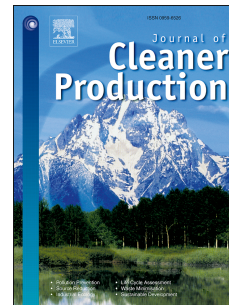


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Amos Taylor: Conceptualization, Methodology, Software, Formal analysis, Writing- review and Editing.

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Exploring Transformative Policy Imaginaries for a Sustainable Post-COVID Society

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Highlights

- The COVID-19 pandemic has reinvigorated public imaginaries of a more sustainable post-pandemic future;
- The imaginary of green growth still prevails in the three analyzed policy packages, particularly in the European Green Deal despite the COVID-19 shock;
- Two groups of imaginaries in response to the pandemic, sustainability and climate change could be identified: “business as usual” and “moderated degrowth”;
- Alternative imaginaries need to be considered that are more conducive towards a degrowth blueprint;

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Abstract

The COVID-19 crisis and its underlying health, socio-economic and environmental challenges warrants a discussion about transformative policies for a more sustainable, post-pandemic world. At EU level, policy packages and initiatives such as the European Green Deal (EGD), the Bioeconomy Strategy (BES) or the Circular Economy Action Plan (CEAP) may have the prerequisites to support a sustainable socio-economic transformation. But can these initiatives live up to public imaginaries of a sustainable post-pandemic world? To answer this question, we conducted a qualitative media analysis in order to outline emerging public imaginaries, as well as different policy suggestions put forth by different media outlets. We then grouped these imaginaries into seven major themes ranging from finance to resource management and city planning. With the help of the Delphi approach, we discussed these themes with a panel of ten international experts in order to scope for different transformative policy options. The public imaginaries we identified represent a mix of imaginaries underpinned by different political ideologies, economic philosophies and sustainability rationales. The highest expectations were connected to the EGD, although none of the EU policy packages can singlehandedly tackle the urgent sustainability challenges posed by the pandemic. However, the current trajectory of the EGD is geared towards the business-as-usual. We discuss how EU policies can overcome this limitation and imagine more radical transformation pathways in order to jumpstart a sustainable post-COVID recovery that goes beyond pursuing green growth.

Key words: COVID-19; Sustainability imaginaries; media analysis; Bioeconomy; Circular Economy; Green Deal;

1. Introduction

The COVID-19 pandemic does not only pose the threat of a financial recession, but also risks exacerbating ongoing major global environmental crises such as climate change, environmental degradation and enduring resource depletion. Even before the pandemic, talks about climate change mitigation, nature conservation, and pursuing a sustainable, more close-to-nature economic path were ardently debated in various scientific, political and economic fora. In the European Union (EU) for example, three of the most well-known recent initiatives addressing the broader concept of sustainability are the Bioeconomy Strategy (BES) (EC, 2018) the Circular Economy Action Plan (CEAP) (EC, 2020), and the European Green Deal (EGD) (EC, 2019). All three proposed pathways broadly aim at the same outcome: the transition to a greener, more sustainable European economy (D'Amato et al., 2017). The BES for example is rooted in the idea of deriving materials, chemicals and energy from renewable bio-based materials, thus “strengthening the connection between economy, society and the environment”(EC, 2018). Similarly, the CEAP brings the concept of sustainability one step further by focusing on the industrial process and its transformation from a linear to a circular process, where the product lifecycle is redesigned, thus enabling the EU “(...) to set global standards in product sustainability (...)” (EC, 2020: 6). Last but not least, the EGD is a set of policy initiatives that encompasses the aforementioned strategies, as well as a number of other policies aimed to transform the EU into a competitive green economy. More so, the European Commission claims the EGD is also “(...) our lifeline out of the COVID-19 pandemic.”(EC, 2021)

Meanwhile, a growing number of online publications postulated that the COVID-19 might become known as the disaster that triggered a more sustainable way of living. The World Economic Forum even talks about a so called “great reset”, framing the pandemic as “a rare but narrow window of opportunity to reflect, reimagine, and reset our world” (WEF, 2020). Other media outlets featured a multitude of different news and opinion pieces, each containing various expert sustainability imaginaries of a post-pandemic world. The role media plays in such debates is central, as it represents an important venue for political opinion formation (Aelst and Walgrave, 2011) in which different societal actors such as environmental organizations, research-, business- and governmental- representatives voice their opinions (Schmidt et al., 2013; Steffek, 2009). In the Habermasian ideal form of public debate (Habermas, 1996) such a communicative venue may facilitate balancing different interests and reaching an understanding on different global issues and the different ways of pursuing them (Schmidt et al., 2013). But this “idealistic” account of a public sphere is far from inclusive (Fraser, 1992), and conflicts may nevertheless persist, in which case mass media coverage may mirror a compromise between the negotiated positions (Mouffe, 1992). Furthermore, the mass media contribute to agenda-setting by giving prominence to certain topics and actors (Aelst and Walgrave, 2011; McCombs and Shaw, 1972).

Given the relatively few scientific investigations on COVID-19 in the media so far (see e.g., Cinelli et al., 2020; Metcalfe et al., 2020) it becomes interesting to explore what collective ways of thinking and seeing the pandemic are transmitted by the mass media and how these may or may not influence policies focused on sustainable development. Such collective “imaginaries” may configure and/or disrupt present political decision-making along with societal behaviors (Wesselink et al., 2013; Yusoff and Gabrys, 2011). “Imaginaries”, understood here according to Jasanoff (2015, p. 4) as “collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of advances in science and technology”, provide a conceptual approach to analyzing how certain policy frameworks emerge, and which social actors are involved (or excluded from) the development of future visions of society (Birch, 2016). Imaginaries cannot be equated with policy agendas because they are less instrumental, less explicit and goal-oriented (Holmgren et al., 2020). They can however entail active exercises of state or corporate power through, e.g., the allocation of funds and investment in certain infrastructures or technologies, or through political cooperation (or opposition) regarding certain issues of interest (Jasanoff and Kim, 2015). A number of studies have empirically employed the concept of “imaginaries”, generally highlighting the role of discourses, narratives, and visions in the co-production of socio-economic phenomena, scientific research or activities related to the green-, circular-, or bio-economy (Birch, 2016; Farné Fratini et al., 2019; Holmgren et al., 2020; Shear, 2010). Here, we focus on the idea of a post-COVID sustainable society, as imagined by different media outlets and international experts.

The overall objective of this research article is thus to understand what emerging public imaginaries of a post COVID-19 world have been promoted by the mass media so far, and if the three selected EU policy initiatives are well equipped to fulfill these imaginaries. In doing so, we discuss whether or not existing initiatives are transformative enough to deliver on these different sustainability imaginaries. Considering the three assertions outlined above, that a) the global pandemic is offering an unprecedented opportunity to reshape our society’s approach to the economy, environment and sustainability, b) the media is reflecting different public sustainability imaginaries of a post-pandemic world, and c) that the EU already has policies in place that can be adapted to meet public expectations in the direction of a more sustainable economy, we ask following questions:

- What main public imaginaries and sustainability issues are associated with the COVID-19?
- Are existing policies transformative enough to help us achieve these sustainability imaginaries?

2. Study Design and Methods

This study builds on a two-step research design which encompasses a qualitative media analysis and a Delphi study from which the post-pandemic imaginaries are derived and discussed.

2.1. Media analysis

In a first step, as news about the pandemic were unfolding, we performed a qualitative content analysis (Mayring, 2014) of gray literature dealing with the COVID-19 pandemic and different sustainability topics between February and May 2020. The aim of this first step was to qualitatively identify some of the emerging policy imaginaries held by various journalists, experts and stakeholders whose opinions were published in different media outlets. For this, a Google alerts notification was set for a combination of different search terms such as “sustainability pandemic”, “green deal pandemic”, “bioeconomy pandemic” and “circular economy pandemic”. The criteria for selecting articles were: (i) articles had to be recently published and freely available online (ii) they had to make a direct reference to sustainability-related issues in the context of the unfolding pandemic (iii) they had to refer to one or more of the three policy initiatives (BES and/or CEAP and/or EGD). At the end of each week during February and May 2020, the first author of this paper screened the list of suggested articles and selected the ones that fit the aforementioned criteria. Simultaneously, the other two authors added relevant articles iteratively when coming across other relevant materials overseen by the Google search algorithm. We identified a number of 85 articles relevant for this analysis. The selected articles are all in English, freely available online and represent a mix of international news media organizations, governmental and private organization’s blogs, opinion pieces and news stories.

For the content analysis, the full texts of the 85 articles selected for the review were equally distributed among the three authors. We sorted the articles according to source, outlet name, outlet classification (e.g., news agency, private company, international organization etc.), name of authors (when available), date published/date accessed, title and type of article (news, opinion piece, blog or other). For the content analysis, each author was responsible for a subset of the reviewed articles. We read through the articles and coded the texts manually inspired by the analytical framework of Wangel (2011) which helped us identify what objects of change (“whats”), measures (“hows”) and change agents (“whos”) were included in the articles. We then constructed subcategories in relation to each of these questions and identified seven themes abductively.

Based on the summaries of the individual findings, the first author merged and labelled identified subcategories and elaborated on the analysis. Afterwards, the co-authors complemented and further developed the analysis to ensure it reflected the analysed materials. Finally, all three authors compiled the

seven themes together. Although the reviewed articles fitted thematically into the seven identified themes and broadly agreed on the objects of change (the “whats”), the different storylines did not necessarily match on the “hows” and the “whos”. This led us to further divide the different themes into two opposed “pathways” that advocated for different means and agents of change. It is the themes, combined with one of these two opposed pathways that we refer to as “imaginary” throughout this paper. To provide insights into how we have interpreted and categorized the material, we provide references to articles that are representative for the identified imaginaries throughout the results sections of this article (table 2 in section 4.1).

2.2. Delphi study

In a second step, with the help of the Delphi method, the results from step one were presented to a panel of international experts. The Delphi method is a well-known structured communication technique that serves as an interactive foresight tool with a panel of experts (Mitroff and Turoff, 2002). Assuming that group judgments are more balanced than individual ones, this technique aims at structuring and discussing the diversity of views of preferred futures. Three main features define the Delphi method: (i) participating experts are anonymous; (ii) the arguments are iterated; and (iii) participants receive feedback from the researchers conducting the study and from fellow participants (Linstone and Turoff, 2011; Mäkelä, 2020).

The type of experts selected are crucial for a Delphi study to adequately engage the broad range of issues from different perspectives (Kuusi, 1999). While participant selection does not aim for representativeness, selection equity and transparency in addition to appropriate knowledge and expertise are paramount, especially when considering possible future opportunities for concepts marred with competing interests (Devaney and Henchion, 2018). For this study, the criteria for selection/inclusion in the expert panel were:

- Selected participants were publicly and unambiguously associated in some way with the BES, CEAP or EGD policies. This could include public statements or other forms of public outreach (e.g., lectures, conference proceedings, statements, press releases, organizational position papers, scientific publications, etc.).
- Furthermore, experts had a job title or job description related to one of the policy programs (e.g., Director of the Chair in Industrial Bioeconomy), membership in BES, CEAP or EGD committees, working groups, or technology clusters.
- Lastly, we prioritized experts working with or researching about policy developments (i.e., public policies at EU or national level or with innovation policies) in the three fields. The selection was considerate of balanced age and gender representation.

An online desktop analysis was conducted to identify experts matching these criteria. Webpages, personal profiles on professional social platforms, conference proceedings, event participants' lists and publicly available CVs were scanned for keywords matching one or more of the aforementioned criteria. An invitation to participate in the study was sent out to more than thirty experts. Out of these, ten experts agreed to participate in the study (table 1). The Delphi study had two rounds. The rounds were executed as web-based surveys with the Webropol survey tool (<https://webropol.com/>). In the first round (conducted in December 2020), panelists were presented with the seven themes identified in the qualitative media analysis step. Each theme was presented as two alternative pathways (see also section 3.1. below). Participants were asked to rank the desirability of each pathway, give examples of tools, incentives and policies that would enable each pathway, as well as indicate which of the three policy packages are best suited to enable the desired pathways.

In the second round (conducted in February 2021), the participants were presented with a list of policies, tools and incentives that the Delphi group of experts had suggested in the first round. They were then asked to prioritize at least three of the most relevant issues and at least three less relevant issues considering their impact and desirability for each of the seven themes. Participants were asked to plot their options on a prioritization matrix based on two weighted criteria: desirability and impact. Based on short summaries in the form of news headlines from the future (year 2031), participants were then asked to indicate their preferred headline, as well as provide their own suggestion for a short headline from the future, i.e., how humanity managed to combat the pandemic and reach greater sustainability with a transformative policy agenda.

Table 1. Panel of experts represented here by their institutions and country of residence

#	Type	Country
1	NGO focusing on climate change	Belgium
2	Public University	Austria
3	European Commission	Italy
4	European Commission	Italy
5	Research Center	Finland
6	Public University	Finland
7	Public University	Italy
8	Research Center/ Think Tank	Germany
9	Public University	Finland
10	Public University	Finland

3. Results

3.1. Themes and pathways identified in the media analysis

Seven main interrelated themes were identified: (1) *finance*; (2) *corporate social responsibility (CSR)*; (3) *food production and consumption*; (4) *resource management*; (5) *waste management*; (6) *energy*; and (7) *cities, transport and infrastructure*. The articles did not expose a single imaginary but rather a mix of imaginaries, underpinned by different economic philosophies and sustainability rationales. To clarify these imaginaries, we have followed the approach described in 1.2. to highlight transitional pathways. These pathways are diametrically opposed and are based on a clear opposition on underlying philosophies of growth vs. de-growth e.g., liberalization vs regulation; efficiency vs. sufficiency; production- vs. conservation- management etc. Following this idea of the need of a systemic coherence between the imaginary/mission/policy tool nexus, we identified explicit calls for action (policies, incentives, strategies, action plants etc.) associated with each pathway. While intermediate positions or different combinations could be identified, the aim of the study is to identify ideals that are clear enough to enable the Delphi study, and to prompt a debate among panel members. In table 2, we have grouped the identified themes into different pathways and adjacent calls for action.

Word count: 7999 (including title, abstract and keywords)

Table 2. Results of the media analysis: 7 interrelated themes, their associated pathways and calls for action

Themes	Pathways	Calls for action (selected)	Sources (Annex 1)
1. Finance	<u>1.a. Liberalization:</u> This pandemic is a unique opportunity for investing in sustainable growth and green finance. Hence, the Green Deal recovery package needs to provide suitable financial incentives for the pandemic recovery.	e.g., more structures and standards to support green finance's growth and appeal, as well as different funding schemes such as public-private partnerships, credit lines, debt monetization, "corona-bonds" or green bonds;	33, 38, 41, 58, 72
	<u>1.b. Regulation:</u> If the pandemic recovery is to be truly sustainable, governments need to take things into their own hands and ensure that funds and financial support reach the right people and institutions. Any economic stimuli need to avoid creating incentives that encourage developments which lock-in future carbon emissions e.g., intensive tourism, additional road building, bigger airports or stimulus for diesel or petrol cars.	e.g., eliminating fossil fuel subsidies, divesting from high carbon emitters, carbon taxes, gradual increase in carbon pricing etc.	7, 14, 20, 26, 31
2. CSR	<u>2.a. Business Growth:</u> The pandemic has shown that sustainability can be a "tool" that helps companies save money, and the pandemic as an opportunity to invest in green practices and achieve greater growth.	e.g., adopt new practices like e-commerce and digitalization, optimizing supply chains and recycling;	4, 23, 30, 31, 36,40, 49, 57
	<u>2.b. Sustainable Business:</u> Regardless of Corona, companies mustn't lose sight of longer-term sustainability targets. Corporations also need to make stringent revisions regarding tax havens and transition from shareholder value to public and environmental value.	e.g., commitments to reduce carbon emissions, revisions regarding tax havens, a transition from shareholder value to public and environmental value, provide relief, protect (precarious) jobs etc.	2, 3, 9, 26, 39, 50, 59
3. Food Production & Consumption	<u>3.a. Efficient production:</u> The pandemic has uncovered the need to further invest in the agricultural sector and make food production more efficient in order to meet a growing population and changing demands during and after the pandemic. The sector needs to undergo green growth, focus on more technological innovation and bio-manufacturing, as well as on doubling agricultural production by 2050.	e.g., investments in innovative new technologies, synthetic biology and bio-manufacturing firms;	43,53,54
	<u>3.b. Ecological production:</u> The pandemic has uncovered some systemic weaknesses in food production and supply. Therefore we need to safeguard biodiversity by increasing the protection of land and sea, restoring degraded ecosystems and establishing the EU as a leader on the international stage both on the protection of biodiversity and on building a sustainable food chain.	e.g., by enhancing organic farming and other biodiversity-friendly farming practices, reduce the use of pesticides, fertilizers, antimicrobials, shorter, local supply chains as well as reach the 25% target of agricultural land under organic farming;	22, 44,51,53,54

Word count: 7999 (including title, abstract and keywords)

4. Resource Management	4.a. Conservation management: The pandemic has shown how closely connected man and nature truly are. We therefore need an increased focus on conservation efforts, protecting land and sea, and restoring damaged ecosystems and rivers, whilst improving the overall health of EU protected habitats and species of European forests.	e.g., upholding Farm to Fork commitments, transforming at least 30% of Europe's lands and seas into effectively managed protected areas and bringing back at least 10 % of agricultural area under high-diversity landscape features;	53, 43, 48, 52
	4.b. Production management: The pandemic offers an opportunity to grow bio-based products such as bio-based packaging, including compostable packaging and biodegradable packaging. For this, an intensified management, focused on production and adding value to existing supply chains is needed.	e.g., large scale investment programs aimed at increasing forest yields, harvesting and added value to supply chains and waste streams;	24,25,28, 43,
5. Waste Management	5.a. Management for efficiency: As a result of the pandemic, dropping oil prices have led to a decrease in the value of plastics, making companies question whether recycling is still an economically viable option. A circular-bioeconomy future in which companies move towards 100% recyclable, reusable or compostable products made possible by innovations such as biodegradable plastics.	e.g., investments in R&D, including the development of new bioplastics and textile fibers, as well as to continue to develop product lines using recycled and biodegradable materials;	20, 43, 52, 24
	5.b. Management for sufficiency: Besides focusing on well-thought-through circularity aspects and waste management, we need to talk about consumer awareness and reducing overall production and consumption. Increased focus on the circularity aspects of waste management, as well on consumer awareness and reducing consumption are needed.	e.g., uphold commitments to reduce waste, focus on quality over quantity, increase consumer awareness;	45,59
6. Energy	6.a. Increased (green) energy: The energy transition will escalate due to the pandemic, fast-forwarding green energy 10 years into the future. Innovation and solutions in bioenergy, solar, wind and water are envisioned to leapfrog older solutions.	e.g., redirecting funds spent on fossil-fuel subsidies towards green infrastructure and the low-carbon economy, maintaining and strengthening EU's effective regulatory tools such as the Emissions Trading Scheme, environment standards and sectoral policies, making these more effective at reducing emissions etc.	5,7, 13, 18, 21,27, 29
	6.b. Reduced consumption: The pandemic has shown the need for an energy future focused on efficiency and reduced consumption. A first crucial step is to divest from fossil-fuels, and transition towards cleaner energy sources. But this mustn't come at the expense of the environment (e.g., by using forest biomass).	e.g., encourage resource-efficient growth, less transportation needs, tourism, retrofitted housing for reduced energy consumption;	38,50
7. Cities, transport & Infrastructure	7.a. Smart cities: The importance of digitalization and smart cities was underlined by the pandemic. City planning during and after the pandemic should therefore stimulate innovation and digitalization. Green, smart, digital cities, characterized by energy efficient infrastructure are needed.	e.g., investment in infrastructure for housing and roads, more investments in infrastructure, improved public transport safety and accessibility, and low emission transport options, such as bicycles, electric vehicles and scooters increased support for green certified buildings etc.	5,58, 83

Word count: 7999 (including title, abstract and keywords)

	<p><u>7.b. Community cities:</u> The pandemic has shown that smart cities must be more than technology. Besides digital infrastructure, physical infrastructure and social infrastructure need equal consideration. Local, sustainable, community-oriented cities co-designed through participatory approaches to planning and management are called for.</p>	<p>e.g., decreasing the density of cities by supporting community-based economies, slowing down transportation, reducing traffic on streets;</p>	<p>76, 84, 85</p>
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3.2. Scoping for transformative policies

The seven themes presented above, and the suggested pathways for accomplishing the imaginaries expressed therein were presented to the panel of ten international experts. The results of the first round of the Delphi study are presented in section 4.2.1 and those of the second round in section 4.2.2.

3.2.1 Preferred pathways and policy packages

Three main key points arise from the first Delphi round:

- i. From the two pathways presented for each theme, respondents clearly preferred the issues in the “b category”. These pathways were generally geared towards sufficiency rather than efficiency, and de-growth rather than green growth i.e., ecological production, conservation management, sufficiency management etc.
- ii. None of the three policy initiatives (EGD, BES, CEAP) were considered to be singlehandedly able to tackle the urgent sustainability challenges posed by the pandemic. Most respondents therefore opted for a mix of different tools/incentives/ and policies for each theme.
- iii. Nevertheless, faced with making a difficult choice, respondents opted for the EGD, deeming it suitable to address challenges described by all themes and pathways. The CEAP came second, considered suitable to tackle challenges described in 5 out of 7 themes, especially in the case of theme 5- waste management, where 86% of respondents considered the CEAP to be suitable. In contrast, the BES was considered to be the least equipped to deal with the presented challenges, being selected in only 2 out of 7 cases. The BES was the preferred choice in the case of theme 3- food production and consumption, and theme 4- resource management where 43% of respondents considered it on par with the EGD to help manage resources sustainably.

Respondents justified their preference for the EGD by arguing that “*it is the most wide-ranging*” and encompassing of the three packages presented, backed by generous financial incentives, and has the potential to streamline elements from the other two initiatives into one comprehensive policy mechanism. As one expert stated:

“I attribute most integrated thinking to the Green Deal. But in many areas, a combination of the three will be important”.

However, some experts pointed out that in its current form, the EGD is based on outdated concepts about human-environment interactions, indefinite economic growth and narrow sustainability interpretations. This was especially the case for theme 3- food production and consumption, and theme 7- cities, transport and infrastructure. For example, one expert retorted:

“However, both the Green Deal and the sustainable finance policy need to be more socially sensitive / more inclusive to respond to the vulnerabilities exposed by the pandemic, and that are important to consider in a successful transformation.

3.2.2 Policy options for a (new) EGD

After summarizing the results from the first round, in the second round of the Delphi study participants were asked to review and rank previously suggested policy options in terms of desirability and impact, and to suggest a EGD imaginary that would be more transformative than the current package put forth by the European Commission.

Based on the panelists’ answers, policy integration and coordination, within and between the three different policy packages was suggested. Table 3 below summarizes the top three policies for each theme suggested by experts in the first round, and then reviewed and plotted according to impact and desirability on the prioritization matrix in the second Delphi round. From the policy suggestions made, some are more restrictive, whereas others more recompensing. For example, experts called for allocating public funds for ecosystem restoration while also calling for implementing strong conditionality for the use of public funding.

Table 3 Results of the second Delphi round where participants ranked previously suggested policy options according to impact and desirability (N=7)

Theme	Policy	Impact (Average)	Desirability (Average)
1b Financial regulation	Initiate steps for setting ambitious binding climate and energy targets	73	86
	Set strong conditionality for the use of public funding, with a clear long-term perspective	59	73
	Strengthen Emissions Trading Scheme	56	80
2b Sustainable CSR	Setting clear fossil-fuel phase out dates	74	83
	Implement regulations for redistribution of wealth	62	86
	EU regulation on fair and sustainable global and local value chains	63	70
3b Ecological food production	Reform of the CAP	67	78
	Implement strategies to increase public awareness on the impact of certain diets	62	90
	Support the conversion of lots into small gardens, where possible	36	52
4a Conservation management	Set clear nature restoration targets	71	83
	Allocate public funding to support ecosystem restoration	63	83
	Promote conservation or restorative agriculture	67	78
	Design and implement a Circular Economy legislation	60	73
	Integrate circular economy principles in all production legislation	51	71

5b. Waste management and sufficiency	Support measures to enable alternatives to existing consumption patterns	65	82
6b Reduced energy consumption	Initiate progressive carbon pricing	67	73
	Enable public support for energy conservation and energy efficiency measures	63	71
	Implement regulation for energy efficiency and energy balance over the lifecycle in the construction sector and for the use of buildings	60	73
7b Cities and communities	Encourage and enable community living	57	75
	Institutionalize the care and share economy	64	74
	Normalize/ enable volunteering/being part of the community	53	66

Since panelists had indicated in the previous Delphi round that – although promising– the EGD needs to be re-imagined, they were asked to provide a short headline from the year 2031. Similar to the policy options presented above, the resulting EGD headlines can be grouped into two distinct imaginaries: (i) a more pragmatic, policy-oriented vision building on clear policy mechanisms, business models and policy incentives; (ii) and a more radical vision for human-environment interaction.

- (i) The first imaginary presents the EU as “*a model for the sustainable wellbeing of the populations*”. It sees Europeans coming closer to their environment by developing new businesses accounting for ecosystem services, and financing the preservation of these ecosystems. This wellbeing is to be achieved through different means e.g., “*responsible consumption*” and policy mechanisms such as “*a clear monitoring of the environmental, economic and social impacts*” or “*a combination of ‘greening’ financial markets and conditioning public finance*”, “*combining elements of circular economy with sufficiency and sharing economy*”, as well as “*heavy investment in international cooperation in sustainability transformations of energy, transport, food systems*”.
- (ii) The second imaginary envisions humans to “*have finally found their purpose and meaning in life*”. Key to this is rethinking human-environmental interactions, i.e. “*the relation to other forms of nature and other animals*”. Instead of pursuing economic and material growth, “*humans now strive for internal peace and internal growth*”. This lifestyle is to be achieved through “*self-relying community-based economies*” and local production of food, clothes and other products. Policy suggestions in this imaginary focus on reduction and sufficiency e.g., “*shut down of inner EU flight traffic*”, “*reduction of private car ownership*”, “*timelessness design of household appliances*”, “*predominantly local and sustainable food systems*” and an overall “*slow down [of] our hectic lifestyle, improved well-being*” and “*a focus on communal living rather than individual competition*”.

4. Discussion

4.1. Main public imaginaries and sustainability issues associated with COVID-19

Undeniably, the COVID-19 pandemic has reinvigorated discussions about sustainability and human-environment interaction. Just as extreme weather events, economic fluctuations, or political controversies continue to influence attention cycles to climate change (Brossard et al., 2009; McComas and Shanahan, 2016), so too has this pandemic brought to the fore different discussions and imaginaries about the relationship between the economy, science and sustainability. And just as sustainable development and climate change has remained on the news agenda for a long time providing possibilities for increased societal awareness and opinion formation (Doulton and Brown, 2009; Holt and Barkemeyer, 2012; Schmidt et al., 2013), so too this pandemic and its associated challenges may potentially result in increased awareness of sustainability issues. Examples of such post-COVID sustainability imaginaries, came when residents of Venice started noticing improvements in the water quality of the city's famous canals due to reduced boat traffic, thus triggering a discussion about unsustainable overtourism (Guy and Di Donato, 2020), or when decreases in car traffic and better air quality started being reported from around the world (Venter et al., 2020), incentivizing municipalities to reallocate public space for pedestrians and cyclists and prompted discussions about reimagining cities (Mohn, 2020).

Since the beginning of the crisis at the beginning of 2020, thousands of similar online articles continue to address this issue. This media analysis does not claim to be exhaustive since we selected articles qualitatively and only considered articles written in English. Second, our panel of Delphi experts was mainly composed of researchers coming from a few European countries. Thirdly, not all experts could participate in the second round of the study. Our analysis nevertheless raises an interesting discussion about the different emerging imaginaries and expectations for a sustainable post-pandemic society. So far, different actors are responsible for agenda setting. Researchers (most prominently healthcare professionals), governmental organizations, the business sector and representatives of NGO have used different media outlets to voice their opinions about the pandemic. Although it was beyond the scope of this study to attribute opinions and storylines to each of these actor categories, future research could further explore i.e., how different actor groups use pandemic-related storylines to legitimate their own interpretation of sustainability. As national contexts may vary, media outlets reporting in different languages may provide additional interesting insights (see e.g., Metcalfe et al., 2020).

The imaginaries we identified here represent a mix of diverse political and economic ideologies. These can roughly be divided into two groups of imaginaries in response to the pandemic, sustainability and climate change. The first imaginary can be described as “business-as-usual” (BAU). This interpretation of the responses to the crisis takes the form of climate change and environmental degradation. The response

is to pursue a policy agenda that is part of the imaginary of organizing virtues of markets through the pursuit of self-interest. Therefore, according to this interpretation, the COVID-19 crisis is only an external shock requiring a temporary intervention, both to meet health needs and to meet the needs of the companies impacted by the crisis. As an external shock, there is, therefore, no challenge to the status quo and systemic actions towards change remain mainly rhetorical. The “building back better” strategy is an example of BAU, which so far has remained an empty theoretical buzz phrase (Béné et al., 2021). Examples of this neoliberal imaginary can also be found in each of the seven themes identified here but are most prevalent in the finance and business sectors (i.e., CSR) where the pandemic is reframed as a business opportunity for companies to strengthen their sustainability commitments and ultimately grow their business through minimal technocratic and technological fixes (e.g., e-commerce or optimizing supply chains).

The second imaginary is rooted in the contestation of conflating development and economic growth (Sekulova et al., 2013). Thus, the imaginary of degrowth has been expressed as alternative transition paths. Such alternative paths could be identified for most of the themes in Table 2 (section 3.1) but are most prominent in themes such as food production and consumption, or waste- and resource- management (see also Cohen, 2020). The components for this imaginary are (1) the recognition of planetary limits and the impossible division between growth and increased use of natural resources (Giampietro, 2019; Sorman and Giampietro, 2013; Wiedenhofer et al., 2020), (2) the analysis of the development of contemporary societies as a metabolic breakdown (Bellamy-Foster, 2000; Cahen-Fourot, 2020), (3) the recognition of the insertion of social systems (including the economic sphere) into natural systems with which the exchange of material flows must be balanced (Daly, 1997, 1991). From this perspective, the narrative of the crisis is that of a pandemic facilitated by international trade, guided by the maximization of profit at each stage of the global value chain. Therefore, the perspective opened up here orients the transition pathway towards sufficiency, which must respond to basic needs, to localized production and to policies guided by strong sustainability (Befort, 2020).

4.2. Can existing policies deliver on public sustainability imaginaries?

Although the analyzed publications were more explicit about the objects of change (the “whats”), the means of change (“hows”) and the change agents (“whos”) were less explicitly stated. The publications that did link to one or more of the three policy initiatives (BES, CEAP, EGD) referred to them in a more general way, rather than going into details about specific policy means. Out of the seven themes identified in our media analysis (see section 3.1), the three selected policy initiatives are addressing few individual themes, but not all simultaneously. For example, the CEAP was often mentioned as a means to address waste management; or the BES was considered most suitable to address the resource management theme. An important difference here is that publications referring to the CEAP envisioned it a means to reduce

consumption and achieve sufficiency, whereas those pleading for BES imagined more (business) growth, more bio-based products and intensified natural resource management. But whether or not these policies will indeed be able to address the multitude of sustainability challenges identified in this analysis remains unclear. It is possible that the mass media coverage of the pandemic-sustainability nexus may create a situation in which it is conducive for governments to act, or at least pressure them to initiate a policy response (Newell, 2000). This is assumed to be the case with the EGD which emerged dearth of detail in December 2019 and has since then been filled with content and reframed as Europe's "lifeline" out of the pandemic (Dupont et al., 2020; EC, 2021). The threat of another economic downturn, legitimized the European Commission to push its neoliberal agenda more vigorously and continue "doubling down on our growth strategy by investing in the European Green Deal"(von der Leyen, 2020). Not surprisingly, the EGD was considered to be the most wide-ranging means to tackle almost all issues described by the seven themes we identified, both by the media articles and by Delphi experts.

Despite early indications that the COVID-19 crisis may be considered a critical juncture leading to a new path for EU climate (and perhaps sustainability) policy (Dupont et al., 2020), the EGD in its current form seems to continue to perpetuate the BAU imaginary discussed above. The function of the Delphi study was therefore to facilitate a strategic conversation on the dynamics of change between experts, allowing them to react to and evaluate the material from the media analysis and to elaborate on and explore uncertainty, desirability and the nature of change. In this respect, rather than predicting the future post-pandemic setting, this exercise offered insights into the different imaginaries and potentially new emerging models for change. But here too, the affinity for the different pathways was not as clear cut. Experts opted for a mix of both sufficiency-oriented and more libertarian policy options. The prevailing consensus was however that in its current form, the EGD's growth-oriented philosophy may not necessarily be in line with public imaginaries of a sustainable post-pandemic recovery. A more transformative approach to policymaking is therefore warranted.

The literature on transformative policies places particular emphasis on the need to define coherent policies that should go beyond economic and industrial policy (Diercks et al., 2019). To this end, these policies must manage the difficult intertwining of objectives, means and tools, using for example strategies of co-construction of visions of future communities (Kastrinos and Weber, 2020; Managi et al., 2021; Van Oers et al., 2018). Indeed, shocks at higher levels of social organization, such as the pandemic, may open up opportunities for transformation of social-ecological systems into new pathways of development (Herrfahrdt-Pähle et al., 2020). However, opportunities need to be carefully navigated otherwise transformations could stall. Based on the experts' suggestions of how the three initiatives could be transformed (see table 3), a "managed transition" underpinned by elements of a "managed degrowth" imaginary emerges (see Wells et al., 2020). Congruent with Wells et al., (2020) assertions, the first

imaginary suggests a strong cooperation between the existing regime constituents around a form of global “new green deal.” It implies the establishment of circular economic systems that in turn requires reduced consumption of fossil fuels and other natural resources. But it does not necessarily embrace “green growth”. Instead, it envisions innovation in alternatives to conventional economic growth that would ultimately lead to a decline in ecological burdens (Kallis, 2011; Mastini et al., 2021; Wells et al., 2020). The imaginary identified here also calls for a radical rebalancing of production and consumption, green taxes, community work and an emphasis on re-use and recycling (Wells et al., 2020).

5. Conclusion

The main objective of this study was to understand what emerging public imaginaries of a sustainable post COVID-19 recovery are communicated by the mass media, and critically discuss whether the three policy initiatives (BES, CEAP and EGD) are well equipped to fulfill these imaginaries. Results show that several sustainability themes in relation to the pandemic have been set on the agenda. There seems to be more consensus on the objects of change (finance, consumption, production, waste etc.) than on the means of change or on the change agents entrusted with tackling these issues. Henceforth, different pathways materialized. After discussing these findings with a group of ten international experts, following key findings emerged:

- (i) The imaginary of green growth still prevails in the three analyzed policy packages, particularly in the EGD despite the COVID-19 shock.
- (ii) Two groups of imaginaries in response to the pandemic, sustainability and climate change could be identified: “business as usual” and “moderated degrowth”. After contrasting these findings with the policy options suggested by the Delphi experts, a third imaginary - “managed transition”- could be confirmed. The policy options suggested here are rooted in both of these latter imaginaries.
- (iii) Shocks at higher levels of social organization due to the pandemic, may open up opportunities for transformation of social-ecological systems towards alternative pathways of development. These opportunities need to be carefully steered otherwise transformations could remain stuck at the BAS.

As the pandemic continues to surge ahead, taking its toll on healthcare and the economy, the sustainability discussion must not take a backseat. In this context, the media continues to have an important role in agenda setting and transmitting information (Holt and Barkemeyer, 2012). By further exploring how the media reports on sustainability challenges and opportunities posed by the pandemic, researchers can continue to closely follow how sustainability imaginaries unfold and how these in turn influence public discourse and

policymaking. A critical question remains about whether the COVID-19 crisis can be considered a critical juncture leading to a new path for the EGD and more transformational policymaking (Dupont et al., 2020). For this transformation to happen however, alternative imaginaries need to be considered that are more conducive towards a degrowth blueprint which has been proven to be a feasible alternative (D'Alessandro et al., 2020; Mastini et al., 2021).

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