe are under extreme pressure, in the Mediterranean for example, and catches in the tropics are expected to decline by a further 40% by 2050.<sup>57</sup> By 2050 around 80% of the ocean surface is expected to be affected by ocean acidification and ocean warming.<sup>58</sup>

Key to reversing this situation is a change in attitude, a more direct engagement by people alongside concrete changes in practice to reduce known pressures and foster restoration. This requires initiatives to capture the values of citizens and communities in decision making, alongside efforts to ensure that these decisions are then implemented in practice, as often has failed to occur in the past. A Value Based Approach (VBA) in the whole realm of marine policy could allow the crucial social dimension of marine protection to be addressed and accountability increased. A first step is appreciating that failures in current governance are undermining the effectiveness of much of current EU legislation in this field, such as the stock conservation dimension of the Common Fisheries Policy (CFP)<sup>xi</sup> and the Marine Strategy Framework Directive (MSFD).<sup>xii</sup> Furthermore, popular support for more decisive action, to reduce marine litter more rapidly for example, is not getting translated into political decisions at the pace required, either at the EU level or in most MS.

## 6.3 Biomass

Building a **prosperous bio-economy** presents a major opportunity to move away from fossil fuels and enhance resource efficiency. However, such transition could also have the unintended consequence of creating pressures on other precious natural resources. New bio-economy pathways and governance mechanisms need to ensure that constraints to biomass production at all scales, including for instance requirements for feed,<sup>xiii</sup> which represents 65% of Europe's total agricultural biomass use, are taken into account within the EU's bio-economy strategy.

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<sup>xi</sup> [https://ec.europa.eu/fisheries/cfp\\_en](https://ec.europa.eu/fisheries/cfp_en)

<sup>xii</sup> <http://www.msfd.eu/>

<sup>xiii</sup> In this case, feed refers to renewable biological resources used as inputs for bioeconomy products, for instance wood chips.

## 6.4 Fresh water and soils

Europe's part in meeting SDG 6 (*Ensure the availability and sustainable management of water and sanitation for all*) is attracting attention. However, this is less the case when it comes to its role in combatting soil degradation and desertification, as required under the third strand of SDG 15. Yet both are critical and there are many opportunities for addressing them together and in complementary initiatives.

About a third of the world's soils are degraded according to the UN Food and Agriculture Organisation (FAO).<sup>59</sup> Improved soil health is vital for several reasons including the need to secure food production and to realise the potential for increasing soil carbon sequestration and storage. New knowledge, such as the FAO's soil organic carbon map, is helping to assess this potential- which will be needed to meet the 1.5° target. EU's Joint Research Centre (JRC)'s updated edition of their World Atlas of Desertification,<sup>xiv</sup> was published this June, twenty years after the previous one. Amongst the findings were an estimate that the area of land surface suffering significant quality decline is around 4.18 million square kilometres annually. Furthermore, without a change in current trends, a combination of adverse climate change and land degradation could have a severe impact on average crop yields in China, India and sub-Saharan Africa, potentially reducing global aggregate yields by about 10%.

While soils in Europe generally are more robust than in the most vulnerable zones, the Atlas suggests that there is high sensitivity to desertification on about 8% of the EU land base, mainly in Southern and Central Europe. This evidence reinforces the case for the EU moving beyond its current reliance on the voluntary Soil Thematic Strategy,<sup>60</sup> both in building soil related issues into plans and roadmaps for the relevant sectors (sharpening the focus on vulnerable regions as needed) and with more specific mechanisms, which could include a new Directive.

Alongside this, improved water management, especially on farmland, would reduce some of the pressures on soils as well as accelerating progress in meeting established goals for water quality and quantity. More vigorous implementation of the Water Framework Directive, especially in Member States which are finding it difficult to meet its objectives, remains a core priority; only 40% of EU waters now meet the standards for ecological quality.

The type of actions required on a larger scale, especially in more challenged regions, include more widespread crop rotation, extended areas of permanent pasture or woodland, better management of crop nutrients, reduced use of certain inputs to farming and reduced ploughing of slopes. Bringing down pollution loads by directly engaging with farm practice on a catchment scale could make a significant difference if adopted widely enough.

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<sup>xiv</sup> <https://wad.jrc.ec.europa.eu/>

## Recommendations for nature 2030

*The EU and its Member States need to work together to halt the deterioration of Europe's natural capital, embark on an ambitious and credible restoration pathway.*

- **Adopt an ambitious EU biodiversity 2030 strategy, with smarter targets**, specifying how biodiversity will be valued, further loss halted and large scale restoration achieved as well as a **binding global agreement on biodiversity conservation**, equivalent to the Paris climate agreement.
- **A new Value Based approach to the ocean**, addressing both the needs of different stakeholders and the array of policies which have a bearing on the marine environment.
- **A sustainable bioeconomy strategy**, ensuring that the transition from fossil to bio-based resources remains within the scale compatible with SDGs and planetary boundaries.
- **A fresh review of the challenge of improving soil management** in Europe, and the importance of a common policy.
- An increased focus across the Member States on **implementing their Water Framework Directive commitments** more fully and rapidly and stimulating **more investment in water conservation**.

## 7 Peace and security: Global Europe 2030

Combined with an increasing world population, the pressure on and competition over natural resources can be considered as one of the key peace and security challenges of the 21<sup>st</sup> century.<sup>61</sup>



Research<sup>62</sup> on the links between conflicts and the environment concluded that the typical causal pathway to conflict linked with environment involves high dependency on natural capital; environmental scarcity arising either when the quality and quantity of renewable resources decreases; population increases (demand-induced scarcity); when resource access becomes more unequal (structural scarcity). Environmentally-induced conflicts result in violence when the following additional conditions are met:

- Group survival is dependent on degraded resources for which no substitutes are apparent and eventually the group faces an inevitable and therefore desperate environmental situation;
- When a political system is incapable of producing certain social and political conditions, it becomes impossible to achieve goals such as sustainable use of resources;
- Dominant players use or manipulate the environment to serve specific group interests, making environmental discrimination an (ideological) issue of group identity;
- Environmental discrimination occurs within the context of an existing (historic) conflict structure and, as a result, the conflict receives new impetus.

Violent conflicts that are partly caused by environmental degradation are more likely to occur in marginal vulnerable areas, typically arid plains, mountain areas with highland-lowland interactions, and transnational river basins. Looking at Europe's neighbourhood, we lack a comprehensive environmental security risk map, but many regions already are or are likely to become hot spot areas because of climate and water induced risks. For instance, with approximately 5% of the world's population, the Middle East and North Africa region only has 1% of the world's renewable water resources. It is also affected by arid conditions, low rainfall and high levels of evaporation, leading to limited naturally available water resources. Forecasts for the impact of climate change on the region are dire. In Egypt, heat waves could lead to the flow of the Nile into the country being reduced by up to 75% by 2100 according to recent estimates.<sup>63</sup> Worse still, the region's population is predicted to grow by 72.7 % between 2010 and 2050.<sup>64</sup>

Global population is expected to grow 43% by 2050. The need to create jobs and to respond to new consumer demand linked with population growth will be on top of the governments' agenda, rather than the preservation of natural capital. Infrastructure needs to be linked with population growth, and urbanisation will also carry an enormous environmental toll, starting with greenhouse gas emissions. In short, the brunt of environmental degradation is still to come.

Further environmental degradation will have an impact on global poverty. While the number of people with consumption under \$1.25 a day should decline by 2050 on present projections, other studies point to a potential increase due to environmental degradation.<sup>65</sup> Many poor people in developing countries depend on the availability and access to natural resources for their livelihoods and wellbeing. For instance, the rural poor and indigenous peoples are the most immediately and directly affected by the degradation of ecosystems caused by over-extraction of resources.

Poor governance will often be the norm: By 2050, 18% of the world's population is predicted to live in failed states,<sup>66</sup> which makes the governance of natural resources belonging to or affecting the whole of a community, country or region particularly challenging. International cooperation around environmental issues has certainly been given a boost with the Paris agreement and with the launch of negotiations for a global plastics protocol or the global environmental pact. Notwithstanding, the G193-1 (the number of countries in the UN minus the United States) will have major challenges in terms of effectiveness of international norms in driving change at the scale and at the speed which is required.

By 2050, it is likely that land degradation, together with the closely related problems of climate change, will have forced 50-700 million people to migrate.<sup>67</sup> Contrary to current perceptions, it is expected that most movements will be internal or regional rather than international. Therefore, the brunt of the impact will be borne within the developing world and express itself through greater political instability and further environmental degradation.

In order to address these challenges, Europe has three powerful tools at its disposal: its defence, diplomacy, and trade & development cooperation.

## 7.1 Greening Europe's defence and diplomacy

The increase in climate- and natural resource related conflicts is expected to have several direct implications for defence forces around the world, as missions become more frequent and more focused on humanitarian aid and disaster response (HADR), and support to civil authorities.<sup>68</sup> Understanding the notion of '3S', Sustainability – Stability – Security<sup>69</sup> offers a new insight into the operating environment. These new realities should be at the heart of Europe's new defence policy.

Natural resources also have the potential to be used in conflict prevention and peacebuilding.<sup>70</sup> Well-functioning ecosystems support the supply of natural resources (e.g. water provisioning, food security etc.) and this way underpin prevention of resource scarcity. In addition, natural ecosystems can help to mitigate against the impacts of (and support recovery from) several natural hazards (floods, draught, mud floods etc.) and thus mitigating these hazards, avoiding they turn into full blown natural disasters with long-lasting impacts.

## 7.2 Defending environmental multilateralism

Europe continues to have a unique role in pushing for global environmental norm-building. Introducing trade-related conditionality in the wake of the US' departure from the Paris agreement contributed to prevent the unravelling of the accord. Europe needs to provide full support to the proposed UN global plastics protocol, but also to the proposed Global environmental pact, while creating new alliances and partnerships with both developed and developing countries to enhance chances of successful conclusion of negotiations. To do so credibly, Europe needs to align its own practices, starting with the full implementation of the Aarhus convention.<sup>xv</sup>

## 7.3 Reforming trade policies

At the moment, European trade policies are contributing to environmental degradation by enabling the mispricing carbon-intensive goods through the use of direct subsidies, but also by failing to internalise environmental costs of production and imports, which amounts to indirectly subsidizing environmentally-unsustainable products and sectors, thereby distorting competition.

Harnessing Europe's trade policy for the environment requires taking a systematic approach that integrates the environmental and trade agendas over time. Climate-related standards can take a lead in the next few years in trade policy and in trade agreements. This will have spill-overs also for SDGs and for the protection of other public global goods, such as biodiversity. Climate policy that is connected via the Paris Agreement framework with other countries' activities can deliver positive effects for other important environmental issues, such as efficiency in material use, recycling, or renewable energy production. There is a strong background on which boosting ambition can be based. Europe has had a major role in the global diffusion of higher environmental standards, such as Euro IV<sup>xvi</sup> in the automotive sector or with REACH for chemicals.<sup>xvii</sup> The EU needs to build upon its legacy to push for the harmonization of more ambitious standards.

The EU trade agreements (Regional Trade Agreements, RTAs) include already general clauses, such as references to sustainable development. They also safeguard national environmental standards through mutual recognition clauses. An explicit reference to the Paris Agreement was also introduced in 2018 in the EU-Japan Economic Partnership Agreement (EPA).

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<sup>xv</sup> The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the Aarhus Convention, was signed on 25 June 1998 in the Danish city of Aarhus.

<sup>xvi</sup> This refers to European standards defining acceptable limits for exhaust emissions of new vehicles sold in the European Union and EEA member states

<sup>xvii</sup> Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation dating from 18 December 2006. REACH addresses the production and use of chemical substances, and their potential impacts on both human health and the environment.

## 7.4 Doing one's fair share: a new approach to development cooperation

In line with the EU's treaty principle of Policy Coherence for Development,<sup>xviii</sup> Europe needs to address the spill overs of its own economic model. Major environmental spill over effects include for instance GHGs, pollution, biodiversity losses and land degradation. According to UN Sustainable Solutions Development Network's SDG index report, several EU Member States find themselves in the top 10 countries generating the highest negative spill overs vis-à-vis delivery of SDGs in the global context. The highest spill overs related to air pollution embodied in trade are almost entirely linked to the EU Member States, with Luxemburg again taking the lead and Belgium, Denmark, Cyprus, Ireland and Finland also in the Top 10.<sup>71</sup>

Not only should Europe ensure it is not harming other countries' prospects but also that it is providing its fair share of proactive efforts to help other countries achieve SDGs. In terms of Official Development Assistance (ODA), the new European Consensus on Development was set out to create a comprehensive common approach to the EU's development cooperation as per the global 2030 Agenda for SDGs. The EU's ODA (Member States and EU institutions) reached 0.5% of Gross National Income (GNI) with the sum of 75.7 billion EUR in 2017. However, this is still below the 0.7% target of gross national income for official development assistance (ODA/GNI) committed to by the EU and its Member States the first time in 2005.<sup>72</sup>

When it comes to the environment specifically, Europe's consensus for development could place greater emphasis on the role of a healthy environment in improving livelihoods and employment prospects in the developing world, but also building conditions of a lasting peace. For instance, it is clear that developing countries do not gain full benefits from the linear economy; almost 80% of resource-driven countries have a per-capita income below the global average. Developing countries fortunately produce far less waste than industrialized countries. A region such as sub-Saharan Africa is responsible for only 5% of the world's waste while OECD countries produce almost half of it. Still, waste in developing countries constitutes a growing source of pollution, with adverse health, economic and environmental impacts.<sup>73</sup>

For instance, just 10 river systems carry 90% of the plastic that ends up in the ocean. Eight of them are in Asia and two in Africa. Worse still, developing countries are recipients of large quantities of waste brought in from developed countries: more than 90% of discarded computers from the developed world are exported to developing countries such as Ghana, Pakistan, and India.<sup>74</sup>

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<sup>xviii</sup> Europe 2020 is a 10-year strategy proposed by the European Commission on 3 March 2010 for advancement of the economy of the European Union. It aims at "smart, sustainable, inclusive growth" with greater coordination of national and European policy.

## Recommendations for peace and security 2030

To protect global peace and security, Europe needs to support a worldwide transition towards greater sustainability through the following means:

- **Adopt a comprehensive horizon scanning and early warning system for environmental and climate change risks** for Europe's neighbourhood and other regions of strategic interest.
- **Broaden the scope and increase the ambition of European climate diplomacy** to include other major interrelated environmental risks, for instance by strengthening the focus on water issues.
- **Adopt specific initiatives to improve the awareness and capacity of the EU and Member States' military forces** regarding the role of climate and environment in conflict prevention and resolution.
- Use the EU's trade policy to push for **harmonized and ambitious environmental standards worldwide** and **cooperation agreements around low-carbon and other environmentally friendly technologies**.
- **Carry out an assessment of the EU's performance and also sharpen the targeting of EU external assistance** vis-à-vis delivery of SDG implementation in third countries, whilst addressing the negative spill-over effects of its own economic model.



## 8 Moving forward: what role for the European Parliament?

The European Parliament has a special role to play in bringing public attention to the sustainability challenges that Europe faces in the coming decade and the opportunities that will go with it. A transition of the kind outlined here is not a technocratic one but a set of substantive social, cultural and economic changes. The adjustments made will need to be fair and in step with the quite varied range of expectations amongst European citizens. This suggests a special role for the European Parliament if they wish to take it.

We hope that Think2030 will inspire all candidates and parties for the 2019 European elections to put sustainability at the heart of their programmes. As part of their democratic duties, all European parties should provide clear, evidence-based proposals within their party manifestos, going well beyond the limited proposals which were made in the 2014 election cycle, so as to allow citizens to make informed choices. Once the elections are over, the European Parliament will continue to have a critical role to play within a transition to greater sustainability:

- **Awareness raising:** As shifting consumption patterns will be key and high stakes decisions, for instance around technological choices, will be difficult, lawmakers need to contribute to a **new narrative** which effectively engages citizens.
- **Agenda setting:** The next European Parliament will be faced with the challenge of **framing one coherent agenda**, rather than bolting on the word “sustainable” to already existing frameworks and policies. This means addressing the interconnectedness of challenges, creating synergies and resolving conflicts. Surely it requires lawmakers to ask for an **8<sup>th</sup> Environmental Action Plan**, which would become a subset of an **SDG implementation strategy**, which in turn would replace the current Europe2020<sup>xix</sup> framework as Europe’s main strategy.
- **Law-making:** The European Parliament needs to support a **more effective science-policy interface** to ensure that the best available, independent, science and evidence is available to lawmakers. SDGs should be integrated in the legislative tool box, as is already the case in several countries, such as Germany and Italy. The European Parliament will also need to reflect on the **practice of dialogues**,<sup>xx</sup> which have been criticised for their lack of transparency. This has led to an opinion of the EU Ombudsman and a ruling by the European Court of Justice about the influence of this process on more or less effective law making on environmental issues in the European Union.<sup>xxi</sup>

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<sup>xix</sup> [https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en)

- **Implementation and enforcement:** The European Parliament will need to take stock of the outcomes of the forthcoming Environmental Implementation Review (EIR). Moreover, the new legislature almost certainly will need to strengthen its role in terms of enforcement of European environmental law- not only by taking stock of the **effectiveness of enquiry committees** to date but also by exploring new means of engaging in this key topic.
- **Ways of working:** Addressing the current silos between policies has implications for committee structures, as well as for ways of working and structures across committees. Creating an **inter-committee working group on SDGs** would be a step in the right direction.
- **Citizen engagement:** While generally supportive of the European project, European youth, whose wellbeing and livelihoods will be most impacted by future decisions on environmental challenges, are likely to abstain more than other age groups in the coming elections. Finding a **new modus operandi for citizen engagement, especially youth, on the sustainability agenda** will be essential, in a context of declining trust in the European project.

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<sup>xx</sup> Under the ordinary legislative procedure, the European Parliament has the right to propose amendments to the proposals for new laws that come from the Commission. Commission proposals, Parliament's amendments and the Council's common position are then considered in a so-called "trialogue" meeting with representatives from the three institutions who seek to negotiate an agreement or a compromise.

<sup>xxi</sup> Policy coherence in support of development objectives, first integrated in EU fundamental law in 1992 and further reinforced in the Treaty of Lisbon (Art. 208 TFEU), seeks to take account of development objectives in all of its policies that are likely to affect developing countries.

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