

Sustainable Resource Use & Circular Economy – The political landscape

Background paper for the European Resource Forum 2022

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1 Background

We live in an era of unprecedented natural resource¹ extraction and use, which has more than tripled in the last five decades. Following current trends, global material use is estimated to double by 2060 (IRP, 2019a; OECD, 2019) and by 2050, annual waste generation is projected to increase by 70% (Kaza et al., 2018). This overexploitation is the result of an unsustainable use of natural resources based on linear extraction, processing and quick consumption and disposal of resources. The negative social, economic, and environmental impacts of this economic paradigm have become more explicit in the last decades. According to estimates from the International Resource Panel (IRP), natural resource extraction and processing accounted for more than 90% of global biodiversity loss, more than 90% of water stress and about 50% of global greenhouse gas emissions in 2017 (IRP 2019a).

Regarding social and economic impacts in the EU context, an issue of immediate urgency is the steadily growing resource dependency. It stems from a long history of fulfilling the demand for certain key raw materials and fuels on the global market, where supply is often concentrated on a few countries (Langsdorf et al., 2022). This has left the EU particularly vulnerable to supply chain shocks and to the political instrumentalisation of these dependencies. For instance, the list of raw materials classified as “critical” (based on their economic importance and supply risk) has grown from 14 entries in 2011 to 30 entries in 2020, with China being the main supplier to the EU for at least seven of them (EC, 2020b). This vulnerability has become very explicit through widespread disruptions in several value chains caused by lockdowns and other measures aimed at curbing the spread of COVID-19, particularly in China (Lafrogne-Joussier et al., 2022). Furthermore, these shocks have recently been followed by massive supply shortages and rapidly growing prices of natural gas and other commodities due to the Russian invasion of Ukraine (Liadze et al, 2022).

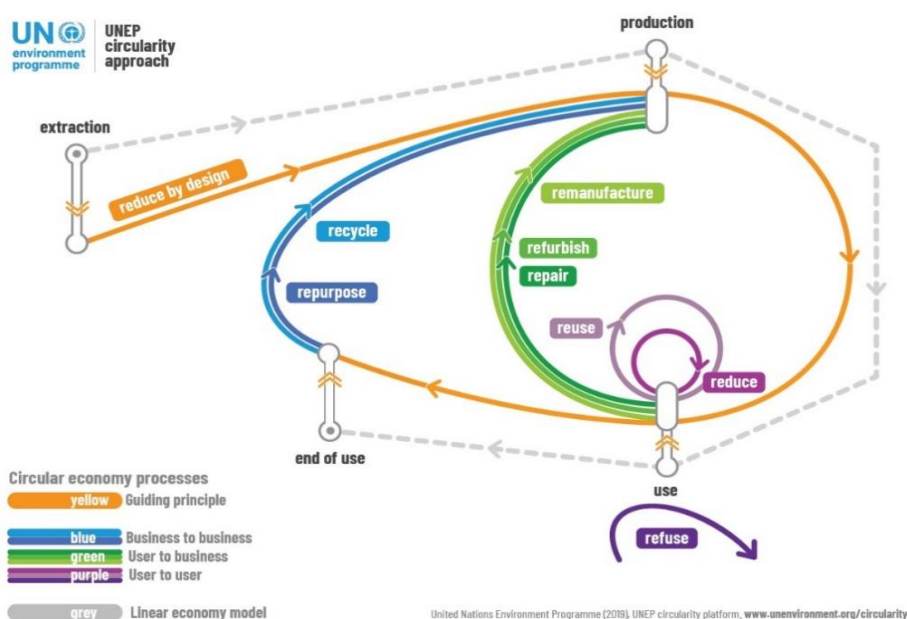
All the above-mentioned issues highlight the increasing urgency to reduce overall resource consumption. One crucial strategy for doing so is transforming the economy to become less resource intensive and more **circular**, i.e. more sustainable and resilient towards disruptions. Following UNEA (2022), the transition towards a circular economy (CE) implies that²:

“...products and materials are designed in such a way that they can be reused, remanufactured, recycled or recovered and thus maintained in the economy for as long as possible, along with the resources of which they are made, and the generation of waste, especially hazardous waste, is avoided or minimised, and greenhouse gas emissions are prevented or reduced”

¹ Resources — including land, water, air and materials — are seen as parts of the natural world that can be used in economic activities to produce goods and services (IRP, n.d.)

² There is no universally accepted definition of CE, but this one reflects the international political consensus

Figure 1: visualisation of the UNEP circularity approach



Source: UNDP 2020, p.7

This transition needs to integrate a myriad of interconnected approaches that can include: extending the lifetime, intensifying the use and increasing the re-use or remanufacture of products, as well as increasing the use of recycling of materials. As the unsustainable use of resources lies at the interface between the multiple crises that humankind is currently facing (e.g. climate, biodiversity, pollution and resource dependencies), policies that systematically address the reduction of resource use (e.g. through a CE transition) constitute a potentially important lever to address all of these crises simultaneously.

The following paper outlines the current debates surrounding sustainable resource use and CE in selected international organisations and reflects on the progress in the last three decades (see chapter 2). Moreover, it highlights promising fields of action throughout these organisations which offer particular opportunities to bring forward CE as means to address the multiple crises and their implications for political processes (chapter 3).

2 Ongoing Debates on Sustainable Resource Use and Circular Economy of Key Actors at International Level

2.1 European Union

In the EU, policies started including elements of resource efficiency (RE) and CE as early as the 1980's. However, it has only been in the last two decades that sustainable resource use and circular economy principles have gradually become central aspects of the Union's strategic resource policy (Langsdorf, 2021). For example, the objective of decoupling waste generation from economic growth was first formulated in 2001³.

³ See the Environment Action Programme of 2001 - https://ec.europa.eu/commission/presscorner/detail/en/IP_01_102

In terms of resource security⁴, the EU adopted the Raw Materials Initiative in 2008⁵. In this context, the concept of critical raw materials was developed⁶ and the first list of critical raw materials published in 2017. In 2015, the EU Action Plan for the Circular Economy⁷ was adopted. It highlighted the importance of CE in terms of business opportunities, e.g. in reducing the impact of resource scarcities and price volatility while creating new jobs (Milios, 2018).

Towards the end of 2019, the EC announced a new, overarching policy framework that also includes actions on sustainable resource use and CE: the European Green Deal (EGD). The EGD represents an important paradigm shift, as it marks the convergence of previously separated social, economic, and environmental policy fields towards a common objective (EC, 2019):

“[...] to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use”.

The fact that resource decoupling appears, next to climate neutrality, as an overarching goal also highlights the strategic relevance that sustainable resource use and CE have in this new agenda. In order to reach the EGD objective, a series of transformations with profound changes to production and consumption systems will be required, with significant shifts in natural resource use (Best et al., 2021). Given the shared reliance of some of these transformations (e.g. food, mobility and energy) on natural systems (as a source of resources and a sink for waste and emissions), addressing problems in one area can cause unintended harm elsewhere (EEA, 2019). In response, the EGD aims to accelerate multiple transitions simultaneously and in a coordinated fashion, thus calling for a resource nexus⁸-based approach that transcends traditional sectorial mandates (for more on the EGD and the resource nexus, see Best et al., 2021).

Within the remit of the EGD, a new Circular Economy Action Plan⁹ (CEAP) was adopted in 2020. It is currently the most important EU document on sustainable resource use and CE policy. The CEAP identifies “key value chains”¹⁰ to focus on, rather than material groups as its predecessor. This framing reflects the overall EGD narrative of interrelated transformations.

The implementation of the CEAP has been most recently centred around its strong emphasis on creating a “sustainable product policy framework” (EC, 2020a). The centrepiece of action in this field is the proposal for a Regulation on Ecodesign for Sustainable Products, which was presented by the commission in March 2022 along with other interlinked initiatives. If adopted in its present form, this regulation would repeal current Ecodesign Directive rules which concentrate on energy-related products. Hence, the new proposal outlines a general framework for setting ecodesign requirements for sustainable products, such as: durability, reusability, reparability, upgradability, recyclability and the reduction of overall environmental harm (Šajin, 2022). The rules proposed would apply to all products placed on the internal market, except for food, feed, and medicinal products (EC, 2022). One of the most relevant measures proposed by the new Ecodesign Directive proposal are so-called digital product passports to improve sustainable consumption decisions. These would contain information related to the environmental sustainability of products as a requisite for putting products on the EU market. Other important

⁴ Securing reliable and unhindered access to raw materials, which are of utmost importance to the EU

⁵ COM/2008/0699 final

⁶ COM/2011/0025 final

⁷ COM(2015) 614 final

⁸ The concept of ‘resource nexus’ recognises that food, energy, water, land, materials and ecosystems are interconnected across space and time (EEA 2019)

⁹ COM/2020/98 final

¹⁰ The seven key value chains of the CEAP are: electronics and ICT; batteries and vehicles; packaging; plastics; textiles; construction and buildings; and food, water and nutrients

measures are, for instance, setting mandatory requirements for green public procurement and the banning of destruction of unsold consumer products (EC, 2022).

2.2 G7

The G7 is currently one of the leading organisations discussing and sharing best practices related to sustainable resource use and CE. An important milestone has been the establishment of the G7 Alliance on Resource Efficiency (G7 ARE) during the German G7 presidency in 2015. The G7 ARE is understood to be a forum to share knowledge and create information networks on emerging topics related to RE and CE (Ministry of the Environment, Japan, 2019).

The current G7 and G7 ARE action related to resource efficiency and CE is mainly structured around periodically reviewed documents that synthesise the G7 members' commitments on common principles, goals, priority action areas. The most recent document is the Berlin Roadmap which was adopted in May 2022. The Berlin Roadmap proposes both a set of overarching actions¹¹ and a list of selected “High-Impact Value Chains”¹² on which to focus work. These are complemented by a list of specific activities which should be carried out within the three years of the roadmap’s duration (G7, 2022a).

Moreover, the Berlin Roadmap is defined as a “systemic approach” that should be promoted across all sectors and “promote policy complementarity” in order to “contribute to reducing the climate, biodiversity and pollution impacts of material use” (G7, 2022a). Furthermore, it emphasises that all “relevant action should consider the social dimension of resource efficiency and circular economy measures” related to the disproportionate distribution of the above mentioned impacts across population groups and generations¹³. Against this background, it defines the respective CE approach of the G7 as one that is systemic, works across policy areas and incorporates social justice considerations. While the roadmap itself focuses on the environmental crises, the communiqué with which it was released stresses the challenges posed by the Russian invasion of Ukraine. Thus, it highlights the need to work towards resilient and sustainable supply chains, particularly regarding critical minerals and raw materials (G7, 2022b).

2.3 G20

Analogous to the G7, the G20 has also established its own forum for exchange in 2017, the G20 Resource Efficiency Dialogue (G20 RE Dialogue). In this context, a Roadmap for the G20 Resource Efficiency Dialogue was developed in 2019 and updated in 2021 (G20, 2021b). The roadmap consists of seven points of action with an annex listing particular “topics and activities voluntarily advanced by G20 members”¹⁴. In this context, the 2021 G20 Environment Ministers Communiqué identifies resource efficiency and CE as key actions for the achievement of the

¹¹ E.g. deepening the exchange on eco-design of products with a life-cycle perspective or promote integrated solutions with co-benefits for sustainable development, biodiversity protection and climate change adaptation and mitigation such as Nature-based Solutions.

¹² The High-Impact Value Chains are: construction and buildings; food loss and waste; Information and Communication Technologies (ICT) and electronics; mobility; plastics; textiles and fashion; waste management, recycling technologies, transboundary movements of waste.

¹³ For further information on this issue, please read the background paper of the third plenary session of the ERF 2022 “*Sustainable Resource use and Circular Economy – the Social Dimension*”.

¹⁴ The topics are broken down into different activities and linked to specific g20 members. These are: Sustainable production and waste; Plastics and marine litter; Sustainable and circular cities; Circular fashion and textiles; Food loss and waste; Climate change and other global environmental challenges; International activities; and Horizontal issues

Sustainable Development Goals (SDGs) and for tackling the multiple environmental crises of climate change, biodiversity loss, land degradation and pollution (G20, 2021a).

The G20 RE Dialogue has been constantly expanding its scope and has shown consensus on the necessity for sustainable resource use and CE within the G20 since its inception. Nevertheless, it has recently faced a significant setback, namely, the G20 environment ministers' meeting in 2022 was not able to agree on a joint communiqué. Objections by some members regarding the language used with relation to climate action and the war in Ukraine appear to have been at the centre of the disagreement (Lamb and Budiman, 2022). Still, a Chair's Summary¹⁵ has been released which reaffirms the commitment to the G20 RE Dialogue Roadmap 2021 – 2023 but makes no new additions to it. These disagreements point to the difficulty of finding common ground in a group as diverse as the G20, particularly in the face of very contentious issues.

2.4 International Resource Panel

The International Resource Panel (IRP) is a global science-policy platform established by the United Nations Environment Programme (UNEP) in 2007. The aim of the IRP is to “build and share knowledge needed to improve our use of natural resources”, while including scientists, governments, and other actors from across the globe¹⁶. Even if it has no political mandate, the research of the IRP has been very influential in shaping the debate surrounding sustainable resource use and CE since its formation. This is, for instance, reflected by the fact that the EU, G7 and G20 make references to IRP publications as sources that highlight the urgency of a CE transformation. Some important studies by the IRP have also been commissioned and financially supported by these organisations.

The IRP's most influential publication is its flagship report the Global Resource Outlook (GRO), which was last published in 2019. The GRO is highly relevant because it offers a comprehensive source of quantitative information related to resource use, its impacts, and projections for the future. Nonetheless, in its latest Work Programme, the IRP recognises the critical need to reposition itself “from a knowledge provider to a provider of action-oriented solutions that support the ambitious policy transformation needed in a decade of environmental tipping points” (IRP, 2022). The urgency for action is also very much reflected in its recent publications that increasingly highlight the need for concerted action on natural resource management and other political agendas. These include, for instance, think pieces on achieving the SDGs (IRP, 2019b) and on biodiversity conservation (IRP, 2021). Two of the most impactful reports of the IRP, however, have dealt with the climate-resource nexus: one with the economic and climate mitigation potential of resource efficiency (UNEP, 2017), the other with specific efficiency strategies that would enable a low-carbon future (IRP, 2019c). Moreover, other publications highlight the need for systemic changes. For instance, they illustrate how we define value in products (IRP, 2018) and on science-based targets for policy action that can help identify key points of intervention within economic systems (UNEP, 2021).

2.5 OECD

The OECD has been a pioneer organisation regarding sustainable resource use and CE. Its work related to this issue is mainly distributed among two topics of its Environment Directorate:

¹⁵ G20 Chair's Summary Joint Environment and Climate Ministers' Meeting August 31, 2022 - https://g20.org/wp-content/uploads/2022/09/G20_JECMM_Chairs-Summary-2022.pdf

¹⁶ <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/international-resource-panel>

Biodiversity, water, and natural resource management; resource productivity and waste. Its most influential publication related to natural resources in recent years has been the Global Material Resource Outlook to 2060 (OECD, 2018). Similar to the GRO 2019, it presents global projections of resource use and its environmental consequences, but it focusses specifically on materials. Moreover, it offers a quantitative outlook to 2060 at the global, sectoral, and regional levels for these materials, a level of detail that is not present in the GRO 2019. As the projections include both primary and secondary materials, they also allow a deeper understanding of the synergies and trade-offs between material extraction and recycling (OECD, 2019).

Another relevant work of the OECD in the present political situation is its 'Focus on green recovery'. The purpose of this focus is to monitor the proposed COVID-19 recovery budgets of OECD countries and rate how green they are according to a set of criteria. According to this data, only about 2% of environment-related recovery spending has been allocated to improving waste management and recycling, and less than 1% has been directed towards green research and development crucial for innovation (OECD, 2022).

3 Moving Forward: Strengthening Sustainable Resource Use and Circular Economy to Address the Multiple Crises

As outlined above, there are synergies between most of the debates in international organisations; in some cases, they converge towards similar issues. While this may also be a consequence of their interlinkages (for instance, the EU is member of G7, G20 and the steering committee of the IRP), the convergence of these agendas on certain topics reflects their mainstreaming and therefore an important opportunity to continue the work on sustainable resource use and CE. The three main aspects identified as 'common denominators' and their implications for political processes are outlined below.

3.1 A systemic change

The European Green Deal (EGD) identifies the emphasis on advancing an overarching, systemic change as a guiding principle. Moreover, it is also present in the Berlin Roadmap and the G20 Resource Efficiency Roadmap and also points indirectly to it by making references to social justice and SDGs. However, none of these organisations have actually put forward concrete guiding principles and strategies to achieve this systemic change so far. In this context, a report by Systemiq and Club of Rome (2020) tried to develop a 'system change compass' as a means to offer guidance for the EGD. The background of this report is the specific opportunity presented by the simultaneous occurrence of the COVID-19 pandemic and the EGD. According to this logic, the disruption created by the pandemic and the resulting recovery funds should offer the right setting for bringing forward the systemic changes that lie at the core of the EGD. For this purpose, the report defines ten principles that should guide this system change, all framed around the idea of "redefining". For instance, one principle is "redefining prosperity", which foresees a more balanced "policy attention from income and wealth creation to income and wealth distribution". Another one is "redefining progress", which aims at ensuring "that societal needs are met inside a safe operating space and respecting planetary boundaries" (Systemiq and Club of Rome, 2020). The level of detail to which the study breaks down the necessary aspects required for such an overarching transformation certainly highlights its complexity and potential

challenges for the realisation of this change. The urgency of the multiple crises demands the serious consideration of this implementation. Moreover, as the OECD work on green recovery shows, actual national policies targeting the recovery of the COVID-19 pandemic have fallen short of including long-term sustainability goals related to sustainable resource use.

3.2 Integrated policies through nexus thinking

The importance of the resource nexus for policymaking addressing the multiple crises has also been highlighted by all the organisations described. Recognising that the agendas on critical materials, climate change, biodiversity, and pollution all converge on the common point of sustainable resource use and CE highlights the need to consider them collaboratively from the outset. Continuing with isolated policies is unlikely to work, as such measures hardly consider mutual effects with other fields. This can lead to goal conflicts and trade-offs which can be prevented through coordinated action. However, due to the traditionally compartmented way in which policies are developed, silo culture and a lack of cross-departmental policymaking are currently the rule rather than the exception (Hirschnitz-Garbers, Araujo Sosa and Hinzmann, 2022). While the EGD already presents an important precedent towards breaking the silos, it remains an important challenge, especially given the increasing amount of policy fields being integrated.

3.3 Focus on products and value chains rather than material streams

A shift in focus to products and value chains instead of material flows can also be observed in all relevant organisations, while the G20 in particular still focuses part of its actions on plastic and food waste. The focus on value chains as proposed by the IRP is the most ambitious, but it only considers three value chains at present: food, construction and textiles (UNEP 2021). Such an approach aimed at defining science-based targets requires vast amounts of information so it can be thought of as a work in progress that could potentially be expanded to cover all the relevant value chains considered by the EGD and the G7 and G20 roadmaps. The work of the OECD on value chains also offers important inputs in this respect. The development of such value chain analysis could also make use of the information generated through the implementation of the ecodesign requirement provisions of the proposed new EU Ecodesign Directive. However, as with non-financial reporting, generating information is associated with high costs and requires standardisation be useful to both companies and society (PwC, 2021).

Guiding questions for the plenary session

1. Can an overarching change in the economic system be achieved, so that absolute resource use is reduced, and circularity increased across all sectors? If so, where should we start?
2. Can we bring the different policy fields related to the climate, biodiversity, pollution and resource dependency crises closer together through sustainable resource use and the circular economy? How can we better coordinate actions across departments to overcome existing silo thinking?
3. How can we increase the information related to circularity in products and relevant value chains in order to improve action in them? What are potential bottlenecks and what opportunities does digitalisation offer?

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