

# Sustainable Resource Use and Circular Economy – the Social Dimension

Background paper for the European Resource Forum 2022

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## 1 Background

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While natural resources<sup>1</sup> form the basis for food generation, housing, energy supply, and many more products and services for societies worldwide, their use has increased to levels previously unknown in the past decades (Haigh et al., 2021). These unprecedented levels of resource use affect the global community: social impacts in primary production of resources as well as sourcing from waste range from poor working conditions to health impacts and structural discrimination against vulnerable groups. Furthermore, the current scale of resource use is a strong driver<sup>2</sup> of multiple crises (such as climate change, biodiversity loss, and pollution) and the transgression of planetary boundaries<sup>3</sup>. These crises impact people and society by leading to food and water scarcity, social conflicts, and displacement. For example, the production of agricultural products such as palm oil, coffee, and cocoa leads to deforestation, land use conflicts, as well as an increase in water stress (SYSTEMIQ et al., 2022).

While the use of primary raw materials is integral to any economy, the reduction of primary raw materials<sup>4</sup> use is considered the most important step towards resource use within the planetary boundaries. Before this backdrop, an increasing number of countries are beginning to develop policies aimed at reducing resource use<sup>5</sup>. The EU has become a frontrunner in this respect (European Commission, 2015, 2019, 2020). However, the System Change Compass (SYSTEMIQ et al., 2022) cautions that: **“individual efforts and EU policies that are at odds with a shift towards green, just, and resilient economies and societies elsewhere can never bring a green, just, and resilient future for Europe. In a globalised world, transforming Europe’s economy and way of life also means transforming the EU’s relationships with partners globally. The EU not only has a duty to mitigate negative external impacts and trade-offs, but also a unique opportunity to reshape the resource-driven global governance system founded in the era of colonialism”**.

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<sup>1</sup> 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.).

<sup>2</sup> Compare to ERF2022 background paper “Sustainable Resource Use and Circular Economy – the political landscape”

<sup>3</sup> Compare to ERF2022 background paper “50 years of ‘Limits to growth’: what has been achieved - what needs to be done?”

<sup>4</sup> The term raw materials encompasses materials that are used to manufacture products.

<sup>5</sup> The use of resources is considered sustainable if both resource extraction and deposition (in the form of waste and emissions) is kept at a level that ensures the material basis for a society and its future generations (IRP, 2019). To achieve this kind of sustainable resource use, a set of strategies for resource conservation can be implemented. These include minimizing product need through better system design, optimizing product design, maximizing the lifespan of products and minimizing waste and pollution (IRP, 2022).

Nonetheless, possible effects on the Global South and resource-producing countries are not explicitly addressed in the EU Circular Economy Action Plan (European Commission, 2020a), the current central EU policy on the topic (Langsdorf, 2021).<sup>6</sup> In this text, “Global South”<sup>7</sup> refers to poor countries as much as groups negatively affected by globalization all over the world.<sup>8</sup>

Circular economy measures in the Global North, such as EU policies, can have both positive and negative impacts on the Global South (Preston et al., 2019; Brink et al., 2021). For example, increased requirements for verifiably sustainable production may necessitate technical innovations and certifications. This incurs costs and requires investments that can be difficult for small, medium, and micro enterprises to afford (Manhart et al., 2015). Careful analysis of measures to improve sustainable resource use at the national or regional level is therefore important to avoid unintended consequences.

Vulnerable groups<sup>9</sup> are often exploited in the production of raw materials and existing inequalities are widely neglected in policy and society. Unequal starting opportunities are experienced by various groups who live under poor conditions, e.g., through low educational opportunities. Weak governance<sup>10</sup> and social structures are complemented by the strong market power of multinational corporations, leaving little room for action at the local level and further entrenching inequalities (Sennholz-Weinhardt et al., 2022).

## 2 Social Impacts of Resource Use and Circular Economy

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Resource extraction and use has an impact on society along the entire life cycle. In the following section, possible social impacts are exemplified for the beginning of the life cycle (examples of mineral and biogenic resource extraction and processing) and the end of the life cycle (example of e-waste).

### 2.1 The Social Dimension of Mineral Raw Material Extraction

A major share of the biotic and abiotic raw materials produced in low and low-middle income countries is exported to upper-middle and high-income countries. In these, the greatest value creation takes place (SYSTEMIQ et al., 2022). The EU, for example, is heavily dependent on the import of a large variety of mineral raw materials from third countries (European

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<sup>6</sup> See also the ERF2022 background paper “Sustainable Resource Use and Circular Economy – the political landscape”

<sup>7</sup> There are at least three definitions of Global South. For a discussion of the term refer to: <https://onlineacademiccommunity.uvic.ca/globalsouthpolitics/2018/08/08/global-south-what-does-it-mean-and-why-use-the-term/> and <https://globalsouthstudies.as.virginia.edu/what-is-global-south>, accessed 23.10.2022. For a list and map of countries in the Global South and North visit <https://worldpopulace.com/global-south-countries/> accessed 22.10.2022.

<sup>8</sup> Many sources refer to country groups by income, using the World Bank's classification of low, lower-middle, upper-middle, and high-income countries<sup>8</sup>. The definitions therefore differ and have been largely retained, even though there is significant overlap. See World Bank economic classification of countries here: <https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html>, accessed, 22.10.2022

<sup>9</sup> According to the UN (United Nations, n.d.) vulnerable groups include people of African descent, indigenous peoples, Roma, Sinti and travellers, people belonging to national or ethnic, religious, and linguistic minorities, migrants, refugees, and internally displaced persons, people living in extreme poverty, women, and LGBTQI+ people. Due to progressive environmental impacts and depleted resources, younger generations should also be explicitly addressed in this context.

<sup>10</sup> Governance performance is, for example, expressed in the World Bank Governance Indicators: <https://databank.worldbank.org/source/worldwide-governance-indicators>

Commission, 2020b). Hence, the circular economy has become an important part of EU policy: it is a way to kill several birds with one stone and reduce the overall raw material demand, make the supply chains more resilient, and reduce the environmental impacts of raw material extraction in one go.

Reducing the consumption of primary raw material can have a variety of effects on raw material exporting low-income countries. If high-income countries were to import fewer raw materials, resource producing, low-income countries could lose income from revenues and taxes. This might, in turn, result in an economic downturn and consequently destabilize a country's society (de Jong et al., 2016). Nevertheless, more affordable commodity prices might also facilitate access to raw materials for low- and low to middle-income countries. These are needed for economic development and job creation (Langsdorf and Duin, 2022).

Revenue from mining is a relevant source of income for some countries. However, the positive impact of revenues and taxes can be negated by poor governance and corruption. In addition, mining companies may not apply responsible mining practices due to insufficient regulations and lack of law enforcement. This translates into poor working conditions (such as low wages, insufficient workers' rights and occupational health and safety measures) and poor mine-site management. The lack of local community involvement and redress can result in forced displacement and loss of livelihoods. Indigenous communities in particular can suffer from a lack of recognition of their autonomy and needs. Especially in artisanal and small-scale mining, child labor and informal work are a concern (Schüler et al., 2016).

Resource extraction can be used to finance armed conflicts that lead to destabilization. The armed conflict in the Democratic Republic of Congo (DRC)<sup>11</sup> might be the most prominent example currently. The bloody conflict has strongly stimulated the development of standards and supply chain due diligence in the mining sector. Further conflicts around mining are associated with environmental destruction, missing social acceptance, and forced displacements (Schüler et al., 2016).

## 2.2 Undesired Side-Effects from increased Demand of Biogenic Resources

There is a trend towards the use of bio-based materials as substitutes for mineral raw materials. However, the increased demand for biogenic raw materials in the EU is likely to lead to an increase in imports. In consequence, land use for the cultivation of biogenic raw materials in third countries may increase to satisfy the EU's demand for biogenic raw material (Möller, 2020).

The bioeconomy<sup>12</sup> can provide income opportunities for low- and low-to-middle-income countries (Langsdorf and Duin, 2022). However, it can also increase pressure on intact ecosystems and intensify land-use competition, land grabbing,<sup>13</sup> and water stress (Wolff et al., 2020). The

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<sup>11</sup> For further reading see: the DRC case study in In the EU project STRADE (2016): [https://www.stradeproject.eu/fileadmin/user\\_upload/pdf/STRADE\\_country\\_case\\_studies\\_Rwanda\\_DRC.pdf](https://www.stradeproject.eu/fileadmin/user_upload/pdf/STRADE_country_case_studies_Rwanda_DRC.pdf)

<sup>12</sup> The European Commission defines bioeconomy as “*using renewable biological resources from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy*”. Link: [https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy\\_en](https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy_en), accessed 27.10.2022”

<sup>13</sup> Cochrane (2016) defines land grabbing as follows: ““Land grabbing” is the sale or lease of land that is used on a permanent, seasonal, or cyclical basis by individuals who have not agreed to the transfer of that land, whose land is taken by illegal means, with or without force.” The UN Food and Agricultural Organization furthermore has published an in-depth discussion of the term. <https://www.fao.org/family->

loss of land leads to the displacement of local communities and the destabilization of their lives. The UN states that preventing land grabbing is critical to food security<sup>14</sup>. Massive land acquisition by foreign companies reduces the ability of countries in the Global South to leverage agricultural production for their own economic transition (Langsdorf and Duin, 2022) and wellbeing.

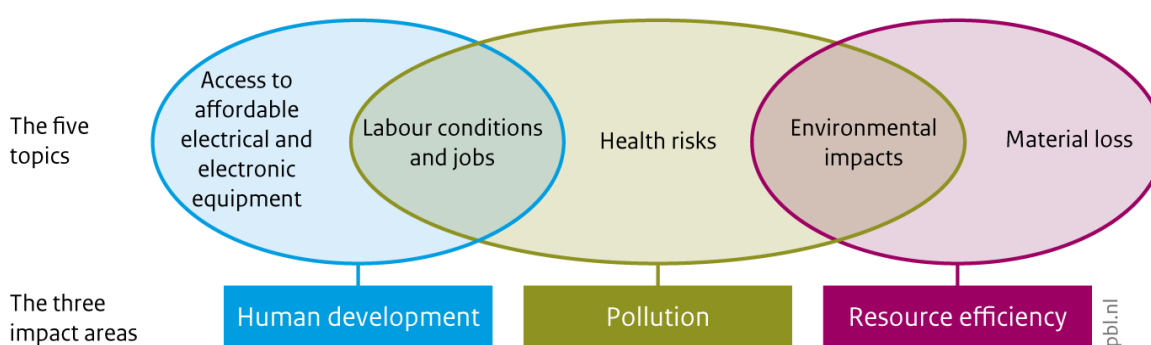
There is a link between land rights, poverty reduction, food security and economic empowerment. At the same time, women make up 43% of the labour force in the agricultural sector. Yet women rarely own land or have any other kind of control over the country, which makes them particularly affected (Sida, 2015).

## 2.3 Social impacts of resource use and e-waste in the Global South

The market for Electrical and Electronic Equipment (EEE) has grown significantly in recent years, with further growth projected in both Global North and South. In Africa alone, demand for EEE products is increasing by 2.5% annually (Ellen McArthur Foundation, 2022). This growing market demands increasing raw material consumption and steadily increasing quantities of Waste from Electrical and Electronic Equipment (WEEE or e-waste)<sup>15</sup> and waste flows. In 2019 alone, an estimated 53.6 million tons of e-waste were generated globally, of which 44.3 million were destined for uncertain disposal (Meysner and Urios, 2022). Thus, the sustainability of resource consumption is directly affected at the global level.

E-waste<sup>16</sup> in the Global South can end up in landfills, leading to environmental pollution issues such as soil, water, and air contamination as well as the exposure of workers to harmful substances (Meysner and Urios, 2022; Langsdorf and Duin, 2022; Brink et al., 2022). Nonetheless, many livelihoods depend on work in e-waste handling. New and sustainable business models around e-waste are increasingly emerging not only in the EU but also in the global South (Ellen McArthur Foundation, n.d.; Bingham and Nartey, 2021).

Brink et al. (2021) identify three impact areas related to the handling of e-waste: 1) pollution, 2) human development and 3) resource efficiency (cf. Figure 1). These three areas are interconnected, each relating to a set of overlapping topics.



Source: PBL

Figure 1: The main impact areas and topics of e-waste in low- and middle-income countries. Source: Brink et al. (2021)

[farming/detail/en/c/1010775/](https://news.un.org/story/2012/03/406262). In 2012, the UN adopted voluntary guidelines against land grabbing or “responsible access to and ownership of land, fisheries and forest”. <https://news.un.org/story/2012/03/406262>.

<sup>14</sup> See <https://news.un.org/story/2011/10/390162>

<sup>15</sup> The term WEEE includes hardware and other electrical appliances (from fridge to toothbrush) that are covered by the European WEEE Directive (European Commission 2022).

<sup>16</sup> Synonym for WEEE (Electrical and Electronic Equipment).

The second-hand market can make mobile phones and computers affordable to the public (Brink et al., 2022). Access to computers and cell phones brings about access to information, to education, and to banking. The latter leads to enhanced financial inclusion for people in remote areas through mobile money accounts.<sup>17</sup> Therefore, human development is linked to trade in used EEE (Brink et al., 2022). However, low-quality e-waste is often declared as used EEE (Amorim and Pulla, 2014) and may be shipped illegally to low-income countries (Basel Action Network, 2018). It then has no real value or reusability and may easily end up in the informal sector (Ellen McArthur Foundation, n.d.), presenting exacerbated risks for health and environmental pollution.

Resource efficiency refers to “how much material is recovered from e-waste, in terms of actual material recovery rates as well as their economic value.” (Brink et al., 2021). It is linked directly to the circular economy principles of keeping products in use as long as possible through reuse, refurbishment, and repair before recycling. In this framework, the ‘right to repair’ for example, depending on its design, could lead to resources remaining in the EU. This could create jobs in the EU but also lead to a loss of income in the e-waste sector (Meysner and Urios, 2022) and reduce access to affordable electronic goods in low and low-middle income countries.

### Women and children in the e-waste sector

Women in the waste sector are mainly limited to informal<sup>18</sup>, low-income occupations (waste picking, sweeping, waste separation) and are excluded from decision- or policy making (UNEP-IETC and GRID-Arendal, 2019). Whereby intersectionality<sup>19</sup> (e.g., female migrants) must be factored in. Waste pickers, of which women account for up to 30% of the workforce (Brink et al., 2021), dismantle e-waste, which includes open fires for burning casings. This handling of e-waste often occurs without health or environmental safety measures (International Labour Organisation, 2019 in Meysner and Urios, 2022). In addition to women, children are also directly affected. They either perform work or play close to the dumping grounds (Brink et al., 2021). As a result, they are exposed to heavy metals such as mercury, lead, and cadmium, as well as various organic chemicals (Ellen McArthur Foundation, n.d). The impacts of toxic substance contamination on workers' unborn children, including miscarriages and birth defects, are similarly problematic (Brink et al., 2021). However, advances in the formalization and use of technology often further marginalize women who lack sufficient education and training for better qualified positions (UNEP-IETC and GRID-Arendal, 2019).

## 3 Moving forward: What needs to be done?

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Resource consumption affects human well-being in various ways. Primary and secondary raw material production can mean insufficient social security or workers' rights, compromise health and safety, fuel conflict, aggravate discrimination, affect children's health and future prospects, and lead to land loss, forced displacement, and food insecurity. It can, however, also mean revenue, tax, and job creation, which is vital for livelihoods and public investment, as well as for a country's stability. At the same time, the multiple crises are strongly driven by exacerbated

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<sup>17</sup> <https://infomineo.com/mobile-banking-and-why-its-growing-in-africa/>, accessed 30.10.2022

<sup>18</sup> “The “informal sector in solid waste management” refers to individuals, families, and private sector (micro-) enterprises working in waste management services and valorisation, whose activities are neither organised, sponsored, financed, contracted, recognised, managed, taxed, nor reported upon by the formal solid waste authorities” (Scheinberg et al., 2010)

<sup>19</sup> Intersectionality describes the growing discrimination if a person belongs to more than one vulnerable group (gender, age, ethnicity, disability, religion, and others).

resource use. Effects such as water and food scarcity, floods, and extreme weather events especially affect low-income countries and disadvantaged groups that have fewer means to mitigate the effects. Increased efforts to reduce, reuse and recycle can generate broad income and social participation if policies are designed to take into account potential fallout in third countries.

We therefore need a global shift towards responsible sourcing and a reduction in resource consumption, for which the circular economy can be a powerful tool. However, the transformation needs to tackle the root causes of social inequalities – between countries and within societies – and current resource production and consumption patterns (Hickle et al., 2022; Brand and Wissen, 2017). At present, access to resources is not distributed equitably. The causes of this date back to the colonial period (SYSTEMIQ et al., 2022).

### **Dialogue on resource equity and wellbeing**

A broad international dialogue seems imperative given the SDGs (UN SDG, 2022) and the fact that a green, equitable and resilient future for Europe requires a global transformation (SYSTEMIQ et al., 2022).

Despite all efforts, a genuine decoupling of resource use and GDP has not been achieved to date at a large scale and over longer time periods. As a result, economic growth is likely to continue to go hand in hand with an increase in resource use. In this context, the International Resource Panel is promoting the concept of wellbeing (IRP, 2019; IRP, 2022). The basic idea is to move away from measuring a country's progress in GDP and instead evaluate whether a country is thriving by considering health, wellbeing, and happiness. However, wellbeing can mean different things to people around the globe. A first step could be to initiate a dialogue about what such a concept could mean for countries and for different groups.

The Global Resource Outlook 2019 (IRP, 2019) discusses the need to support low-income countries in their efforts to achieve greater prosperity. Due to their very low share of global resource consumption to date, low-income countries need to increase their share in order to achieve greater prosperity. Technological standards in these countries are still more resource-intensive, meaning that resource efficiency is expected to be low for the time being. As a result, their emissions of climate-damaging emissions will increase (SYSTEMIQ et al., 2022; IRP, 2019). At the same time, global environmental boundaries are immutable. High-income countries would then need to further reduce their resource consumption to prevent exceeding the planetary boundaries (IRP, 2019). In today's political and economic climate, such broad consensus seems very difficult to achieve. Nonetheless, the multiple crises of resource use, climate change, biodiversity loss and pollution call for dialogue on such transformative measures. Keeping in mind that vulnerable groups are often at a disadvantage and rarely get access to higher education and jobs (as seen in the example of the e-waste sector), it raises the question of how vulnerable groups could be sufficiently represented in such an international dialogue..

### **Standards and Due Diligence**

The development of laws and international agreements as well as standards on producer responsibility, due diligence along the supply chains and transparency initiatives are important building blocks in broadly anchoring responsible sourcing and consequently human rights.<sup>20</sup> In the extractive sector, the armed conflict in the DRC has driven the development of standards and fuelled the debate on corporate responsibility. The OECD Due Diligence Guidance for

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<sup>20</sup> For an overview of relevant standards, initiatives, and regulations visit the homepage of the EU project Re-Sourcing: <https://re-sourcing.eu/existing-approaches> and (in German) the fact sheets of the UmSoRes project financed by the German environment Agency: <https://www.umweltbundesamt.de/umweltfragen-umsoress>

Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the OECD Due Diligence Guidance for Responsible Business Conduct represent milestones in this respect. In this context, the EU's efforts to establish binding rules on corporate sustainability due diligence<sup>21</sup> and the German Due Diligence Act (Sorgfaltspflichtengesetz)<sup>22</sup>, which will come into force at the beginning of 2023, are important steps forward. However, the German Due Diligence Act in particular is criticized by many non-governmental organizations for not going far enough to effectively counter human rights violations and environmental destruction.<sup>23</sup>

Fighting corruption and improving governance are important building blocks to ensure, for example, that people share in the fruits of state revenues. An important standard in this context is the Extractives Industries Transparency Initiative (EITI). Countries who join the EITI commit themselves to broad regular reporting from the granting of mining licences to the use of revenues. Another relevant area for improving social conditions is labor protection and workers' rights in the extraction of raw materials. The International Labour Organization (ILO) addresses this issue through its standards. Among other things, the ILO has developed a standard specifically tailored to mining.

Broad and continued support for the dissemination and implementation of such initiatives and standards is of great importance. However, sensitive policy making is necessary to avoid unwanted shifting effects, for example in the implementation of certifications and standards in primary raw material production.<sup>24</sup>

### Development of Circular Economy Strategies and Policies

Preston and Lehne (2017) argue that national CE strategies can support low-income countries to 'leapfrog' to a more sustainable development pathway. This can prevent the entrenchment of resource-intensive practices and infrastructure. SITRA (2020) published a guide aimed at supporting the development of a country's circular economy strategy that considers a country's specific perspective.

The development of CE strategies in countries around the globe and the complexity of transnational trade in circular goods and waste requires international dialogue and cooperation. Barrie et al. (2022) suggest supporting international dialogue platforms, for example the Global Alliance on Circular Economy and Resource Efficiency (GACERE), and the WTO's Trade and Environmental Sustainability Structured Discussions (TESSD) "[...] *to build a common understanding of the circular economy and circular goods, and the potential implications for the global trading system.*" The authors further suggest working with international organizations such as ISO to reach internationally accepted standards, for example for waste properties.

The United Nations Industrial Development Organization (UNIDO, n.d.) states that a lack of access to knowledge and technologies puts inclusive<sup>25</sup> development at risk. Specific funding could therefore facilitate access to knowledge and technologies for implementing CE measures (Langsdorf and Duin, 2022). Notwithstanding, circular, and innovative ideas are also being developed in the Global South and could be sampled and used as best practices. For example, a series of apps was developed to connect waste pickers (WEF, 2021).

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<sup>21</sup> See [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1145](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145), accessed 25.11.2022

<sup>22</sup> See <https://www.bmas.de/DE/Service/Gesetze-und-Gesetzesvorhaben/gesetz-unternehmerische-sorgfaltspflichten-lieferketten.html>, accessed 25.11.2022

<sup>23</sup> See <https://ak-rohstoffe.de/pm-lieferkettengesetz-ak/>, accessed 25.11.2022

<sup>24</sup> For further reading refer to Chen et al. (2020), Manhart et al. (2015) and Rechlin et al. (2017).

<sup>25</sup> "Inclusive" in this context means that industrial development must include all countries and all peoples, as well as the private sector, civil society organizations, multinational development institutions, and all parts of the UN system, and offer equal opportunities and an equitable distribution of the benefits of industrialization to all stakeholders. (UNIDO, n.d.).

### **Support to vulnerable groups**

A just transition based on the UN SDGs “leave no one behind” principle must address inequality, discrimination, and fight poverty (UN SDG, 2022). As stated above, the transition from one resource to another (e.g., from mineral raw material to biogenic raw material) can have severe negative impacts. This must be considered when developing policies for the reduction of resource use to avoid increasing inequality, poverty, and displacements.

The discussion on the production of biomaterials and e-waste showed that existing structural disadvantages for women can lead to further disadvantages. The UNEP-IETC and GRID-Arendal (2019) analyzed how gender roles shape the e-waste sector as a whole and why these structures need to change in order to achieve sustainable change and poverty reduction. Such inequalities need to be taken into account in policy making.

#### **Guiding questions for the plenary discussion:**

1. How could just access to resources within the limits of planetary boundaries be organized?
2. What are the key requirements for an inclusive global transition to a circular economy?
3. What are the levers and tools available to policy makers around the globe to address the social dimensions of resource use and circular economy?



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