

Conditions and pathways for sustainable and circular consumption in Europe



Unprecedented sustainability challenges from accumulating environmental and climate pressures and impacts - to a large extent caused by unsustainable consumption - require a fundamental shift in our production and consumption systems in Europe and beyond. Such a shift calls for exploring what conditions and pathways are for sustainable and circular consumption in Europe.

Key messages

Environmental and climate pressures and impacts from consumption and related production accumulate over the years and many ecosystems are under pressure beyond their regeneration capacity.

As consumption levels in Europe are expected to continue to rise, technological gains and further efficiency improvements appear to be insufficient to reduce environmental and climate pressures to sustainable levels.

A more circular economy in Europe — achieved through policy action, circular business models and changes in consumption patterns — has the potential reduce environmental and climate pressures and impacts from our consumption.

Reduced pressures and impacts from consumption may be achieved through pathways aimed at (1) consuming differently by shifting to less material-intensive options and using renewable or recycled materials, (2) consuming less through, for example, longer product lifespans or through sharing models that can reduce the demand for new products, and (3) scaling up circular product design that enables circular consumption and reduces environmental impact.

In this briefing, we explore the conditions and pathways for changing consumption in Europe to ensure a good life for all within the limits of the planet and how a circular economy can support this change. The briefing is underpinned by a [report](#) on consumption and the environment in Europe's circular economy from the EEA's European Topic Centre on Circular Economy and Resource Use, and builds on the EEA [briefing](#) on environment and climate pressures from household consumption.

An EU policy objective on consumption, as expressed in the Eighth Environmental Action Programme, calls for a significant reduction in the EU's consumption footprint to bring European consumption-related impacts within planetary boundaries (EU, 2022). This calls for more profound changes in consumption. Incremental efficiency gains and decoupling pressures from economic growth alone are not enough to alleviate the current crises of climate change, resource depletion, biodiversity loss and pollution (EEA, 2021b, 2019a, 2019b). Rather, a significant reduction in the absolute levels of overall environmental pressures is needed so that the impacts they cause do not

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cause irreversible damage to natural ecosystems.

Living well within the limits of the planet

European and global consumption patterns put the planet's ecological balance at risk. At the same time, consumption fulfils important functions in the pursuit of well-being and for satisfying human and social needs. Because of high consumption levels, and the related production activities across the whole value chain, the ecological balance can be thrown off course in such a way that human well-being and distributional justice are in danger.

The concept of **planetary boundaries** encompasses this dilemma. Planetary boundaries refer to quantitatively definable limits to the damage of the Earth's ecosystems, which, if exceeded, would have irreversible consequences for life on Earth^[1]. When the boundaries are exceeded, humanity leaves the 'safe operating space' (Rockström et al., 2009) and living conditions could deteriorate. If, on the contrary, humanity manages to operate within these boundaries, it is likely to be able to continue to prosper and develop. There is evidence that several of these boundaries are being exceeded — including that for climate change — due to high levels of European and global consumption and production. If pressures from our consumption and its related production are not reduced significantly and quickly, we will continue to irreversibly damage our planet (IPCC, 2023; IPBES, 2022). It has been shown that in Europe we are currently not living within our share of planetary boundary capacity (EEA, 2020).

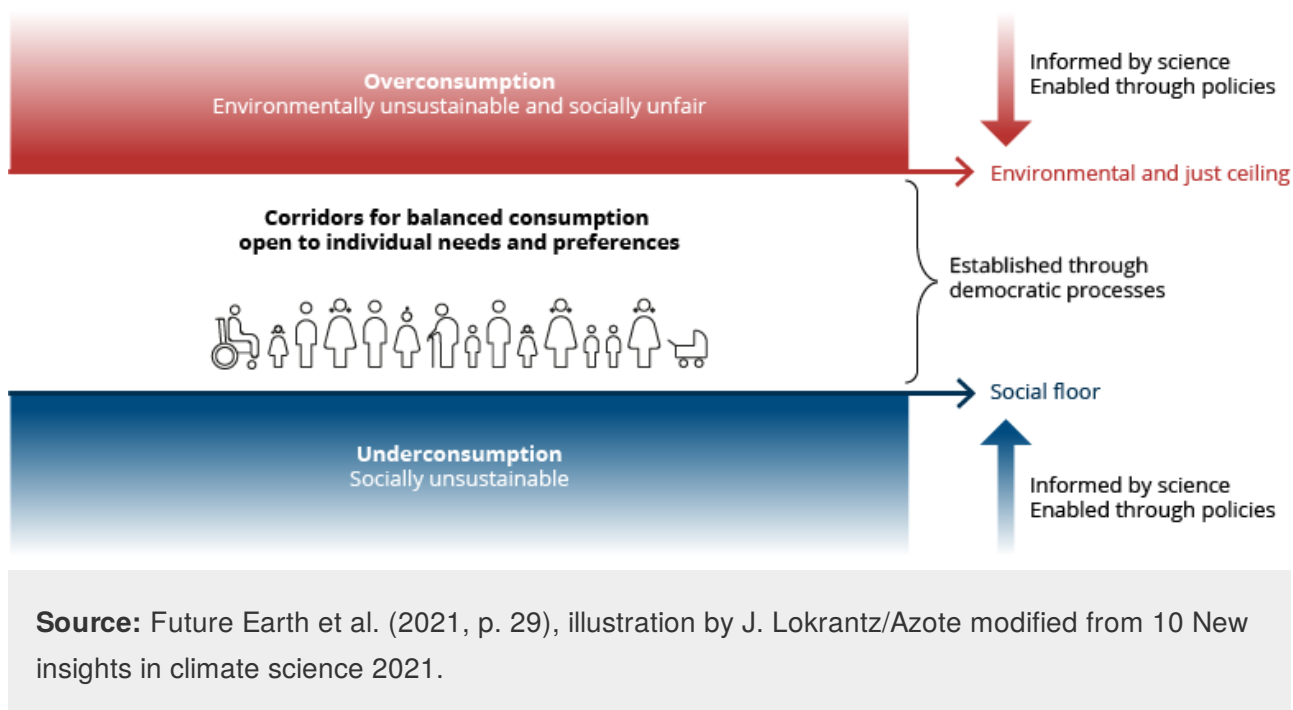
Beyond environmental and climate concerns, there is also a social welfare dimension related to the planetary boundary approach, acknowledging that there are huge consumption inequalities across the globe, and also within Europe. To include the social dimension, Raworth (2012) included to the doughnut economics concept a set of social boundaries, including health, food, water, income, education, resilience, voice, jobs, energy, social equity and gender equality, in addition to the ecologically defined ones. While planetary boundaries describe the outer boundary or ceiling of the safe and just operating space, the social boundaries refer to the social pre-condition, the inner boundary or foundation of sustainable development. The resulting **safe and just operating space** defines a consumption level that allows all people to satisfy their basic needs in a fair and just way while respecting the ecological boundaries. It is called the doughnut due to the shape of the illustration (Raworth, 2012). However, there is not a single country on Earth that is developing within the doughnut — either the ecological limits are being overstretched or the social limits are being undercut (O'Neill et al., 2018).

Reflections on consumption in the safe and just operating space have also led to other recent and related concepts, including the concept of **sustainable consumption corridors** (Fuchs et al., 2021; Di Giulio and Defila, 2021; Di Giulio and Fuchs, 2014; Blättel-Mink et al., 2013) (Figure 1). This

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concept 'can be a good starting point to define criteria of sustainable consumption. Such corridors would be defined by minimum standards, allowing every individual to live a good life, and maximum standards, ensuring a limit on every individual's use of resources in order to guarantee access to a sufficient level of resources (in terms of quantity and quality) for others in the present and in the future' (Di Giulio and Fuchs, 2014, p. 184), thus operating within the planetary boundaries.

Figure 1. Consumption corridors for a sustainable and fair space for all



The question of what constitutes a good life has also put focus on the **well-being economy**, as opposed to the growth economy, which is measured in gross domestic product (Fioramonti et al., 2022; Costanza et al., 2018). The well-being economy recognises that the economy is embedded in nature and society and defines other human goals rather than purely institutional ones, such as physical and mental health, good social relations and a healthy natural environment. The economy of well-being concept has been used by institutions such as the Organisation for Economic Co-operation and Development (OECD, 2019) and the Council of the European Union (Council of the European Union, 2021).

The role of Europe's circular economy in achieving sustainable consumption

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Europe's circular economy is a key EU strategy for addressing resource scarcity, climate change, environmental degradation and biodiversity loss induced by consumption (European Commission, 2020b) (Box 1). A circular economy aims at keeping products and materials in use for the longest time possible; it aims to minimise flows of materials by using less materials and energy to produce new products; and it promotes reuse and recycling strategies to close material cycles. If products and materials can be kept in the economy for longer, then less virgin materials and energy will need to be extracted from the environment, reducing the environmental pressures related to extraction, emissions and waste generation (EEA, 2016).

Box 1. EU circular economy policies targeted at circular consumption

In 2019, the EU adopted the European Green Deal, with ambitious objectives to protect the environment and mitigate climate change. In May 2022, the Eighth Environment Action Programme entered into force (European Parliament, 2022), aiming to align European environmental policymaking with the European Green Deal's ambitions and the Sustainable Development Goals, and to significantly decrease the EU's material and consumption footprints and bring them within the 2050 vision of 'living well, within the planetary boundaries'. This builds on the Seventh Environment Action Programme (2013-2020), which already had a focus on living well, within the limits of our planet (European Commission, 2014).

The second EU circular economy action plan (CEAP), published in 2020, following the first CEAP in 2015, highlights the potential of a circular economy to contribute to reducing Europe's consumption footprint, decouple resource use and its impacts from economic growth, and contribute to the European Green Deal (European Commission, 2019). It contains a set of initiatives aiming to establish a product policy framework that is strong and coherent, making sustainable products, services and business models the norm. As a result of the CEAPs, a number of product-specific policies have been launched, including:

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- In 2018, **A European strategy for plastics in a circular economy** was published (European Commission, 2018), addressing the design, use and recycling of plastics in Europe.
- In May 2020, the **Farm-to-fork strategy** was launched to contribute to the creation of a fair, healthy and environmentally sustainable food system (European Commission, 2020a).
- In March 2022, the **EU Strategy on sustainable and circular textiles** was published (European Commission, 2022a).
- Meanwhile, in the domain of housing and the built environment, the **New Bauhaus initiative** aims to combine sustainability with aesthetics and inclusion (European Commission, 2022b).

In March 2022, the European Commission proposed a **regulation on ecodesign for sustainable products**, which, among other things, extends the EU Ecodesign Directive to a wide range of products beyond those related to energy, provides new eco-design requirements (performance and informative requirements, including the establishment of a digital product passport) and clarifies existing requirements (European Commission, 2022c).

Recently, in March 2023, the European Commission launched a **proposal for a directive on substantiation and communication of explicit environmental claims** (European Commission, 2023b) and a proposal for a directive on **the right to repair** (European Commission, 2023a), which are expected to contribute to more sustainable and circular consumption.

A circular economy can contribute to more sustainable consumption by supporting pathways aimed at (1) consuming differently by shifting to less material-intensive options and using renewable or recycled materials, (2) consuming less through, for example, longer product lifespans or through sharing models that can reduce the demand for new products, and (3) scaling up circular product design that enables circular consumption and reduces environmental impact.

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Consuming differently

Considering the differing intensity of various types of consumption with regard to the environment and climate pressures they cause, **shifting consumption** to alternative, more sustainable and less material-intensive options could be a way to reduce pressures from consumption. Shifting consumption can be achieved through a combination of policy instruments — in particular product policy — circular business models and better informed and guided consumer choices. Discussions in the literature revolve around the question of if and to what extent shifting expenditure from one consumption category to another will actually reduce pressures and impacts (Carlsson Kanyama et al., 2021; Fråne et al., 2021).

To reduce material throughput, **reuse and recycling strategies**, including moving to less material-intensive areas of consumption, are also central to the transition to a circular economy. Increased recycling rates of materials are needed in line with EU policy ambitions (EEA, 2021c). Adequate collection schemes and a reuse and recycling infrastructure should be available and accessible, and consumers should be encouraged to return their used products for proper waste management.

Consuming less

One way to reduce the material use associated with and pressures from consumption is to extend a product's lifespan by enhancing its durability, repairability and upgradability, while maintaining all of its functionality (Konietzko et al., 2020). In fact, **achieving longer product lives** is key to reducing the climate and environmental impacts of products over their total life-cycle. Longer lives of products can lead to less frequent purchases of new products, which saves the resources needed for and pressures arising from producing them. Apart from physical durability, emotional durability is also key. Products should be designed so that consumers want to keep them because they never go out of fashion or can be easily adapted and upgraded. Emotional attachment and product care are, however, reduced if businesses plan obsolescence by shortening product lifespans artificially, hindering repairability and upgradability, or often introduce new products and models, nudging consumers to replace old ones earlier than needed.

Circular business models offer opportunities for consumers to reduce their overall consumption in terms of material or product use (EEA, 2021a; ETC/MMGE, 2021). Collaborative consumption models, for example, allow consumers to participate in sharing or renting, providing temporary access to a product instead of permanent ownership (Luri Minami et al., 2021). A switch to a 'service' economy, where consumers are buying a service instead of a product and producers are responsible for the maintenance of the products, can incentivise brands to offer long-lasting high-quality products.

However, the so-called rebound effect can be a challenge for business models that result in cost savings, as in some cases spending less money on certain products (e.g. if they last longer) can lead to spending money on other goods and services instead (Font Vivanco et al., 2022; Freire González,

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2022).

Scaling up circular product design

Lastly, scaling up circular product design is key in enabling circular consumption (ETC CE, 2022). By following eco-design principles, products can be made to last and be easily maintainable, repairable, upgradable and recyclable. While ecolabels aim to inform consumers and encourage them to make sustainable product choices, product policy has the power to make sustainable products the norm (Lorek et al., 2021). As described in Box 1, the recently proposed regulation on ecodesign for sustainable products suggests an elaborate set of design requirements for products put on the EU market to ensure that they fit within a circular economy (European Commission, 2022c).

Reflections on the way forward

Although the need to change consumption patterns has been acknowledged in EU policy initiatives, and progress has been made in decoupling environmental pressures from consumption growth, many challenges remain. Research suggests that a focus on incremental adjustments to the current system, relying on ‘technofix’ solutions and further efficiency improvements — also called a ‘weak’ approach to sustainable consumption (Fuchs and Lorek, 2005) — will not be sufficient to reduce absolute material resource use and to make the transition to sustainable consumption (Lorek et al., 2021; Bengtsson et al., 2018). It could, at best, postpone environmental pressures and impacts. Increases in efficiency may be overtaken over time by both increasing consumption in growing economies and rebound effects (Kurz, 2019). The handprint concept — explained in Box 2 — is an example of an attempt not only to measure the footprint but also to acknowledge the positive impacts of certain activities. For example, the handprint could measure the positive impacts of creating, proliferating or safeguarding something that is generally desirable (e.g. education or biodiversity) or of activities that reduce the negative impacts of other activities (e.g. cleaning up plastics from the oceans).

Care is needed not to use circular strategies to fuel economic growth strategies that eventually will lead to increases in material consumption and increased pressures (EEA, 2021c; Kovacic et al., 2019). For example, a focus on downstream solutions, such as recycling targets, may not be sufficient to change consumption patterns and achieve a reduction in overall environmental impacts (Bengtsson et al., 2018).

While the original idea of green growth (OECD, 2011) has found its way into many EU and global policies, some scholars have proposed more disruptive concepts such as post-growth, (Wiedmann et al., 2020), degrowth (Demaria et al., 2013), beyond growth (OECD, 2020) and the well-being economy (Costanza et al., 2018). Some of these concepts — in particular the economy of well-being

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— are now increasingly being recognised by international organisations such as the Organization for Economic Co-operation and Development (OECD, 2019) and the EU institutions (Council of the European Union, 2021).

Many authors have suggested that existing policies targeting supply and production should be complemented with ambitious demand-side measures to steer consumption in a sustainable direction, for example by including a sufficiency approach in policymaking as a complementary strategy to efficiency and consumption shifts (Creutzig et al., 2022; Lorek et al., 2021; Bengtsson et al., 2018; Pantzar et al., 2018; Jackson, 2009). While it is clear that such changes would reduce material consumption, they would also present many challenges and require a fundamental mindset shift, as well as societal transformations (Büchs and Koch, 2019). This calls for rethinking the concepts of growth, progress and well-being beyond consumption (EEA, 2021c).

Box 2. The handprint concept

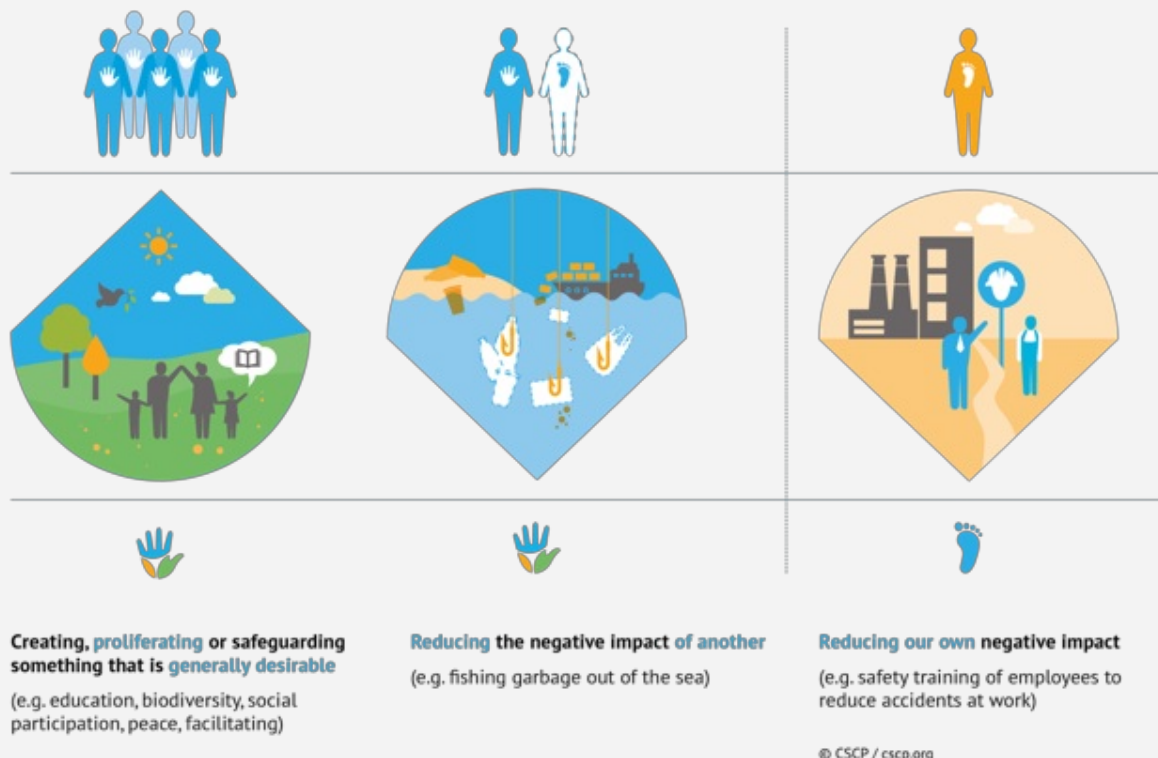
In contrast to the well-known footprint approach that measures negative ecological impacts, the handprint evaluates the impacts of individuals, organisations or countries in three dimensions of sustainability — ecological, economic and social — and integrates positive aspects. It goes beyond the net zero goal of doing no harm to a regenerative system view of adding something good (Gibbons, 2020; Kühnen et al., 2019, 2017).

As shown in Figure 2, the handprint can refer to creating, proliferating or safeguarding something that is generally desirable, or to reducing the negative impact of another activity.

Figure 2. The handprint concept

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HAND OR FOOT? Three cases of positive sustainability impacts and their imprint



Source: Collaborating Centre on Sustainable Consumption and Production.

The handprint thus offers an additional positive perspective and makes the positive impacts of this type of sustainable strategies visible. Looking at the social dimension, an example of a desirable effect is the better health and quality of life of a person who uses a bicycle rather than a car (WHO Europe, 2021). Another example would be people who engage in repair cafés and not only reduce the footprint of a product by repairing it but also increase social well-being and inclusion by cooperating with others (Moalem and Mosgaard, 2021; van der Velden, 2021; Pesch et al., 2019). Consumers can also reduce the negative footprint of another person by, for example, buying a refurbished smartphone that would otherwise have been disposed of long before its potential lifespan had ended.

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Another positive ‘side-effect’ of reuse and repair strategies is the creation of new jobs. RREUSE found that, on average, a social enterprise engaged in the reuse sector creates 70 jobs per 1,000 tonnes of collected material. For textile reuse, the equivalent is 20-35 jobs, for multi-household product reuse it is 35-70 jobs and for electronic and electrical equipment reuse it is 60-140 jobs (RREUSE, 2021). Here, not only do those who reuse an item, for example by buying a repaired product, add to their handprint, but those who take a product to a repair service also do, because they are reducing their own footprint and at the same time supporting an additional desirable effect — job creation.

The handprint opens up a new dimension of sustainable consumption strategies because it not only communicates the reduction of something negative, but also shows the positive effects that can be achieved by certain actions. Consumers can thus get a better understanding of how they can participate in the transition to a more sustainable economy of consumption and production.

Notes

[1] The planetary boundaries, in the revised version by Steffen et al. (2015), include (1) climate change; (2) changes in biosphere integrity (biodiversity loss and extinctions); (3) stratospheric ozone depletion; (4) ocean acidification; (5) biogeochemical flows (phosphorus and nitrogen); (6) land system change; (7) freshwater use; (8) atmospheric aerosol loading; and (9) the introduction of novel entities (chemical substances).

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