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Situating a sustainable bioeconomy strategy on a map of justice: a solution and its problems

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Abstract

The European Union's 2018 updated bioeconomy strategy A Sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment aims to fulfill the requirements of sustainability and justice while transitioning economy from fossil-based to bio-based. We ask whether and to what extent the economically ambitious strategy succeeds in achieving its non-economic goals. We present a map of justice that shows the tensions and alliances between key interpretations of equality, identify the definition of sustainability informing the strategy, and show how this definition steers the strategy toward a limited view of justice that is geared to ignore social and ecological concerns. The governance framework that the strategy adheres to is the 2015 United Nations Sustainable Development Goals approach, which is an outgrowth of the 1987 Brundtland Commission's view on sustainability. Since this framework forms the basis of many other international environmental agreements, our observations are largely applicable to them, too. From the viewpoint of justice, comprehensively understood, the whole system is, and has since the Brundtland Report been, fundamentally flawed.

Keywords European Union bioeconomy strategy · United Nations sustainable development goals · Theories of justice · Equality · Environment · Ecology

1 Introduction: justice and a bioeconomy strategy based on sustainable development goals

1.1 Background in contemporary thinking and analyses

In liberal democracies, we expect public decisions and policies to be just. This expectation is so self-evident that it needs no proof. No government or international coalition can announce a plan or a strategy that aims at, or even explicitly allows, injustice. Yet many policies are open to the accusation that they ignore, in practice, the requirements of *social* or *environmental* justice. We recognize the validity of some such accusations, and argue that their dismissal by the authorities can be traced back to an inadequate understanding

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of the variety of fundamental justice-related concerns. Even the explicit ideas on justice included in current sustainability thinking are not adequately geared to settle social and environmental issues. Although fairness, inclusiveness and responsiveness have been identified as crucial factors in successful environmental governance, significant dimensions of justice have been practically ignored in many central policy frameworks and in analyses of them. This is true specifically in the case of bioeconomy (e.g., Mustalahti, 2018), but also more widely in environmental governance literature, with contributions often failing to address fundamental normative questions.

A promising attempt to go deeper, based on the concept of "climate justice" (Dooley et al., 2018; Shrivastava & Bhaduri, 2019), focuses on operational matters from the perspective of sharing responsibilities intergenerationally (Page, 2007). Extending this kind of critical scrutiny into the institutional and structural features that underlie and define the prevailing take on justice and policy valuations would add depth to analyses. Similarly, inclusiveness as a possible path to social sustainability in renewing environmental policies has gained attention in the discussion (Gupta & Vegelin, 2016). We believe that a more detailed comprehension of the different dimensions of justice, and of how these dimensions are weighed in influential views, can produce new and valuable knowledge both about the internal conflicts of policy frameworks and about wider environmental governance. Insofar as international collaboration is based on agreements, the debate and critique of their ideological and value bases should be taken seriously (e.g., Goven & Pavone, 2015).

1.2 The research question, the scope, the method, and the course of the examination

Our research question is: To what degree, how, and why do social and environmental dimensions of justice remain underrepresented despite the proclaimed realization that justice is paramount in international agreements and policies? We answered the question in the context of the European Union bioeconomy policy, and our method is applied political philosophy analysis.

We conducted a conceptual literature survey of the most relevant beliefs and concerns related to justice; identified polarities between them; and compiled around those polarities a map of justice in which we presented major political moralities as partly clashing interpretations of equality. We then scrutinized the European Union's (EU) 2018 bioeconomy strategy (European Commission, 2018) as a representative example of a sustainability-oriented international policy; noted its proclaimed aims (environmental, social, and economic); unearthed its actual agenda (technology and business innovation); and identified potential discrepancies between these sets of goals as well as their connections to the prevailing sustainability ideas.

We then identified the impact and value bases of the global environmental regimes that steer such strategies. All recent climate negotiations and agreements influence, of course, sustainability-related policymaking, but the United Nations (UN) Sustainable Development Goals (SDGs) play a central background role. Once we had clarified the place of SDGs in sustainability thinking, we situated the European Union's bioeconomy strategy on our map of justice; analyzed the meaning of its location; and assessed the problems caused by the constellation. Our general conclusion was that the contemporary reading of sustainability, by internalizing all considerations of justice into the economic realm, contributes to their externalization in other matters, thereby leaving gaps in the coverage of social and environmental justice.

2 The map of justice

2.1 The importance of justice

Justice is a crucial part of the ethos of the United Nations, and hence the entire international community, in two senses. It is, as a concept, included in the Sustainable Development Goals (SDGs) confirmed in Paris and New York (United Nations, 2015a, b, c, d). Goal 16 "aims to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels" (United Nations 2015e). All other SDGs, too, cover matters that are directly related to aspects of justice—end poverty and hunger; ensure wellbeing for all, education for all, gender equality; and reduce other inequalities (United Nations, 2015b, p. 14).

The topic-specific SDG 16 aims, however, at legal stability and the rule of law, which is only a part of what justice means. Other SDGs favor certain types of equality over others: SDG 5 requires that we *ensure* gender equality, but SDG 10 only recommends that we *reduce* other inequalities. The 17 goals and their 169 associated targets are supposedly integrated and indivisible: none of them can be protected or reached without all the others (United Nations, 2015b). In practice, some of them could be seen as more important than others, though, and have a gatekeeper role. The material ends mentioned in many other SDGs are arguably unreachable unless stability, rule of law, and gender equality prevail, so perhaps they should be given exceptional weight. This is a tempting idea, but one that can also lead to the prioritization of other, notably economic, factors (e.g., Ehresman & Okereke, 2015). Another central issue is the inbuilt principle of *no significant harm* that suffers from a crucial problem: its use externalizes the environment (Gupta & Schmeier, 2020). A similar weakness is in evidence in the official use of the ethico-political rule that we concentrate on here, namely the principle of *justice*, inadequately understood in policymaking and often also in research that assesses policymaking.

2.2 Dimensions of justice: variables and polarities

Almost everyone agrees that the core of justice is equality. From a formal viewpoint, this is easy to define. We must recognize, respect, and treat everyone equally and equitably; everybody is to count for one and nobody is to count for more than one in political procedures; and in making decisions, we should hear or account for everyone affected by them. Beyond this simple consensus, interpretations vary. Who counts among everybody, what exactly should be recognized and respected, and what does equal treatment mean? The disagreement is based on different beliefs on what features of equality are important; and diverging views on how these features should guide our actions and policies; as our previous theoretical work has explicated (Häyry, 2010, 2018, 2021, 2022). Three dimensions are particularly interesting from the viewpoint of studies into international environmental agreements, regulation, and strategy setting.

First, the *responsibility* or *economy* dimension tells apart two types of social and economic views. One promotes individual responsibility and the private control of the means of production; the other social responsibility and the shared or public control of the means of production. As philosophical positions, these have been represented by *libertarian* thinkers like Robert Nozick (1974) and *luck egalitarian* theorists including Ronald Dworkin (1981a, b) and Gerald Cohen (1988, 1989), respectively. Libertarianism is closely

associated with the economics of neoliberalism, heralded by Friedrich Hayek (1960) and defended by many others after him. The economical counterpart of luck egalitarianism could be socialism, but the connection is not as tight as that between libertarians and neoliberals.

Secondly, the *opportunities* dimension marks a continuum between *care and relations ethics* on the one hand and the *capabilities approach* on the other. Care ethics as an alternative to counting outcomes or adhering to preset rules emerged with Carol Gilligan's (1982) work on women's moral development. The proposal to foster capabilities instead of increasing calculable wellbeing was introduced in development studies by Amartya Sen (1992) and Martha Nussbaum (1998). Emphasis on care and special relations has later on given rise to both theoretical (e.g., Haraway, 2007; MacCormack, 2020) and political manifestations of intersectional feminism. Capabilities theorists are likely to stay closer to liberal feminism and stress the universal nature and range of humanity and rights, as opposed to their positionality, or dependence on our interconnectedness with one another, the care ethicists' choice.

Thirdly, the *interests* dimension divides views into those that focus on local concerns or tradition, and those that advocate the global maximization of measurable wellbeing. Michael Sandel's (1982) *communitarianism* is an example of the former, and John Harsanyi's (1982) preference *utilitarianism* of the latter. Politically, the stress on communities can range from the liberal protection of indigenous ways all the way to the defense of neo-nationalism, with a specter of "our group first" versions in between. Communitarians share the stance of positionality with care ethicists. Utilitarians have a theoretical dispute with capability theorists, who argue that even rational and autonomous preferences, Harsanyi's favorite, can be adaptive, determined by oppressive traditions, in which case their satisfaction is not recommendable.

These three dimensions help us to identify six theories of justice and to mark their mutual locations, proximities, and distances. Figure 1 presents the pattern, with explanatory concepts in their places. Our main point here is not to describe the six theories in
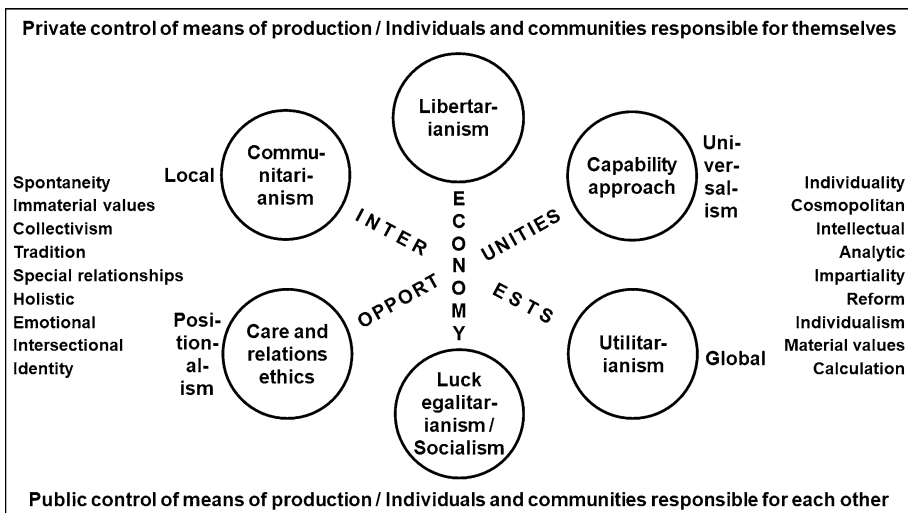

Fig. 1 Map of justice with dimensions, theories, and variables

detail (although brief characterizations follow), but rather to offer them as ideal types in a Weberian sense (Weber, 1978, xxix–xxxiv).

The distinction between libertarianism and luck egalitarianism (or socialism) is simple and fully definable in terms of responsibility and ownership. The universalist and global theories—capability approach and utilitarianism—differ, however, from the positionalist and local views—care and relations ethics and communitarianism—on a plethora of further variables. Figure 1 lists these in the margins. Positionalists favor spontaneity in the formation of social practices, immaterial (spiritual, esthetic) values, collectivity, tradition, special relationships assigning people their dues, a holistic take on understanding, weight on emotional responses, intersectionality in the acknowledgement of moral agents and patients, and identity as a basis for recognition. Universalists champion calculation in the design of laws and social policies, material (tangible, measurable) values, individualism, reform superseding tradition, impartiality in the assignment of duties and entitlements, an analytic approach to understanding, weight on intellectual considerations, cosmopolitanism in the endowment of moral status, and individuality instead of group memberships as the basis of recognition (Stevenson et al., 2017; Hänninen & Aaltola, 2020). Not all of these are essential for our present task, but they illustrate the dividing lines between the views of justice as interpretations of equality.

2.3 Doctrines of justice

The six doctrines, or ideal types, can be briefly characterized as follows (Häyry, 2018, 2022).

Libertarianism and luck egalitarianism (or socialism) represent opposites in economic and related normative thinking. One believes that the freedom of the market from political interference is the best way forward both morally and materially; the other holds that such freedom only licenses detrimental corporate greed and has to be reigned. One believes that individuals are free to make, and therefore responsible for, their own choices; the other holds that since our actions are mostly steered by social and cultural determinants, it is kinder and wiser to assume joint social responsibility for them (e.g., Ahola-Launonen, 2018).

Communitarianism and utilitarianism can agree on the importance of interests but disagree on the proper range and manner of pursuing them. One favors communal integrity and emphasizes the right of traditional groupings—nations, peoples, and others—to concentrate on their own, organically and historically shaped good. The other prefers impartially assessed good, scorns tradition for its own sake, and advocates rational reforms aimed at the wellbeing of as many sentient beings as possible regardless of their nationality, ethnicity, species, or other differentiating but morally irrelevant features (e.g., Takala & Häyry, 2004).

Care and relations ethics and the capability approach both champion equal opportunities, but assign them on dissimilar grounds. Although one and the same person can in the end be empowered, positionalists in the care and special relations camp want to do this on grounds of intertwining group memberships, while the universalists in the capability end of the continuum wish to focus on individuals as individuals trying to break out of the web of interdependencies. Feminist moral and political thinkers often combine the two quite seamlessly, which can be theoretically baffling (e.g., Hallamaa, 2017; Nussbaum, 1998).

In addition to these distinct ideal types, there are compromise views that combine their features in diluted concentrations. Examples include justice as fairness as formulated by

John Rawls (1972) and discourse ethics as defined by Jürgen Habermas (1984–1987). These liberal egalitarian, or social liberal, views will play a methodological role in our final analysis, and that role will be explained in due course. First, however, let us examine the EU bioeconomy strategy, an attempt to outline key policy choices in accordance with vital climate and environmental agreements and the internationally approved values underlying them.

3 The European bioeconomy strategy

3.1 Bioeconomy as a replacement for fossil economy

The European Union's bioeconomy strategy (hereinafter, the Strategy) can be seen as an embodiment of the ideals prevailing in contemporary global governance of environmental matters. Our focus is on the Strategy's updated version *A Sustainable Bioeconomy for Europe: Strengthening the Connection between Economy, Society and the Environment* (European Commission, 2018), and we confine our scrutiny to an explicit interpretation of the document.

Bioeconomy in its promised essence is an attempt to simultaneously support economic growth and offer solutions to environmental problems by a systemic shift from the use of depletable fossil fuels and materials to the use of renewable biofuels and biomaterials (e.g., Kurki & Ahola-Launonen, 2021). It has been one of the proposed solutions to economic and environmental problems since its introduction in the mid-2000s by the EU and the Organisation for Economic Co-operation and Development (OECD). From time to time, it has been complemented by other environment-friendly ideas, and when the concept's popularity peaked during summer 2019, the buzz phrase was "sustainable circular bioeconomy that respects planetary boundaries". After that, highest-level references to the idea have been on the decline. In December 2019, the European Commission released a communication, *The European Green Deal*, that emphasizes circularity, refers to bioeconomy only five times, and those in passing.

Bioeconomy has not vanished, however, and the 2018 strategy is still in the process of being implemented in many European countries. The Strategy and parallel documents— *The European Green Deal* (European Commission, 2019a), *Clean Energy for All Europeans* (European Commission, 2019b), and *Circular Economy Action Plan: For a Cleaner and More Competitive Europe* (European Commission, 2020)—are formal policy outcomes of the climate objectives of the Paris Agreement (United Nations, 2015a), of which more in the next section.

3.2 What the strategy states

According to the introduction of the Strategy (European Commission, 2018, p. 4):

"We live in a world of limited resources. Global challenges like climate change, land and ecosystem degradation, coupled with a growing population force us to seek new ways of producing and consuming that respect the ecological boundaries of our planet. At the same time, the need to achieve sustainability constitutes a strong incentive to modernise our industries and to reinforce Europe's position in a highly competitive global economy, thus ensuring the prosperity of its citizens. To tackle

these challenges, we must improve and innovate the way we produce and consume food, products and materials within healthy ecosystems through a sustainable bioeconomy."

This opening passage suggests that Europe must have a strategy for two partly interrelated but separate reasons. First, limited resources, climate change, land and ecosystem degradation, and population growth are challenges that must be met. This is in accordance with already existing and widely accepted policies related to emissions targets and the like, which aim at the protection of the natural environment. Secondly, Europe needs sustainability in terms of global economic competitiveness, and Europeans must therefore innovatively produce and consume their way out of the looming stagnation.

The first aim, however, drifts into the background already in a closer reading of the introduction, and the impression strengthens in the substance, action, and background parts of the document.

3.3 Challenges, solutions, and expectations

Table 1 summarizes the challenges presented in the strategy, the outline of the solutions, the weight given to the challenges, and some expectations voiced in the strategy, with our interpretive notes (marked with "=").

We start in the first column with limited resources, climate change, land and ecosystem degradation, growing population, the unsustainability of current production and consumption, and concern about the prosperity of EU citizens. These are the challenges that, judging by the introduction of the Strategy, should, together, set its tone. The overall solutions offered by the strategy emphasize changes and growth in production and consumption, the modernization of industries, boosting EU businesses in the global market, and innovating ecosystem failure away by consuming and producing more but better. This leads to the observation that, from the outset, no intrinsic weight is given to the—initially motivating—ecological, environmental, or resource-depletion issues. The observation echoes some early critiques of sustainable development (Lélé, 1991).

Throughout the report, a brighter future lies ahead with the timely use of incentives such as start-up investments, especially in the of past sustainability achievements in the EU and bright estimates of new employment opportunities. Critical commentators have suggested that incentives may turn out to be unnecessary and detrimental subsidies for established corporations; start-up investments are in many cases arguably tax-payers' money spent on uncertain buzz; sustainability achievements in the EU are frequently contested definition-based sleights of hand; and new employment opportunities may or may not materialize and may or may not equal the jobs lost in the fossil sector (Fatheuer, 2018; Mittra & Zoukas, 2020). The vocabulary of incentives, achievements, and estimates is, however, already in use in several EU policies, so in this sense the Strategy's approach falls in line with well-established practice.

Limited resources, climate change, and environmental decay are mentioned time and again as problems, but no suggestions of concrete solutions are directly addressed to them. It is also noteworthy that the Strategy does not seem to encourage new regulations to prevent harm and degradation. Of the focal concepts in the protection of the natural environment, "biodiversity" is cited 79 times, but fleeting references to certification are the closest that the document comes to protecting or promoting it. Certification in its current form is

Table 1 Challenges and responses according to the Strategy, with interpretive notes

Challenges	Outline of solutions	Weight	Expectations & initial interpretations
Limited resources	"seek new ways of producing and consuming that respect the ecological boundaries of our planet" "modernise our industries" "reinforce Europe's position in a highly competitive global economy"	The first three challenges are sub-ordinated to production and consumption as after-thoughts in the first and last solutions	"A sustainable bioeconomy can turn biowaste, residues and discards into … resources and … create the innovations and incentives to help retailers and consumers cut food waste by 50% by 2030." = Focus on innovations
Climate change	"improve and innovate the way we produce and consume food, products and materials within healthy ecosystems through a sustainable bioeconomy"		"Timely action is needed to … the adaptation and mitigation of climate change through 'negative emissions' and carbon sinks." = Mostly cited as a challenge, with a few "more concrete" references like this
Land and ecosystem degradation			"The strong and fast-growing startup ecosystem in the biotechnology sector will play a leading role in realising this potential." = That this is one of the most concrete references to ecosystems may tell something about the priorities
Growing population		The fourth challenge is not addressed, just cited	N/A = A more political interpretation of "bioeconomy" and "sustainability" might address this, but its consideration is hindered by the negative reputation of many extant population policies
Need to achieve sustainability		The fifth and sixth challenges are sub-ordinated to, or maybe defined as, production and consumption in the last solution	"The EU is already a global leader in the sustainable use of natural resources …, which is essential to most of the Sustainable Development Goals." = Sustainability is defined economically, other factors are dependent / secondary
Ensure the prosperity of EU citizens			"In the bio-based industries one million new jobs could be created by 2030, according to industry estimates." = Estimates are based on audacious growth expectations. They also fail to address the issue of equal distribution

contested and unsure to guarantee any kind of sustainability, as has been shown (Kuulu-vainen et al., 2019) in the case of forest bioeconomy.

Nevertheless, the Strategy boasts to embrace the ideal of sustainability, which has dominated international environmental responses for decades. With the relative dismissal of social and ecological factors, how is this possible?

4 The meaning of sustainability in the European bioeconomy strategy

4.1 Public and official perceptions of sustainability

The public perception of sustainability centers around ecological and environmental concerns. The epitheth "sustainable" means for consumers and citizens a real or imagined connection to protecting nature and its resources. Those who believe that the connection is real often alter, or aspire to alter, their behavior accordingly. Those who believe that the connection is imaginary have no reason to change theirs. Both fractions can be wary about greenwashing and corporate spin. This conception is well in keeping with mid-twentieth century and contemporary worries about resource depletion, population expansion, pollution, and waste. (Desrochers & Hoffbauer, 2009; Klausen & Bashford, 2010.)

Politicians, businesses, and scientists have, however, developed their own interpretation of sustainability. Environmental aims are not left out of the agenda, but the vocabulary stresses notions such as economic progress, technological innovations, and systemic change. The emergence of this "official" view on sustainability can be traced back to the introduction of the concept. As the Strategy (European Commission, 2018) follows in the footprints of the 2015 UN SDGs approach (United Nations, 2015a, b, c, d), an account of the emergence of that approach elucidates its potential challenges.

The Strategy opens up with mostly ecological and partly economic and social concerns, gradually forgets the ecological and social aspects, and concludes by economic actions that endeavor to offer a suitable and feasible program for generating prosperity to some within the EU. As the Strategy explicitly concentrates on the economic perspective, it fails to recognize the intrinsic importance of the other values that could and should be accounted for in the envisioned transition from "bad" fossils to "good" biomaterials. The following subsections show how well-intended, even celebrated advances in sustainability thinking have led to, or reflected, an ideological shift that has contributed to the tendency to subject environmental policymaking to purely economic goals like this.

4.2 The birth of sustainable development: the Brundtland Report and its background

In the 1980s, environmental science was proceeding swiftly but national and global policymaking was filled with disputes. Scientists knew about global warming and it was partly attributed to carbon dioxide (CO_2) emissions but also to pollution and natural cycles. Ecological decay was recognized but many believed that it was caused locally by bad environmental governance rather than globally by conducting business as usual. The Bhopal gas tragedy in 1984 and the Chernobyl nuclear disaster in 1986 seemed to underline the failure-to-manage-things approach. In addition, the Cold War and the arms race were still ongoing and focused minds on an impending nuclear holocaust instead of more abstract

climate concerns. Third World post-colonial development issues began to emerge, though, and started to stir political concern. This, with the solid rise of neoliberalism in world economy, provided a background of sustainability thinking as formulated by the Brundtland Commission (Borowy, 2014).

In 1972, the UN organised a Conference on the Human Environment in Stockholm, but a decade later it had become evident within the organization that the issues raised by it had not been properly addressed (Najam, 2005). Attempts to reduce poverty in low-income countries by industrialization did not always succeed, and when they did, they posed a threat to the environment. Economies both in the Global South and in the Global North were contributing to pollution, acid rain, deforestation, desertification, the thinning of the ozone layer, and climate change produced by greenhouse gases. The neoliberal world order—accelerated economic globalization—seemed to force both low-income countries and high-income countries to build and maintain economies that were prone to degrade the environment.

Perpetual material growth was identified by many as a driver of the detrimental change, but technological backwardness and lack of modernization were also cited as the main culprits (Borowy, 2014). Disagreement reigned over the blessings of progress based on business and technology (capitalism), the redistribution of wealth by structural social changes (socialism), and the incrimination of consumers for their short-sighted and selfish choices (moralism). To gain clarity on the situation and to find the best way forward, the UN initiated in 1983 the World Commission on Environment and Development, known after the name of its first chair Gro Harlem Brundtland (United Nations, 1987).

The Brundtland Commission's task was to show how, by using a combination of economic freedom, prompts for structural changes, and international regulation, the wealthy in the First World can keep living like they do while people in the Third World can improve their situation without causing permanent environmental damage. The neoliberal world order as the economic context was taken for granted, and the aim was to offer paternalistic guidance to countries in the Global South so that they could strengthen their democracies and improve their citizens' wellbeing without depleting the natural resources that are needed for keeping the world going also in the future (Appleton, 2006; Hopwood et al., 2005).

The Commission's solution was to borrow the concept of "sustainable development" from an earlier document and redefine it to fit the purpose. In the earlier document, *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, the International Union for Conservation of Nature and Natural Resources (IUCN, 1980) had insisted on a conceptual distinction between economic development and the conservation of living resources, arguing that a balance should be stricken between the two on several interacting structural levels. The Brundtland commission ignored the conceptual precaution of their predecessors and went, in their own Report, for a combined account, in which economic and social development are amalgamated with environmental targets. The result was the oft-cited wording: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987, p. 37).

The definition has been seen to give priority to the world's poor and their needs (Barkemeyer et al., 2014; Hoyos et al., 2010) and to cover environmental challenges in its call for a liveable world also for generations to come. While this is true and laudable, there is a flaw, or loophole, in the design. Abandoning the analytic clarity of the IUCN suggestion rules out the possibility of transparent calculations and comparisons, and introduces, instead, a more opaque approach of attempting to reach three possibly incommensurable

goals—economic growth, social or political equity, and environmental harmony—all at once. This turned out to become a permanent feature of the UN approach, good for political compromises but not necessarily ideal for promoting social equality or ecological aims. The Intergovernmental Panel on Climate Change has provided convincing empirical support to our observation that the Brundtland way has not alleviated environmental decay or the problems of poverty and inequality. Planetary boundaries will soon be reached, with dire consequences to the world's population, unless greenhouse gas emissions are radically reduced (IPCC, 2022).

4.3 From the Rio summit to the sustainable development goals

The next step in sustainability thinking was taken in the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, also known as the Rio Summit. While the Brundtland Report emphasized the development and equity dimensions of sustainability, keeping an eye on environmental concerns, the Rio Summit shifted the focus more decidedly on the environment (Drexhage & Murphy, 2010). After the collapse of the Soviet Union, it seemed that the contest between capitalism and socialism was over. Francis Fukuyama (1992) famously announced that history had ended, and everything was set for a peaceful march toward universal freedom, democracy, and wellbeing provided by a collaborative global market. The timing was ideal for world leaders to show a united front in tackling the residual but solvable environmental issues. The necessity of unhindered material growth, though, was encapsulated by a quote attributed to one of the most important signatories, the President of the United States George H. W. Bush, stating prior to the Summit that "The American way of life is not negotiable" (Drexhage & Murphy, 2010, p. 7).

This is the point after which declaration talk and reality have mostly gone their separate ways. The pièce de résistance of sustainability language in declarations has been the ecological aspect, increasingly climate change and the reduction of CO_2 emissions. The reality, on the other hand, has been economic (Drexhage & Murphy, 2010, p.10; Hopwood et al., 2005). A notable change since that time, for better and for worse, has been the multiplication of the goals for sustainable development.

The Brundtland Report centered around three main dimensions of sustainability—economic, social, and environmental—but introduced many more as specifications (Redclift, 2006; United Nations, 1987). Since the boundaries and connections between these dimensions were left open-ended, and since the overall impression was holistic rather than analytic, the Report received both appreciation and criticism, from various angles. From a pragmatic viewpoint, it was easy to see the Report's definitional flexibility as a strength, because it kept the much-needed discussion going in a relatively amicable atmosphere (Drexhage & Murphy, 2010). On the other hand, however, some business actors and their proponents thought that social and ecological factors were allowed to thwart economic growth (Clarke et al., 1994); defenders of Third World countries argued that environmental hindrances prevented them from increasing the wellbeing of their citizens (Angelsen, 1997), and ecologically oriented observers critiqued the artificial conflict between social equity and environmental conservation created by the Report's interpretations (Hueting, 1990).

The *Rio Declaration on Environment and Development* (United Nations, 1992) and ensuing UN summits and announcements continued to refine and multiply the criteria of sustainability (Redclift, 2006; von Schirnding, 2005). Following the United Nations

Climate Change Conference in Paris (United Nations, 2015a), representatives of the UN member states gathered in New York to agree upon aims that are now known as the 17 Sustainable Development Goals (SDGs). Unsurprisingly, these have come under criticism, among other things, for their sheer number, which makes their application unpredictable (Smith and Gladstein, 2018; Struckmann, 2018; Swain, 2018; Kroll, 2019). Another point of contention has been the business-as-usual approach that had, according to some observers, by 2015 become the UN hallmark in matters concerning climate change and environmental and social matters more generally (Norren, 2020). As a continuum of the same policy, the Strategy for European bioecomy is vulnerable to similar criticisms.

5 Justice in the European bioeconomy strategy based on SDGs

5.1 The multiplicity of SDGs as a source of potential problems

The 17 SDGs are: (1) end poverty, (2) end hunger, (3) ensure health and wellbeing for all, (4) ensure quality education for all, (5) achieve gender equality and empower all women and girls, (6) ensure water and sanitation for all, (7) ensure affordable and clean energy for all, (8) promote economic growth and decent work for all, (9) build infrastructure, promote industrialization, and foster innovation, (10) reduce inequality, (11) make human settlements inclusive and safe, (12) ensure sustainable production and consumption, (13) take action to combat climate change, (14) conserve oceans and seas, (15) protect terrestrial ecosystems and protect biodiversity, (16) promote peace and justice, and (17) strike global partnerships (United Nations, 2015b, p. 14). All these are integrated and indivisible—equal in the sense that they must all be pursued at all times.

The catalogue is impressive, and achieving all this would be a major feat. There are two issues, though. The first is that when every item is seen to carry equal weight, the SDG model can be used as a shopping list. Corporations and governments can pick the concerns they can address at the least expense, and then claim that they are meeting the requirements of sustainability. Which they are, according to the rules of the game. The second issue is that the model is an invitation to name a *primae inter pares*, or a first among equals. Can we not name, the line of thought goes, a master goal that is the key to achieving all or many other goals, as well? This question has been answered in the Brundtland Report, in the Strategy, and in many other agreements affirmatively. "Yes, we can. Economic growth." And therein lies the problem.

5.2 Economic justice in the Strategy

Referring back to our map of justice, three main theories are focal in the Strategy and its implementation. These are *communitarianism* that emphasizes tradition and old ways, *libertarianism* that roots for individual responsibility and initiative, and the *capability approach* that supports people's positive freedoms to achieve what they genuinely want. The three share a reliance on the private control of means of production, but with different background assumptions and partly clashing practical orientations.

Traditionalists believe in old industries, precaution in the face of change, and continuity in production methods and business manners. Modernists place their trust on innovations, excitement about change, and growth in new ways. When libertarians join forces with capability promoters, they come up with solutions like the ones we saw hinted at in

the introduction of the European strategy. We need, according to them, primarily startups, technology, and new kinds of businesses. When libertarians forge alliances with communitarians, they are more likely to stick to what has been done before. In this case, mining, forestry, and agriculture loom large.

Some environmental policies put limits to traditional activities, especially if they are likely to pollute their immediate neighborhood or contribute to gashouse emissions. The reaction to this in the implementation of the Strategy has been to compensate the losses to those in lines of business that are becoming old-fashioned or obsolete. The recipients of compensation include, on the regional level, Central European countries that still rely on coal mining and, on national levels, farmers receiving subsidies for otherwise unviable production (Stevis-Gridneff, 2019; Niemi & Väre, 2019). This is what, in the discussion on new forms of production, in bioeconomy and elsewhere, could be called *economic sustainability*. But there is more to *justice* than that.

Supporters of economic sustainability are aware of this, as seen in the wording of the Strategy's introduction (European Commission, 2018, p. 4). All SDGs are equal, and all of them should be striven for. But since economic growth, they believe, is the gateway to reaching other goals, we only need to pay *direct* attention to economic innovations, prosperity, and compensation. The work done in these areas will produce a trickle-down effect that will guarantee social equality and ecological conservation, as well. It has been observed time and again that no evidence supports the trickle-down theory and that therefore more needs to be done (e.g., Bina, 2013).

5.3 Ecologico-social equality and its foundation

An alternative, or complement, to economic sustainability would in light of our map of justice be *ecologico-social equality*. This could, in one way or another, be supported by *care and relations ethics*; views supporting shared responsibilities including *luck egalitarianism* and *socialism*, and *utilitarianism*.

All these doctrines can accept public involvement in matters of responsibility and redistribution, but again, there is a distinction between the extreme views. This distinction is not immediately visible, if we concentrate on the desired outcomes, because both utilitarian and care-and-relations approaches can, in their own ways, give weight to nature, nonhuman animals, and the environment. Care-and-relations ethicists are likely to argue that nature, nonhuman animals, and the environment have intrinsic or relational value. By "intrinsic" they mean that the entities have value in themselves, and by "relational" that they have value due to their interconnectedness with each other and with humanity. Utilitarians can also assign intrinsic value to animal wellbeing, and demand the minimization of nonhuman suffering as a value in itself. But they can, in addition, say that by mistreating nature, animals, and the environment we cause human suffering, which should also be minimized. In this case, the entities have "only" instrumental value.

The distinction is theoretically deep and involves several dimensions that are philosophically irresolvable. One side wants to approach matters holistically ("everything is one"), the other analytically ("everything should be chopped to pieces for scrutiny"). One sees identity as the cornerstone of moral valuation, the other gives this role to the capacity to experience pain and pleasure. One favors spontaneity in the emergence of rules for action, the other prefers meticulous calculation.

One way to get over this conflict would be to disregard theoretical disputes and recognize the agreement on a more practical level. Whatever the source, both care-and-relations

ethicists and utilitarians see in nature, nonhuman animals, and environmental preservation something that could be called *essential value*. This could then form the normative basis of ecologico-social equality, which should be accounted for with importance that is equal to the importance given to economic factors.

6 Conclusions and a way back

Sustainability and justice are important principles in global environmental governance and its assessment. In this study, we situated the professedly sustainable European Union bio-economy strategy on a map of justice as interpretations of equality. We concluded that the Strategy observes the sustainable development ideology that was formulated in the Brundt-land Report in 1987 and given its current form in the SDGs agreed upon in Paris and New York in 2015. Justice, however, is another matter. Figure 2 presents the findings as elaborated in Sect. 5.

Champions of individual responsibility and the promotion of capabilities can agree that bioeconomy should revolve around innovative technological and business solutions. Supporters of tradition and old ways would prefer a more conservative approach, but can be persuaded to accept the progressive line, when it promises them compensations for lost livelihoods. Together, these can argue that social and environmental problems will be solved by a trickle-down effect produced by the advances. This is the economic sustainability model.

The premise of our map of justice is, however, that everyone should be heard, or taken into account, in making decisions that affect them. This is also stressed by the compromise views on justice by Rawls and Habermas, flagged up in our account of interpretations of equality. The economic sustainability model does not give a voice to those who advocate care, relations, shared responsibility, and the wellbeing of all sentient beings. Justice does not properly prevail unless their call for ecologico-social equality is heeded. The European
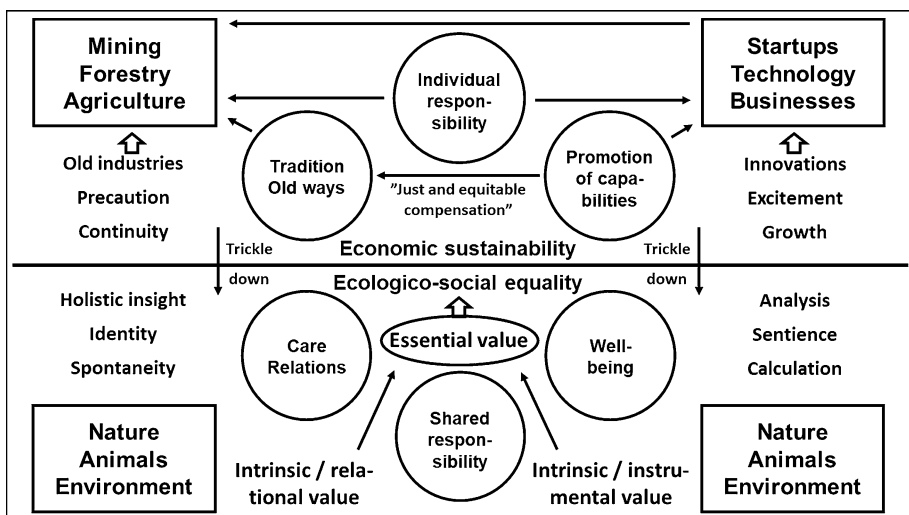

Fig. 2 The economically sustainable EU bioeconomy strategy on a map of justice

bioeconomy strategy is an example of environment-related international agreements that do not heed the call.

Ways forward could include major system changes like degrowth and population control. In addition to those, a way back is available. We could reject "sustainable development" as formulated by Brundtland and go back to the International Union for Conservation of Nature and Natural Resources 1980 version. That would mean recognizing the clash between economy and ecology, examining methodically the myriad chains by which they are interconnected, and paying due attention to all values represented by the different theories of justice.

Availability of data and material All data and material used are in the public domain.

Code availability Not applicable.

Declarations

Conflict of interest There are no conflicts of interest or competing interests.

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