

# How can affective, decolonial and feminist approaches inform the EU Bioeconomy? *[pre-print version]*

**Sabaheta Ramcilovic-Suominen** (Associate Research Professor, Academy of Finland Research Fellow (2020-2025), Natural Resources Institute Finland, Luke; [sabaheta.ramcilovik-suominen@luke.fi](mailto:sabaheta.ramcilovik-suominen@luke.fi)),  
**Jacopo Giuntoli** (Independent Researcher Italy; [dr.jacopo.giuntoli@gmail.com](mailto:dr.jacopo.giuntoli@gmail.com)),  
**Tom Oliver** (Research Dean for Environment and Professor of Applied Ecology, University of Reading; [t.oliver@reading.ac.uk](mailto:t.oliver@reading.ac.uk)),  
**Lyla Mehta** (Professor at the Institute of Development Studies, University of Sussex and Visiting Professor at Noragric, the Norwegian University of Life Sciences, [l.mehta@ids.ac.uk](mailto:l.mehta@ids.ac.uk)).

## 1. Problematising the ‘sustainable and circular’ bioeconomy

The EU adopted its first bioeconomy strategy in 2012, followed by various EU member states, which further promoted this policy through development and environmental programmes and projects across the countries in the so-called ‘Global South’. Over 60 countries have adopted their own bioeconomy strategies or are working on bioeconomy policies (GBS 2020). Multiple bioeconomy definitions and visions have been promoted and contested (Vivien et al. 2019). We approach bioeconomy as a political project and a policy domain characterised by competing agendas between policy actors and societal groups, who are differently positioned to influence, and to be influenced by the policy (Ramcilovic-Suominen, et al. 2022).

From its inception, the EU bioeconomy policy project has largely been focused on technological innovation as a means to increase the use of bio-based resources in industrial processes with the goal to fuel economic growth decoupled from environmental impacts (Bugge et al. 2016; Eversberg et al. 2023), as well as to respond to geopolitical security concerns (Vezzoni 2023). This narrow vision for the bioeconomy has persisted across multiple successive EU bioeconomy documents, while the concerns related to justice, inequalities, and green (neo)coloniality have been reduced to economic justice within Europe, glossed over, and/or fully ignored (Ramcilovic-Suominen 2022; Giuntoli et al. 2023).

Extensive evidence indicates that pursuing this vision has been ineffective at tackling the existing polycrises. Mubareka et al. (2023) have highlighted how economic outcomes of the EU Bioeconomy, i.e. turnover and value-added in bioeconomy sectors, show clearly positive trends while at the same time the pressures exerted over ecosystems remain very high (Maes et al. 2020). Further literature highlights the existing exploitative relations within bioeconomy supply chains, which have further generated increasing injustices (Backhaus et al. 2021) and contestation by citizens and academics (Dieken et al. 2021; Eversberg et al. 2022).

We argue that, to transform the bioeconomy sectors towards ecologically less harmful and socially fairer outcomes, the bioeconomy policy project must be questioned, re-politicised and fundamentally reframed and reinvented. To that end, we firstly identify some of the main root causes for continuity of extractivism and injustices in the bioeconomy policy and, more broadly, in the green transition (section 2). Secondly, we outline so far largely neglected ideas and concerns emerging from feminist, decolonial and ‘Global South’ (i.e. the ‘majority of the World’) perspectives, as well as affective, emotional and relational ecologies and ontologies (section 3). Finally, based on these perspectives, we compile a list of 10 actions and 31 recommendations for decisionmakers and researchers alike, to explore and consider alternative imaginaries associated with the bioeconomy project.

## 2. Root causes of today's socioecological crises and why they matter for the EU Bioeconomy project?

The time to rethink bioeconomy project is ripe. Failing to deliver on environmental (Mubareka et al. 2023), and social effectiveness, both domestically (Friedrich et al. 2023) and globally, the policy has generated socioecological and epistemic injustices, green extractivism, green (neo)colonialism (Backhaus et al. 2021, Fuchs, et al. 2020; Gebara et al. 2023). These undesired effects relate to the broader systemic and historically embedded unequal economic, social, and power relations that are maintained in today's global environmental politics, governance and external trade relations (Hickel et al. 2021). These effects also share common root causes, such as anthropocentrism and the myth of constant growth, and the neoliberal view of the environment and the primacy of market-based solutions. Those in turn relate to the (neo)colonial and capitalist nexus and an institutional and ideational domination across colonial, racial, class, and other intersectional lines.

### ***(i) Constant growth on a finite planet and the myth of green growth***

The idea that constant growth is possible on a finite planet has been challenged and debunked over the past decade (Hickel et al. 2022; Parrique et al. 2019). The pursuit of green growth has resulted in continued socioecological and ecosystem destruction (i.e. decoupling between growth and environmental damage is weak; Hickel and Kallis 2020), as well as injustices against the racialised, gendered, poor, marginalised, and made dispensable others (Fraser 2022). Yet, and despite the empirical evidence of the contrary (Giampietro 2019; Martinez-Alier 2022), the EU environmental and green transition related policies maintain this paradox.

By favoring the dominant socio-technical imaginary of constant economic growth over socio-ecological and justice imaginaries (Eversberg et al. 2023; Friedrich et al. 2023), the EU Bioeconomy Strategy accelerates this. The Strategy limits justice to European geography and perspectives (e.g. distributional justice within EU countries), which is insufficient considering the policy's global implications (Backhaus et al. 2021; Gebara et al. 2023; Fuchs et al. 2021).

### ***(ii) The Anthropocentric perspective and the primacy of market-based instruments***

Western culture from the ancient Greeks through to Enlightenment thinkers and neoliberal modernism has been imbued with a sense of human superiority (Sessions 1974). Aristotle's hierarchical ranking of animals and plants was developed through Christian scholasticism into a *Scala Naturae* (the 'Ladder of Being'), which conceived of humans just below a monotheistic God with all other animals and plants beneath.

This placing of nature as subservient to human needs (in some cases enthusing a 'god given right' to plunder and dominate nature) has long been argued to be a primary factor in the environmental damage (White 1967; Sessions 1974). And it is evident that the history of many Western countries has been characterised by colonisation, appropriation and commodification (Moore 2017, Patel and Moore, 2018; Hickel et al. 2021, Haberl et al. 2007).

Under anthropocentrism, the natural world is viewed from an instrumentalist perspective, and this value perspective has dominated modern science-policy discourse with most reports describing nature protection as a means to enable human development (IPBES 2022). Contrary to this value positionality, many people in the Global South, especially the ancient indigenous cultures, see nature through the lens of deeper kinship and ancestry, often taking a more biocentric, rather than anthropocentric perspective, where humans are nested in an interconnected web of life and equally important as other species (Mäkinen-Rostedt et al. 2023; Wahinkpe and Naravaez 2022).

The dominance of instrumental values in bioeconomy discourse is associated with framing of nature as set of assets ('natural capital') which provide ecosystem 'services' to humans. Quantifying and monetising these services is viewed as an essential step in their protection and restoration (Dasgupta 2021; Hache and Spash 2022) This approach is problematic not least because we do not yet understand the roles and functions of the known and many still unknown species to us (Mora et al. 2011; Oliver et al. 2015). In addition, there are potentially perverse psychological and moral outcomes because taking an instrumental approach to ecosystem management exacerbates the psychological disconnect with nature, which reduces attitudes of care, responsibility, and pro-environmental behaviours (EEA 2023a). Concepts such as 'payments for ecosystem services' crowd out social norms where nature would be protected for other than economic reasons (Ezzine-de-Blas et al. 2019). Psychological attributes underpinning speciesism– the belief that humans are morally superior to other animals and can exploit them for their own interests– is also associated with general prejudicial attitudes and ideologies, including racism, relating to our colonial history (Dhont et al. 2016; Everett et al. 2019).

### ***(iii) The (Neo)colonial and Capitalist underpinnings of today's socioecological crises***

Capitalism as a social system emerged from colonial destruction and plunder of wealth and resources, enslavement, and appropriation of various forms of life. It led to erasure and denial of personal and collective histories and identities, languages, sexualities, knowledges, and the ways of knowing and being of the enslaved and colonised native and Indigenous populations and their territories, across the 'Global South', which was produced in these violent encounters, as inferior to the Global North (Escobar 1995).

European coloniality and domination over most of the planet enacted and normalised primitive accumulation and appropriation of wealth, minerals, agricultural commodities, humans and non-human species and forms of life for capital and profit of the white European patriarchal and heterosexual elite (Lugones 2007), which founded the powerful block of modern European states.

While the European colonial project is considered mostly over, its legacies are preserved in the global institutional structures, military, political and economic structures and relations established by the colonial powers for and in the interest of the imperial, European and settler-colonial states at the cost of the former colonies in the Global South (Hickel et al. 2021)

Abandoning fossil development is important. Yet, the offered alternatives – such as mining of rare earth minerals, lithium and other ores to be sourced mostly from the Global South, for the green transition in Europe and the Global North – not only fail to question these past colonial relations and injustices, but are effectively reproducing them, through the green neocolonialism phenomenon and extractivism (Almeida et al. 2023).

### **3. Moving beyond growth while enabling marginalised voices, knowledges and practices that nurture web of life and wellbeing for all**

#### ***3.1 Affective and relational ecologies and ontologies: from anthropocentrism, individualism and separateness to unity, interconnectedness and relationality***

To move beyond an ineffective 'weak' sustainability approach for the European bioeconomy requires a fundamental shift in paradigms and values, and this is increasingly and finally recognised by major international science-policy organisation such as the UNEP, EEA, IPCC, IPBES and CBD, and supported by social scientist (Ives et al. 2023). It requires inner

transformation and a narrative for recognising our human embeddedness and co-dependence with the rest of nature (EEA 2023a). There are limitations to defining this as a single perspective, given a plurality in global values that should be acknowledged (IPBES 2022), though a common thread is seeing humanity as much more deeply interconnected and embedded in the web of life. This perspective rejects human exceptionalism associated with anthropocentric framings and recognises our deep interconnection to natural ecosystems reflecting relational and intrinsic values (Kenter and O'Connor 2022).

Extensive recent social science research supports the need to move beyond superficial economic interventions and technological innovation to also include deeper 'inner' leverage points for sustainability transformation (Abson et al. 2017; Wamsler et al. 2021; Woiwode et al. 2021; Oliver et al. 2022). New findings in natural sciences from microbiome research to neurobiology continue to re-affirm how our perspective as isolated individuals operating in a competitive world is an evolved illusion, which is increasingly maladaptive in terms of creating cooperative sustainable behaviours and institutions (Oliver 2020).

In combination with this growing discourse around alternative human-nature narratives some initiatives are beginning to operationalise these ideas and trying to catalyse progressive cultural shifts (see examples in Table 1, Action 1. in Supplementary Materials):

- The UNDP's *Conscious Food Systems Alliance* aims to go beyond economic, regulatory and technology interventions for food system transformation by working on psychological aspects, particularly around connection to nature (Wamsler et al. 2022).
- *The UK Mindfulness Initiative* aims to promote inner development and greater compassion, while downregulating the individualistic and egoic identity (Barbaro and Pickett 2016; Schutte and Malouff 2018; Thiermann and Sheate 2022).
- The Inner Development Goals, an organisation launched in 2020, aims to improve our understanding of how inner development and transformations can support a sustainable future (IDG 2023).

These initiatives are still relatively niche but represent green shoots of good practice that, along with many others, may help catalyse learning for wider transformation of activities in the bioeconomy domain. Thus, there is occurring both an 'intellectual inflection point' in science-policy discourse as well as many small-scale progressive initiatives that together focus on the re-orientation of identity, values and attitudes away from anthropocentrism.

Emotions and affect play a critical role in economic and ecological processes and, driving interactions between communities, economies and the environment (Ahmed 2004, 2014, Fontefrancesco 2023). Equally, affective responses such as care, nurturing, solidarity, and conviviality can also be guiding principles to challenge the dominant economic and ecological paradigms to recognise mutual interdependency and decolonial and socially just visions that promote sustainable, fair and flourishing relations that maintain economies and ecologies (del la Bella Casa, 2017).

### *3.2 Feminist, decolonial and care-based approaches in the EU bioeconomy*

Feminist and decolonial lenses highlight the role of intersectionality in reproducing vulnerabilities, unequal power relations and domination across race, gender, class, ethnicity, religion, disabilities, sexualities, and other societal categories (Mehta and Harcourt 2021). Such lenses call for repoliticizing scarcity, limits, crises and society as a whole, through politics of affinity and care. Jointly they highlight the non-material, yet real and concrete aspects of

scarcities, such as scarcity of time, relations and community, happiness, especially in the high-income EU and other countries (Mehta and Harcourt 2021).

In line with this school of thought, we suggest that the EU's current and historic roles and responsibilities need to be revisited. This revisiting entails recognizing and taking responsibility for the past colonial and imperial history, its current excess use and *net* appropriation of global resource from the Global South, and its disproportionately large contribution to climate change that disproportionately affects other than EU countries (Kumeh and Ramcilovic-Suominen 2023, Hickel et al. 2021, Sultana 2022).

Compensating for the so-called 'ecological debt' and 'climate debt' are important steps towards recognition of and taking the responsibility for past and present violences. But they do not challenge or seek to undo the underlying systems of inequalities and vulnerabilities that led towards such 'debts'. Financial compensation for 'externalities' such as biodiversity loss and/or CO2 emissions are common policy measures called for also in bioeconomy (EC 2018). This approach shifts the burden of EU lifestyles to other geographies, territories, and people through various carbon and biodiversity offsetting schemes, which further result in ontological and epistemic 'burden' or violence, related to such policies (Sultana 2022).

The EU could set measures for curbing overconsumption at home, while promoting sufficiency and non-material wellbeing, while ensuring people's basic needs, rather than shares for shareholders, are met. Advertising and social media play a significant role in driving consumption and production processes or even attitudes to issues such as migration and minorities, mostly in the name of certain economic and ideological interests. Individuals consume, produce, and engage in economic and ecological practices based on emotions such as love, hate, fear, desire etc. But those are not merely individual actions and experiences, but part of the social and cultural constructs based on wider socio-historical and cultural processes. Such measures and campaigns can be supplemented by actions that addresses deeply rooted causes of those constructs, including the (self)image of the European citizen and its rights, responsibilities, and the place in the world. This relates but does not limit to the idea of how the so-called 'environmental' impacts of our lifestyles are mitigated (e.g. the idea that the "biodiversity" or its destruction, as well as climate change caused by GHG intense lifestyles can be monetarily compensated for). It also relates to the often-unquestioned right to live by certain standards, often well above that of the majority of the world (Brand and Wissen 2021).

Abandoning economic growth as the main objective and adopting a solid and concrete focus on care and nurturing of human and other-than-human life are central for responding to the weight of past and present (neo)colonial legacies and domination. Policy makers and experts from the global North need to listen with humility to the experiences and knowledges of the worse positioned countries and the regions of the world and actively unlearn and undo the patterns of current economic, power and external relations more broadly, founded on colonialism, racism and exploitation of black and people of colour and their territories (Sultana 2022). Further promoting and allowing for thriving of commons, community and wellbeing by the means of generosity, reciprocity and conviviality (cf. MEhta and Harcourt).

#### 4. Tangible Actions and enablers

As EU policymakers set to revise the Bioeconomy Strategy, we build on our critique of the current bioeconomy policy project on the one hand and the ideas from affective ecologies, decolonial and feminist approaches on the other, to highlight various ways that can

strengthen socioecological justice and wellbeing for all at a global level, also other-than-human. The aim is to generate a momentum for change. To this end the supplementary material includes a table of 11 action points (presented also as petals of the flower of change, in Figure 1), and a list of 43 associated suggestions for change, which include some of the existing examples, as well as further suggestions for change.

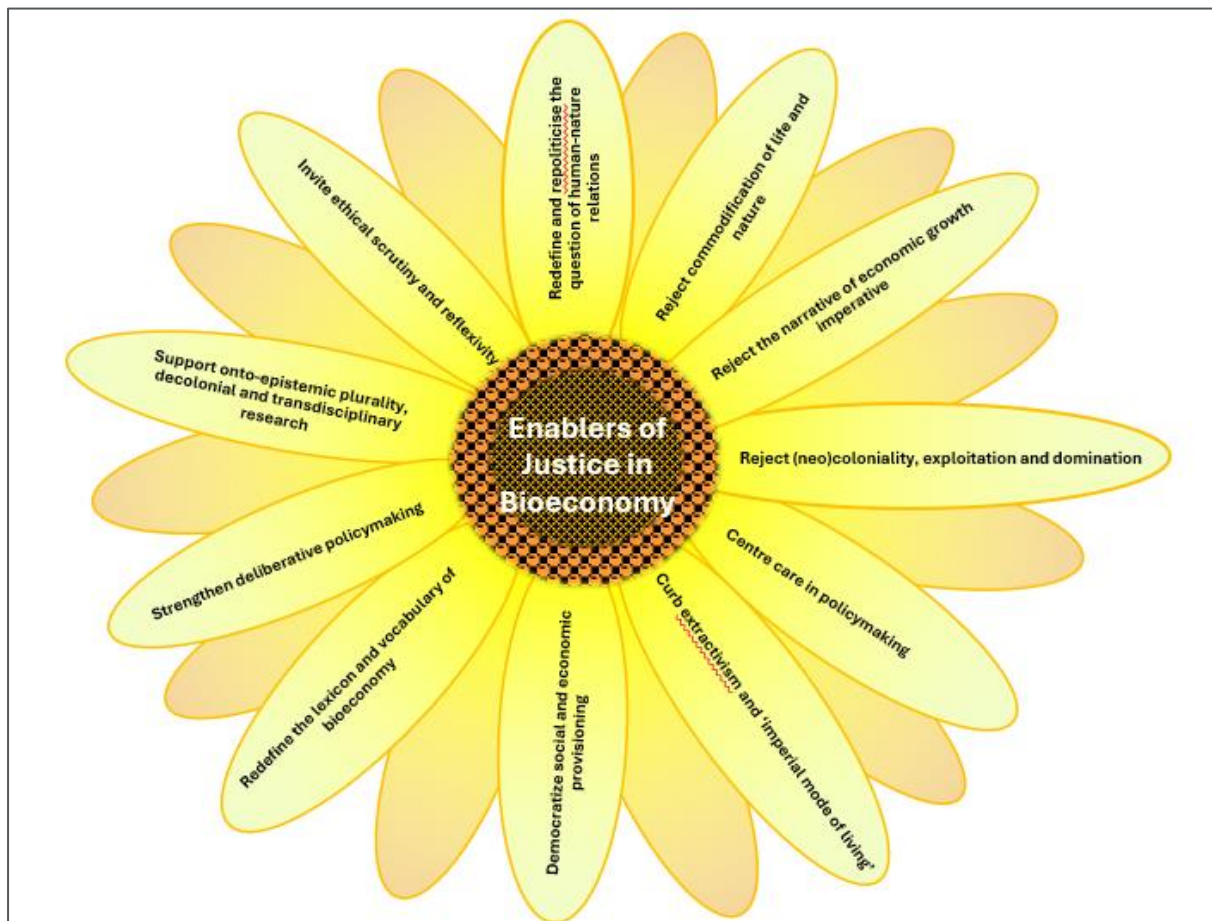


Figure 1. The Flower of Change, representing 11 action points that enable justice.

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Supplementary material. Table 1: List of 11 Action points, including a short description for each point and a list of existing examples or implementable policy recommendations.

Action points	Description of the challenge and action point	Existing examples and/or implementable recommendations for policy makers and practitioners
<p><b>1. Redefine and repoliticise the question of human-nature relations</b></p>	<p>Foster ‘biocentric’ or ‘ecocentric’ human-nature relations that are based on a relational worldview, a worldview that recognizes deep interconnection and co-dependence between human and non-human worlds. This also implies recognition of all species as sentient beings.</p> <p>This in turn implies a need to emphasize the politics of ontological and epistemic assumptions, and how the different ontologies regarding the human-nature relations (separation vs. unity between human and other-than-human) shape the reality, our action and behaviour.</p>	<p><b>Educational and cultural routes:</b></p> <ol style="list-style-type: none"> <li>1. Promoting closeness and interconnectedness with nature among children from a very young age, through stories and practice, but also in educational institutions and formal education (e.g. Forest Schools);</li> <li>2. Supporting and funding projects and programmes for onto-epistemic plurality; for example, interactions between western scientific knowledges and Indigenous, local, tacit and embodied knowledges of citizens and people working with land.</li> <li>3. Leveraging and interacting with spiritual and/or religious groups (e.g. IFEES Protecting our planet for future generations using Islamic teachings<sup>1</sup>, LaudatoSI movement<sup>2</sup>).</li> </ol> <p><b>Self-Reflexive and psychological routes:</b></p> <ol style="list-style-type: none"> <li>4. Challenging speciesism and supporting psychological development approaches which decenter individualistic and anthropocentric perspectives towards greater ecological identity.</li> <li>5. <b>Promoting mindfulness</b>, self-knowledge and self-transformation as a way of wider socioecological change and transformation, among policy makers, businesses, and other experts. Example: Inner Development Goals Initiative<sup>3</sup></li> <li>6. Mental health Nature Based Interventions: Expanding the framing of nature-based interventions to include ‘human-nature’-based interventions that help to foster alternative relationships between humans and nature and consequent pro-environmental behaviours (e.g. Green Social Prescribing<sup>4</sup>, nature engagement campaigns by NGOs (Richardson et al. 2016) and governments (Gilchrist 2023)</li> </ol> <p><b>Legal routes (‘Earth Jurisprudence’):</b></p> <ol style="list-style-type: none"> <li>7. <b>Develop legal frameworks that recognize the Rights of Nature</b>, giving the “environment” (i.e. various life forms, ecosystems and other-than-human species) similar legal rights to those of humans. This approach can develop from conferring rights that need to be reconciled between conflicting sovereign entities to protecting essential sets of relationships (Albrecht 2020). Some of</li> </ol>

<sup>1</sup> <https://www.ifees.org.uk/>

<sup>2</sup> <https://laudatosimovement.org/who-we-are/>

<sup>3</sup> <https://www.innerdevelopmentgoals.org/>

<sup>4</sup> <https://www.england.nhs.uk/personalisedcare/social-prescribing/green-social-prescribing/>

		<p>the countries that have recognized legal rights to various life forms and eco systems, including rivers, mountains, forests and a set of other-than-human beings, include: New Zealand, Panama, Ecuador. See, for example: Harmony with Nature<sup>5</sup>, Global Alliance for the Rights of Nature<sup>6</sup>.</p> <p>8. <b>Codify Ecocide</b> as an international crime. See more on Ecocide Law<sup>7</sup> and <a href="#">ELI (2023)</a> where a draft text for a possible EU Directive is presented.</p>
<p><b>2. Reject commodification of life and nature</b></p>	<p>The dominant managerial approach to ecosystem protection is anthropocentric and commodity driven, causing perverse socioecological and psychological outcomes, including the disconnect with nature, leading to weakening of care and responsibility, and should be rejected.</p> <p>Alternative approaches that promote care-based, reciprocal and responsibility taking relations with nature could be promoted instead (see also the Action 1 above).</p>	<p>9. <b>Do away with Neoliberal Conservation and Market-Based approaches.</b> Adopt instead life promoting standards, benchmarks and indicators (see action point 3), as well as policies that strengthen commons and community agency.</p> <p>10. <b>Accordingly, redefine policy priorities</b> in a way that features health and vitality of ecosystems and people as an integral part of it with roles and responsibilities to play; and that is based on inter and intra-generational fairness of future human and other-than-humans. For instance, Büscher and Fletcher (2019) propose a novel approach of ‘Convivial Conservation’ as an approach to transcend the ineffective use of neoliberal capitalist markets for conservation, and Fletcher and Büscher (2020) propose a Conservation Basic Income to operationalizing their approach.</p> <p>11. <b>Promoting commons:</b> The policies and initiatives could at the minimum respect and directly support ensure and fund commons and livelihoods, as well as “recognize the value of care and social reproduction in economic and ecological debates and replacing efficiency with sufficiency” (Mehta and Harcourt 2021; Wichterich 2015). The European Commons Assembly has been working with the Commons Intergroup in the European Parliament to promote commons principles such as embracing stewardship, co-creation and social and ecological sustainability and establish institutions to facilitate the growth of commons, as opposed to barriers, enclosures and commodification (Hammerstein and Bloemen 2016). <b>Different ownership structures</b> can be encouraged by promoting forms of ownership that incentivise stewardship of commons rather than their (ab)use and overuse. Examples include steward ownership of cooperatives and trusts (see Vezzoni and Ramcilovic-Suominen 2023)</p> <p>12. <b>Community agency:</b> Governmental policies and incentive packages, programmes and initiatives, especially those relying on market-based instruments, risk exacerbating land ownership concentration and new enclosures (Heron and Heffron 2022): therefore, these green finance</p>

<sup>5</sup> <http://www.harmonywithnatureun.org/rightsOfNature/>

<sup>6</sup> <https://www.garn.org>

<sup>7</sup> <https://ecocidelaw.com>

		<p>initiatives should, at minimum, be conditional to “include community agency in decision-making, control and ownership” (<a href="#">Scottish Land Commission 2023</a>).</p>
<p><b>3. Reject the narratives of economic growth imperative</b></p>	<p>The bioeconomy policy project could explore, generate and promote new and engaging narratives, new myths and stories that go beyond the obsession with economic growth, profit accumulation, and consumer culture.</p> <p>Instead, embracing the importance of non-material wellbeing and thriving within socioecological limits, while advancing better distribution of wealth and power, as well as solidarity, generosity, caring relations with other humans and other-than-humans.</p>	<p>13. Recognize the <b>biophysical impossibility</b> of an exponentially expanding economy in a finite planet. For instance, in a continuously growing economy, expanding the amount of bio-based products or bioenergy, rather than leading to a substitution of fossil-based products as often claimed and advertised, may often simply contribute to increase existing production (see e.g. <a href="#">Leturcq 2020</a>).</p> <p>14. Redefine policy priorities to cancel <b>economic growth</b> from the policy objectives, while placing the vitality and health of ecosystems and people that are part of it, with roles and responsibilities to play in it as the first and core policy priority. For example, in a recent report for the Beyond Growth 2023 Conference, the European Parliamentary Research Service (<a href="#">EPRS 2023</a>) criticizes the common policy goal of achieving Sustainable Growth as an oxymoron, suggesting instead rejecting economic profit as the main or only moral compass and objective for decision making.</p> <p>15. <b>New indicators:</b> indicators focusing and prioritizing economic growth are dominant in measuring progress in EU Bioeconomy (see for instance JRC Bioeconomics dashboard<sup>8</sup>). This mindset would need to change in line with the rest of actions discussed here, and accordingly new measures and indices adopted. At a macro-scale, substituting or integrating GDP with alternative measures, or moving Beyond GDP, has gained ground even in European institutions<sup>9</sup>. For the EU bioeconomy in particular, Giuntoli et al. (<a href="#">2023</a>) notes that the current EU Bioeconomy Monitoring System<sup>10</sup> includes a normative criterion called “Economic development is fostered”. This could be eliminated or amended to include a new holistic ‘well-being’ criterion.</p> <p>16. <b>New tools:</b> Moving beyond the current paradigm requires rejecting the ubiquitous use in policymaking of tools and models laden with the flawed and discredited assumptions of neoclassical economics (see e.g. <a href="#">Raworth 2017</a>; <a href="#">Spash and Guisan 2021</a>; <a href="#">Keen 2021</a>). Rather policymaking should embrace new tools and approaches derived from complexity science and systems thinking capable of envisioning and deliberating about futures which are qualitatively different from the present and capable of integrating different perspectives, disciplines and knowledges (e.g. quantitative storytelling approaches (e.g. <a href="#">Giampietro and Bukkens 2022</a>; <a href="#">Renner and Giampietro 2020</a>), and see <a href="#">Biggs et al. (2021)</a> for an exhaustive list).</p>

<sup>8</sup> <https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html>

<sup>9</sup> <https://www.consilium.europa.eu/media/49818/beyond-gdp-measuring-what-matters-issues-paper-19-may-2021-web.pdf>

<sup>10</sup> [https://knowledge4policy.ec.europa.eu/visualisation/eu-bioeconomy-monitoring-system-dashboards\\_en](https://knowledge4policy.ec.europa.eu/visualisation/eu-bioeconomy-monitoring-system-dashboards_en)

		<p><b>17. Policy makers could look at community organizing initiatives working on postgrowth, for inspiration, but also support and fund such initiatives.</b> For example: (i) Postgrowth Institute<sup>11</sup>; (ii) Transition Towns<sup>12</sup>, (iii) Doughnut Economics Action Lab (DEAL)<sup>13</sup>, (iv) Postcarbon Institute<sup>14</sup>.</p>
<p><b>4. Reject (neo)coloniality, exploitation and domination in bioeconomy</b></p>	<p>Redefine power and economic relations between former colonial powers and settler colonial states on the one hand and the post-colonial states on the other. Similarly, redefine power relations between different sections of society (race, class, gender, ethnicity, religion), within the same world regions and countries. This is a precondition for fairer share of access and possibilities between the Global North and the South, as well as fairness and justice across and within the same regions and countries. It is a precondition for removing the systemic causes and conditions for producing systemic marginalization and vulnerability.</p>	<p>Available Policy examples are too few and/or barely scratch the surface of this issue, such as the newest Declaration of the global climate fund adopted at COP28<sup>15</sup>. Bioeconomy and other EU policies could be reimagined and reinstated as spaces where inequalities are tackled rather than reproduced, by shifting the focus of policymaking from serving the EU interests to the interests of global justice and decoloniality. For example, by: (i) restraining to predefine policy problems and solutions in the name of other countries and peoples, (ii) ensuring the right to self-determination and where applicable self-governance of indigenous territories and people, (iii) recognizing their knowledges and legal systems rather than only the state ones, (iv) incorporating payments for climate debt and ecological debt.</p> <p>More concretely, policy makers can:</p> <p>18. Learn from examples of <b>post-capitalist and postgrowth forms of economy</b> emerging at the grassroot level. (see Kothari et al. 2019, La Via Campesina<sup>16</sup>). Such can act as inspiration. They can also incentivize and fund such initiatives (see <a href="#">Vezzoni and Ramcilovic-Suominen 2023</a>)</p> <p>19. Ensure the <b>policies do not feed extractivism</b> that lead to modern slavery<sup>17</sup> and/or death of land defenders elsewhere (<a href="#">Menton and Le Billon 2021</a>, <a href="#">Temper et al. 2020</a>).</p> <p>20. <b>Use tools such as Environmental Justice Atlas</b><sup>18</sup> (<a href="#">Temper et al. 2018</a>) as a precautionary measure and for drawing lessons how to avoid land/mining and other extractivism related conflicts, within and outside EU borders.</p>

<sup>11</sup> <https://postgrowth.org/>

<sup>12</sup> <https://transitionnetwork.org/>

<sup>13</sup> <https://doughnuteconomics.org/>

<sup>14</sup> <https://www.postcarbon.org/>

<sup>15</sup> [https://www.cop28.com/en/climate\\_finance\\_framework](https://www.cop28.com/en/climate_finance_framework)

<sup>16</sup> <https://viacampesina.org/en/>

<sup>17</sup> See e.g. EPRS(2021) [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689347/EPRS\\_BRI\(2021\)689347\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689347/EPRS_BRI(2021)689347_EN.pdf) and Fern (2023) <https://www.fern.org/publications-insight/duped-2670/>

<sup>18</sup> <https://ejatlas.org>

		Engage and learn from <b>epistemic and ontological disobedience movements and initiatives, such as those calling for decolonising Europe</b> (e.g. Decolonial Europe Day <sup>19</sup> ) and for repatriation of indigenous land, e.g. Land Back movement <sup>20</sup> .
<b>5. Center Ethics of Care in policy and practice</b>	<p>Fostering an ethics of care amongst societies, and in relations between human and other-than-humans. This point runs as a common thread across many other points. Indeed, there are growing calls across Europe to address socioecological crises and address intergenerational justice and multispecies justice.</p> <p>Many youth organisations are demanding a ‘post-growth’, ‘post-capitalist’ and postcolonial societies, with changes in current economic and trade practices that reject constant economic growth and profit accumulation.</p>	<p>Policymakers can promote and enhance:</p> <p>22. <b>Ethics of care</b> for each other and other living beings, by addressing “structures of oppression arising due to gender, sexuality, nationality, racialised identities, ethnicity, physical ability and the intersections of these structures and identities” (<a href="#">Generation Climate Europe 2023</a>).</p> <p>23. <b>Care-based approaches to policymaking</b> in a way that does not frame care as a burden or cost, but as an essential policy goal for addressing violence, extractivism, racialised and gendered labour, discrimination, and exclusion, and therefore a central pillar of fairness and justice in the EU policies. The National Recovery and Resilience Plans initiated after the pandemic have a potential to address some structural inequalities and enable ‘social, regional, digital and climate justice’ in European governance (<a href="#">Thissen 2022</a>).</p> <p>24. <b>Revisit and reflect on the emerging Feminist Foreign Policies (FFPs)</b>: The EU has engaged in discussions about an EU Feminist Foreign Policy through the European External Action Service (EEAS). Several countries such as Sweden and France have explicit FFPs. The aim is to tackle discrimination, especially against women. However, scholars reveal that these attempts are not adequate to achieve a ‘more peaceful and prosperous global order’ (<a href="#">Salazar 2022</a>) and to disrupt the power asymmetries and hierarchies of domination (<a href="#">Guerrina et al. 2023</a>).</p> <p>Considering the significant trade relations with non-EU countries in the bioeconomy sectors, the Bioeconomy project needs to adopt a solid and reflexive external relations approaches, making sure to address the root causes, structures, mindsets and hierarchies that reproduce inequalities and exclusion, and to avoid reproducing binary conceptualisation of gender.</p>
<b>6. Curb extractivism and European ‘imperial mode of living’<sup>21</sup></b>	Rather than focusing on policy measures to compensate for biodiversity loss and/or emissions elsewhere, curbing overconsumption	<p><b>Promote self-limitation approaches<sup>22</sup> and sufficiency policies such as, but not limited to:</b></p> <p>25. policy measures and standards (both on demand and supply sides) that <b>promote durability and ensure reparability</b>, for example the recently launched Austrian repair bonus voucher scheme<sup>23</sup>.</p>

<sup>19</sup> <https://decolonial.eu>

<sup>20</sup> <https://landback.org/>

<sup>21</sup> Brand U, Wissen M (2021) The imperial mode of living: everyday life and the ecological crisis of capitalism. Verso Books, New York

<sup>22</sup> With appropriate ethical scrutiny and deliberation, see Action 10.

<sup>23</sup> <https://www.bbc.co.uk/news/world-europe-6777814>

	<p>at home (e.g. through focusing on sufficiency and promotion of non-material wellbeing and the satisfaction of needs for all, see Actions 1-5)</p>	<p>26. campaigns for sufficiency and ‘Enough’ as opposed to ‘efficiency’ and ‘more’ in terms of consumption and privatisation through and in <b>popular culture and art</b>.</p> <p>27. <b>limiting advertisements</b> for fast fashion and other socioecologically harmful and unnecessary commodities, including bio-based ones.</p> <p>28. <b>going beyond scarcity narrative, discursively and in practice</b>, ensuring affordable access to the so-called basic needs for all regardless growth. This by distributing wealth accumulation and reprioritizing wellbeing for all over profit making (see also Action 7).</p>
<p><b>7. Democratize the social and economic provisioning</b></p>	<p>Reclaiming control over the decision of what, how, how much, for whom and by whom socioecological and reproductive, as well the biophysical and material capacities of a society are used, produced, and distributed. Redefine who owns the means of production and ensuring production and consumption meet social needs for all, while delivering and supporting human and ecological wellbeing and health. The traditionally marginalised and ill positioned groups, including the Indigenous peoples, local communities, minorities, working class and unions must be part of this process, demanding it an enacting it in practice (Vezzoni and Ramcilovic-Suominen 2023, see also Hickel 2023, Schmelzer &amp; Hofferberth 2023).</p>	<p><b>Restructure and reorienting the socioecological provisioning for health, vitality, and wellbeing of human and other-than-human, rather than provisioning for profit making:</b></p> <p>29. engaging the concept of <b>care, ethics, wellbeing, wellbeing, and equity for all, human and other-than-human</b>, as a set of guiding principles to reset the current system of socioecological provisioning (see also Action 5),</p> <p>30. a <b>firmer direct democratic control over strategic sectors</b>, including energy, real estate, agriculture, forestry, etc. (Vezzoni and Ramcilovic-Suominen 2023), including revisiting and questioning land ownership structures across Europe (e.g. Heron and Heffron 2022)</p> <p>31. ensuring that the <b>decisions about what is produced, how, for whom and how much are taken through deliberation and participatory decision-making processes</b>, rather than top-down market-informed decision-making (see also Action 9).</p> <p>32. securing <b>people’s access to human needs as public goods</b>, which expand to include access to nutritious food, clean water, housing, in addition to healthcare and education (Hickel 2023).</p> <p>33. <b>guarantying the fundamental right to protest, social movements, activism and community organizing</b>, all of which have a crucial role in challenging and transforming the dominant hegemonic socioecological and sociopolitical values and structures, establish an institutional framework fit for <b>strong democratic governance</b>, where the rights to directly participate in economic decision-making and the rights to protest and demonstrate are respected rather than repressed, criminalised, and punished.</p>
<p><b>8. Redefine the Bioeconomy vocabulary</b></p>	<p>Vocabulary invokes certain worldviews in the way the policy problems and solutions are framed. Currently the policy language by large and far reinforces hegemonic utilitarian and in cases colonial-capitalist framings,</p>	<p>34. <b>Redefine vocabulary by rejecting and/or reclaiming terms</b>, such as the following examples:</p> <ul style="list-style-type: none"> <li>• <b>Re-claim or reject ‘Sustainability’ and ‘Sustainable Development’ (SD)</b>: Reject the current definition of sustainability and SD in which social and environmental goals are on par with, and in practice subdued to the pursuit of economic growth and profit. The same can be said about the term <i>bioeconomy</i>, as it rests on these two framings.</li> </ul>



	<p>values, and logics, that promote distance, a clear separation between humans and ‘nature’, and as such objectify life on Earth, removing it from our considerations of morality and empathy (Muradian et al., 2021). A key step in transforming bioeconomy policy and activities is to reflect critically on the vocabulary used and its ideological backgrounds.</p>	<ul style="list-style-type: none"> <li>● <b>Reclaim Nature-Based Solutions</b> to be about reciprocity, relationality and co-dependence between human and other-than-human across policy instruments &amp; programmes (see Action 1).</li> <li>● <b>Reject the current framing of <i>Ecosystem Services</i> and <i>Natural Capital</i></b>, which reinforce utilitarian, anthropocentric and hierarchical human-nature worldview, which in turn lead to commodification, exploitation and destruction of some forms of nature, human and other than human, that are rendered dispensable (see also Action 2).</li> <li>● <b>Reclaim ‘circularity’</b>: accept the limits of ‘circularity’ and circular economy in the context of the capitalist growth paradigm (Giampietro 2019; Lehmann et al. 2022); embrace circular and regenerative by design supply chains and products (see also Actions 3, 6, 7)</li> </ul>
<p><b>9. Strengthen deliberative policymaking</b></p>	<p>Policy decisions in bioeconomy-related sectors have momentous consequences for citizens globally. Participatory and deliberative approaches could ensure better integration of multiple perspectives, concerns and interests in bioeconomy-related policies.</p>	<p>Concerning participatory policymaking, several examples can be found in Europe:</p> <p>35. The European Commission has published a Recommendation for promoting participation of citizens and civil society organisations in policymaking (EC 2023), suggesting Member States facilitate the creation of participatory mechanisms, including: citizens’ panels, juries or assemblies, consensus conferences, participatory budgeting, etc. Also the EEA (EEA 2023b) has stressed the importance of participation in sustainability transitions. Examples exist at national level in Ireland<sup>24</sup>, or regional level in East Belgium<sup>25</sup>. Civil society plays central role (e.g. Extinction Rebellion in the UK<sup>26</sup>).</p> <p>Yet, the marginalised groups (e.g. various minorities, Indigenous Peoples, immigrant &amp; seasonal workers, women, youth) remain unrepresented in policy-making, signalling a need for:</p> <p>36. <b>Cocreating safe spaces and platforms for marginalised groups’ meaningful engagement.</b> The European Commission’s Joint Research Centre manages a Competence Centre on Participatory and Deliberative Democracy<sup>27</sup> which aims to promote the creation of such spaces &amp; platforms.</p>

<sup>24</sup> <https://citizensassembly.ie/about/>

<sup>25</sup> <https://www.buergerdialog.be/en/>

<sup>26</sup> <https://extinctionrebellion.uk/decide-together/citizens-assembly/>

<sup>27</sup> [https://knowledge4policy.ec.europa.eu/participatory-democracy\\_en](https://knowledge4policy.ec.europa.eu/participatory-democracy_en)

<p><b>10. Support onto-epistemic plurality, decolonial and transdisciplinary research</b></p>	<p>Recognizing other than western or Eurocentric science and knowledge and leaving space for Indigenous sciences &amp; knowledges in defining policy and problems accordingly is crucial for minimizing epistemic dominance, violence, and injustices.</p>	<p>Formal institutions need to support and not hinder other than Eurocentric science and knowledges</p> <p>37. <b>Embrace and support decolonial research, principles of consent, intellectual and cultural autonomy &amp; justice</b> (Orlove et al. 20023)</p> <p>38. <b>Supporting Indigenous-led research</b> (Kimmerer and Artelle 2024)</p> <p>39. <b>Promote onto-epistemic plurality at domestic and global level.</b> The IPBES task force on Indigenous and Local Knowledge<sup>28</sup> and its established participatory mechanisms, such as dialogue workshops, stands as one of the few examples of promoting onto-epistemic plurality. But there are nascent attempts to set up global citizen assemblies<sup>29</sup>.</p>
<p><b>11. Invite ethical scrutiny and reflexivity within research and policy</b></p>	<p>Individual and societal values have a crucial role in driving transformations but are rarely openly debated and discussed. The governance of the Bioeconomy could involve more actively disciplines in the social sciences and humanities, to iteratively reflect upon its driving values and ethical implications of its policies.</p>	<p>To ensure ethical scrutiny and reflexivity within the EU bioeconomy, policymakers could:</p> <p>40. The European Commission has established a European Group on Ethics (EGE) in Science and New Technologies<sup>30</sup> to provide advice on ethical issues associated with development of science and new technologies. As biotechnology continues to be a key focus of the bioeconomy policy project and as the impact is felt globally, direct engagement with such initiatives could contribute to a deeper and more informed societal deliberation on these new technologies.</p> <p>41. In addition, when operating beyond the EU borders, and/or within the borders of Indigenous populations within the EU, development of new local community codesigned and led guidelines and principles need to be supported and applied.</p> <p>42. Involving ethicists to discuss and define a safe and just space for self-identity and values (Oliver et al. 2022) and/or ‘consumption corridors’ or ‘societal boundaries’ (Brand et al. (2021)).</p> <p>43. Ethics roundtables could be assembled and consulted on a regular basis along the policy cycle for bioeconomy-related policies, e.g. affecting land governance, use and ownership.</p>

<sup>28</sup> <https://www.ipbes.net/indigenous-local-knowledge>

<sup>29</sup> <https://globalassembly.org>

<sup>30</sup> [https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/european-group-ethics\\_en#ege-opinions-and-statements](https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/european-group-ethics_en#ege-opinions-and-statements)

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