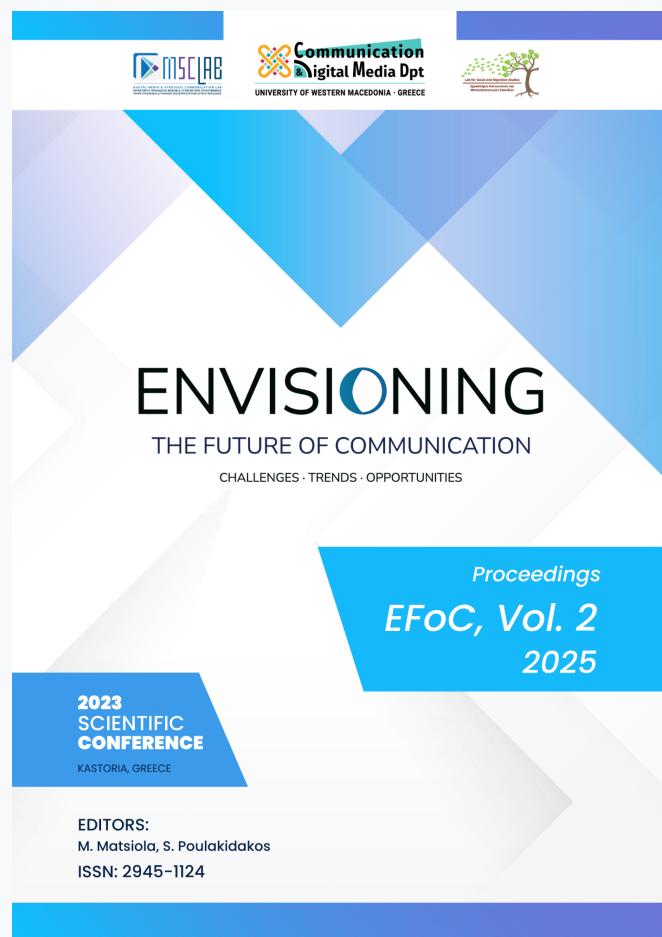


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Thomai Baltzi, Nikolaos Vryzas

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# Narratives of sustainability in public political discourse

Thomai Baltzi, Nikolaos Vryzas\*

## Abstract

Currently, the concept of sustainable development occupies a prominent role in local, national and international debates about the planning, decision-making and policy practices that are supposed to guide current and future societies worldwide (Jacobsson, 2019). Its heavy use, even by institutions such as the European Union, shows that it is now a powerful tool for governance (Luke, 2005). However, these few applied practices of sustainable development reveal the weakness that the concept itself and its use carries (Linnér and Selin 2013, 2005). This research aims to map the frames of sustainable development as it is attributed in public political discourse both during an election period and during the governmental period. Specifically, the study focuses on the frequency and the way in which Greek parliamentary candidates through their personal Twitter accounts, as well as through their political group pages, semantically frame the sustainable development narrative and hence how it is put into public discourse. The rationale of the research is part of the scholarly debate on the social semiotic construction of a hegemonic narrative (Andrée, 2011) through social media. The classification will be based on the method of Entman's (1993) empirically grounded theory "Framing Theory", which analyses the semiological construction of certain aspects of a perceived reality through which a particular definition of the problem, causal interpretations, moral evaluations and/or recommendations for managing an issue are presented. The analysis reveals an interesting paradox, indicating contradictory understandings of the semantic and narrative performance of sustainable development.

**Keywords:** sustainability, ideology, neoliberalism, media, twitter analysis.

## Introduction

Sustainable development has been at the core of political discussions in recent decades and has increasingly become integrated into the agendas of policymakers and institutional bodies, as well as corporate strategies (Biermann et al. 2012). A consequence of this dialectic is the growing environmental risks such as climate change, biodiversity loss, and the global nitrogen cycle (Benson et.al 2014, Sala et al. 2020). Indeed, sustainable development, stemming from the urgent need to address these issues, has been the primary environmental rhetoric in political circles.

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\* Thomai Baltzi, PhD Candidate, Journalism and Mass Communications, Aristotle University of Thessaloniki.

Nikolaos Vryzas, Postdoctoral Researcher, Multidisciplinary Media & Mediated Communication Research Group (M3C), Aristotle University of Thessaloniki.

However, despite being a global phenomenon of rhetorical dialectic, it remains more ambiguous than ever, resulting in it not being well understood by the general public and hence not gaining much traction in practice (Fuchs 2017).

According to Bauman (2005), the ambiguity of the term sustainability arises from contemporary political debates, following the redefinition it underwent during the creation of the Brundtland Report (Vallance et.al 2011), which engendered a general and indefinite dialectic of the term aimed at evolving within each ideological approach and national policy context (Nurmela et al. 2002). Therefore, sustainable development practices are adopted by countries and governments (Rosati and Faria, 2019), which are called upon to adopt the sustainable goals based on the national priorities they have identified (Antwi-Agyei et al. 2018, Allen et al. 2018).

Therefore, public awareness on sustainable development issues is shaped and constructed by political discourse and, by extension, by the Mass Media, which serve as the communication channel between political decisions and civil society (Grover 2021, Vakeel and Panigrahi 2018, Scheyvens et al. 2016, Carroll 2016). Until now, the scientific community has not definitively defined the framing of sustainable development, which is constructed by political discourse, thus revealing gaps in understanding regarding the mechanisms adopted by governments in sustainability rhetoric (Muff et al. 2020, Winkler and Williams 2017, Fukuda-Parr 2016, 2019, 2020).

This study aims to elucidate and compare the dialectic of sustainable development as constructed by the Greek political and media scene and communicated to the general public through social networks. Specifically, after clarifying the terms and conditions from international and domestic literature, an exploratory study follows on the Twitter accounts of Greek elected officials, the media, and the general public during the 2022-2023 pre-election period. The framing analysis model according to the principles outlined by Entman (1993) was selected, which is conducted through topic modeling."The following subsection introduces and clarifies the different interpretations of sustainable development through relevant studies, and then delves into the semantics of the term. This is followed by a section presenting the presentation of sustainability in the neoliberal system and how it is constructed through specific ideologies as a tool of governance. The paper then continues with the specific case study, methods and materials used. Finally, a final discussion is provided where the main results are highlighted, as well as the conclusions drawn.

## **The dialectic of sustainable development**

In recent years, the concept of sustainable development has played a central role in public decision-making and has become a primary goal of governance policy (Hugé et al. 2013, 2016). The central narrative guiding it, through which sustainability will bring about development that meets the

needs of the present while ensuring the coverage of future generations' needs (WCED 1987), constitutes a response to the environmental impacts threatening the integrity of the planet, including present and future human livelihoods and well-being across multiple dimensions (Millennium Ecosystem Assessment, MEA 2005).

Already, as of September 2015, a new Sustainable Development Agenda was adopted by 193 members (UN 2017), reinforcing three main pillars or the triple bottom line of sustainable development (Pal & Jenkins 2014), which included promoting economic development aimed at prosperity, preserving the environment, and promoting social justice. However, according to several researchers, the concept of sustainability, as it has been shaped by the Brundtland report and thereafter, has led to oversimplification, thereby enveloping it in a veil of neutrality (Wilson & Swyngedouw 2014, Raco 2014, Raco, Imrie & Lin 2012).

According to Kagawa (2007), the diverse ideological representations emerging in the concept of sustainable development contribute to making it an argument of 'general purpose' or 'catch-all'. Moreover, the rhetoric of flexibility and the positive tone surrounding it (Kagawa 2007), while simultaneously the assessment of policies for sustainable development cannot be easily observed (Clarke and Islam 2006), leads sustainable development into the realm of symbolic politics. According to Wilson and Swyngedouw (2014), who conducted an analysis regarding the term's weakness, the Brundtland report and its 17 goals create an ideologically neutral character of sustainability through the ambiguity of the concept, resulting in a lack of understanding of sustainable development policies and ultimately leading to the failure of the concept. The paradox, however, is that while the concept is presented as neutral across various ideologies, at the same time, it is malleable enough to be applied to any ideology (Lynch & Khan 2020).

Therefore, the continuous transformative construction of sustainability rhetoric often encompasses ambiguous, ambivalent, and incoherent interpretations (Doulton and Brown 2009). Specifically, as Dryzek (2005) states, the interpretive frameworks underlying a concept/dialectic depend on the group of people constructing them. To date, several scholars have delved into the analysis of sustainable development frameworks, particularly in media representation, especially in traditional and digital media (Koteyko 2012, p. 31, Diprose 2018, Baltzi et al. 2022). Specifically, Lewis (2000), recognizing the significance of constructing sustainable development, conducted a study in the United States, which showed that American media do not host conflicting sustainability frameworks but consistently present three specific developmental frameworks. He demonstrated that sustainable development is framed to a greater extent in economic, technological, and industrial terms. Furthermore, in a related study conducted in 2012 on British newspapers, a significant overlap was found between climate change, business activity, and carbon accounting, while there was a complete absence of the pillar of social justice (Koteyko 2012, p. 31, Diprose 2018). Subsequently, Atanasova (2019) conducted a framing analysis study on a self-funded and

independent news medium, the newspaper 'Positive News.' Her study consistently identified the use of three frameworks: economic development, technology, and to a much lesser extent, the degrowth framework. In a relevant context, Baltzi, Skamnakis, and Kostarella argued in their 2022 research on the Greek digital media that the dialectic of sustainable development is primarily framed in terms of economic development.

Moreover, the studies under consideration consistently demonstrate that economic development, technological solutions, and entrepreneurial activity dominate the frameworks of sustainable development, excluding the other two pillars, environmental conservation, and social justice (Audet, 2014; Agyeman 2007; Bailey & Wilson 2009; Escobar 1995). According to Davies (2014) and Lewis et al. (2008), the framing of sustainable development is shaped by specific worldviews and ideological approaches, which in many cases align with the dominant political discourse. This occurs because the dialectic of sustainable development offers significant benefits to policymakers as they are portrayed as active politicians acting on a global phenomenon that concerns everyone (Newig 2007; Leiserowitz et al. 2005).

The analysis of sustainable development is thus a multifaceted and multidimensional issue, which is in a continuous transformative process as different discourses coexist under the umbrella of the post-discourse of the concept. To date, the scientific community has mainly focused on analyzing the frameworks of sustainable development in the mass media and how they systematically construct the concept. The present study aims to identify and compare the rhetoric of sustainable development in political and media discourse during an election period, as noted by Froio et al. (2016), which can be a reasonable political strategy, especially during election periods."

## **Methodology and tools**

### *Research Objective*

The primary objective of this study is to examine how the concept of sustainable development is framed and defined within both intra-political discourse and media rhetoric on the social media platform Twitter. The selection of this case study was based on a comprehensive literature review, which identified a gap in research focusing on how sustainable development is framed in political discourse. Therefore, this research aims to provide a broader contribution to the academic community. Twitter was chosen due to its role as a platform for political consultation (Grover et al. 2019), utilized by political leaders, public institutions, news agencies, engaged citizens, and others. Furthermore, Twitter has become an official communication channel between decision-makers and the general public (Aswani et al. 2018; 2019). Following an exhaustive review of both domestic and international studies to ensure a comprehensive understanding of the topic and methodological approaches, this research seeks to address the following specific research inquiries:

What frames are employed in constructing the concept of sustainable development within intra-political discourse?

What frames are utilized in constructing the concept of sustainable development within media discourse?

Which frames prevail in the discourse of the public?

### *Research Design*

The selected research period spans from June 1, 2022, to June 22, 2023, coinciding with a national pre-election period in Greece. This period was chosen to facilitate a comprehensive analysis and provide insights into the research questions posed. Specifically, the national pre-election period serves as a case study to examine the narrative frameworks surrounding sustainable development in political discourse, media coverage, and public perception. By focusing on this pre-election timeframe, it becomes feasible to assess the extent to which political parties incorporate sustainable development practices into their agendas, the alignment between political agendas and media coverage, and the prevalent interpretative frameworks of sustainability within the broader public.

The analysis in this research followed three primary stages. Initially, Greek tweets were identified and extracted based on seven predetermined keywords identified on the Twitter social network: "circular economy," "environment," "sustainable development," "sustainable," "climate change," "climate crisis," "green economy," and "renewable energy sources." Subsequently, a sample of 164,671 tweets was collected over the course of one year, each containing at least one of these keywords. Following a rigorous assessment of data quality to ensure suitability for the study, 169,815 tweets (100% of the sample) were deemed valid and included in the analysis.

The second stage involved an initial categorization of the collected data from the first stage. Specifically, utilizing the digital tool VouliWatch, an independent, non-profit organization for open governance, official Twitter usernames of Greek MPs and political parties were gathered and subsequently classified in the database. The identified parties and their respective MPs were: Nea Demokratia (ND), SYRIZA, PASOK, KKE, Niki, Elliniki Lysi, and Pleysi Eleutherias. Consequently, the majority of tweets were found within the party framework of ND, totaling 256 tweets. SYRIZA encompassed 95 tweets overall, PASOK gathered 239 tweets, and Elliniki Lysi included 49 tweets. No tweets were identified during this period for the SPARTIATES party formation, whereas only 1 tweet each was found for the KKE and Niki parties. Finally, 3 tweets were identified within the Pleysi Eleutherias party formation. Following this classification, Media Outlets were categorized next, comprising 4,403 tweets, and the public with a total of 164,671 tweets.

Regarding the categorization of media outlets, the Greek Media Registry was taken into consideration, and in a second phase, specific suffixes in their usernames and descriptions, including “info,” “jour,” “press,” “news,” “newspaper,” “time,” and “eidiseis,” were used to classify accounts under the category “Greek Media.” Subsequently, accounts with the suffix “gr” were identified and categorized following careful and in-depth observation of their content. Accounts that described and self-identified as media outlets were classified under the “Greek Media” category. The remaining accounts were removed from the sample, as they were considered to potentially represent companies or institutions with specific purposes.

The general public was categorized based on the two aforementioned classifications, along with an analysis of the accounts. Interaction levels and follower counts played a significant role in the selection of users as part of the public. Bots were not included as a separate category in the sample, as the purpose of this research is to identify the most frequent narratives surrounding the concept of sustainable development within these classifications, considering a holistic approach to the sample. In all three categorization stages, the same keywords were used to make it possible to trace the flow of information from politicians to media and from media to the public.

As a result, three final categories were established: Greek MPs, Media Outlets, and the general public. At this stage, potential shortcomings were identified. Specifically, the categorization aimed to extract comprehensive results for the research questions formulated at the initial stage. Therefore, during the result classification, possible bots, fake accounts, and Media Outlets were not identified based on their reliability. Additionally, no false news, misinformation, or propaganda were differentiated from the analyzed tweets. This selection was made to capture an overall picture of the first two groups (MPs, Media Outlets) and how this holistically influences the third group (general public).

The third stage constitutes the data analysis phase. Frame analysis through topic modeling was chosen as the analytical method. Considering Entamn's (1993: 52) theory of framing, which posits that "framing is the selection of certain aspects of perceived reality and their presentation in a communicative text, through which a specific definition of the problem, a causal interpretation, a moral evaluation, and/or a recommendation for treatment of the described object are promoted," the results of LDA, which model the texts, can be interpreted as traces of different ways of discussing a topic and thus as frames. In this study, patterns of co-occurring words related to sustainable development were sought, representing patterns of usage of certain words surrounding the dialectic and rhetoric of sustainable development (Evans 2014; DiMaggio et al. 2013). Such patterns of word usage can reasonably be interpreted as an approach to framing patterns.

### *Data Analysis*

For the data analysis stage, we have introduced the use of topic modelling, a popular Natural Language Processing technique that allows quantitative analysis of big corpora in an unsupervised way (Jacobi et al., 2028; Vrysis et al., 2021; Curiskis et al., 2020). Topic modelling aims at dividing the texts in a corpus into discrete clusters, based on some criterion of similarity. Each cluster defines a topic that has been discovered from the unstructured corpus and is described by a set of words. In the current approach, the similarity criterion is based on the extraction of the Term Frequency-Inverse Document Frequency (TF-IDF) features which is a metric of the importance of certain keywords. It is derived from the synthesis of two separate metrics, Term Frequency (TF), and Inverse Document Frequency (IDF), as implied by its name (Curiskis et al., 2020). TF expresses how often a term appears in a document, while IDF the importance of the information carried by the term. Empirically, TF-IDF is higher when a term appears often in a document, but has a smaller frequency in the collection of documents. Keywords that are common in the whole corpus are not considered important to describe a specific cluster (topic). For the clustering process, a Non-negative Matrix Factorization (NMF) model is trained. The model needs the number of clusters as input so that it performs the segmentation of the whole corpus of text in a specific number of topics. For this reason, in this case, experimentation with different predefined numbers of topics is required.

For handling the data and performing initial data cleaning, stop-word removal, etc, the Spacy library was used in Python programming language (Honnibal & Montani 2017). Additional stop words referring to artifacts coming from the Twitter data format were identified and added to the stop word list using empirical exploratory data analysis. For the implementation of the TF-IDF feature extraction and NMF model algorithms, the Python Scikit-learn library was used (Pedregosa et al., 2011). For the configuration of the TF-IDF Vectorizer, we have selected a maximum of 1000 features for vector creation. We experimented with simple words, bigrams, and trigrams to find the most intuitive results. Concerning the number of words defining a topic, we experimented from three to ten words, and we finalized it to the optimum of seven words, which achieved a better understanding of topic separation and characterization. We also experimented with different numbers of discrete topics, finalizing our design to five topics.

### *Frame Analysis of Sustainable Development*

Following the implementation of topic modeling, a systematic approach of inductive analysis was applied in the present research (VanBoxtel et.al 2023). Specifically, from the multitude of lexical sets identified, only those that fulfilled any of the four functions of a frame were selected. Each functional characteristic is presented through a line, while an additional line consolidates the sources referenced in the article, to specifically address functional characteristics of a frame. These sources may illuminate the definition of the problem, the cause, the moral evaluation, and/or the

solution. The lexical sets are continuously compared to identify similarities in propositions regarding the definition of the problem, the causes, the moral evaluations, and the solutions. The final product of this inductive frame analysis is a qualitative description of the frames (see van Gorp & van der Goot, 2012).

This qualitative description of the frames serves as a basis for understanding how sustainable development is conceptualized within different contexts. Each frame is analyzed in terms of its components:

**Definition of the Problem:** How the issue of sustainable development is defined within the lexical sets. This involves identifying the core elements that constitute the perceived problem.

**Cause:** Identifying the underlying causes or factors that contribute to the problem. This involves examining the language used to describe causation and responsibility.

**Moral Evaluation:** Assessing the moral judgments and ethical considerations related to sustainable development. This includes the values and norms that are highlighted in the discourse.

**Solution:** Proposing potential solutions or actions that are suggested to address the problem. This involves analyzing the proposed strategies and their feasibility.

The inductive approach allows for the emergence of patterns and themes that might not be apparent through a purely deductive method. By continuously comparing lexical sets and their functions, the analysis provides a nuanced understanding of the different frames of sustainable development. VanBoxtel et al. (2023) utilized this method to systematically categorize and interpret the discourse on sustainable development. The qualitative description of the frames offers insights into the diverse perspectives and approaches towards sustainable development, reflecting the complexity and multifaceted nature of the concept.

## Results

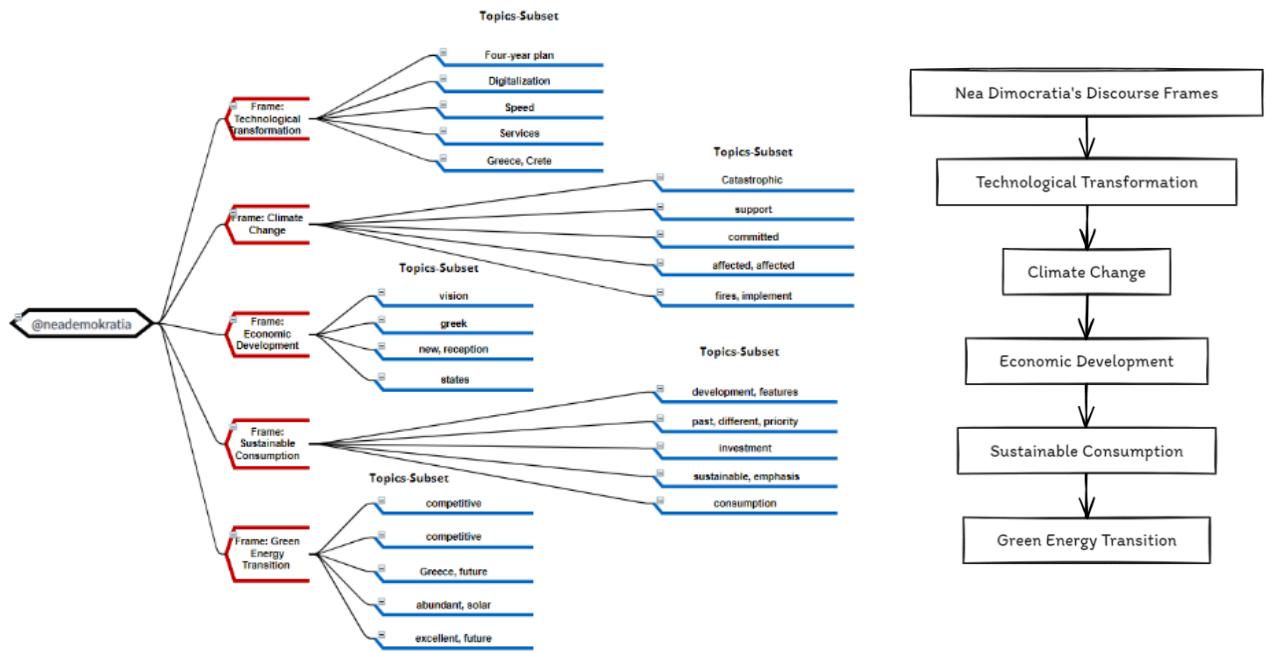
Commencing the analysis with the sets of tweets identified over the course of one year, only 169,815 references within the keywords framework of sustainable development were tallied (see Table 1). Specifically, political formations amassed merely 643 tweets in their public discourse concerning sustainable development and the frameworks surrounding it, while the Media collected a total of 4,403 tweets, and the public gathered 164,671.

**Table 1:** Total tweets of Political formations, Media and General Public

Tweets political formations	Total tweets
Nea Dimokratia	256 tweets

SYRIZA	95 tweets
PASOK	239 tweets
ELLINIKI LYSI	49 tweets
KKE	1 tweet
NIKI	1 tweet
PLEYSI ELEYTHERIAS	3 tweets
SPARTIATES	0 tweet
<b>Total political formations</b>	<b>643 tweets</b>
<b>Total Tweets of Media</b>	<b>4.403 tweets</b>
<b>Total Tweets of General public</b>	<b>164.671</b>

Following the analysis conducted on a per-category basis, Nea Dimokratia consistently presented 5 Frames for the construction of its discourse on sustainable development during the pre-election period. The first frame entails technological transformation, referring to the country's digital transition over a 4-year plan through various services to be provided to the people. This frame is prioritized and functions as a solution to the various challenges hindering sustainable development practices. Subsequently, the second frame in sequence is climate change, which appears with lexical sets such as "destruction, support, committed, affected, fires, implement." Therefore, the climate change frame is identified when the specific political formation aims to describe or inform about a national environmental disaster. The next frame is that of economic development, describing economic transformation. The fourth frame is that of sustainable consumption, focusing on new developmental terms encompassing green consumption models, green entrepreneurship, and individual responsibility in adopting sustainable practices. Lastly, the frame of green energy transition is positioned with terms like "competitive, Greece, future, solar, abundant, excellent."



**Figure 1:** @neadimokratia frame analysis through topic modelling

In the political formation of SYRIZA, the first identified frame in sequence was that of economic development. Specifically, the following lexical set, which includes "mandatory, regulation, bypass, fund, out of court, obligation, proposes, sustainable," demonstrates that SYRIZA constructs the concept of sustainable development both semantically and semiotically in economic terms. This is further evidenced in the second frame in sequence, that of Green Development, where the following Topics-Subset were identified: "sustainable, development, fair, green, step, reconstruct, 1st productive, model, development." The next frame identified is that of developmental transformation, with lexical sets including "picket, wealth, deep, redistribution, change, serious." The fourth frame is the progressive Government, with lexical sets such as "government, call, progressive, SYRIZA, strong, cooperation, mandate, popular." And the last frame is that of Democracy.

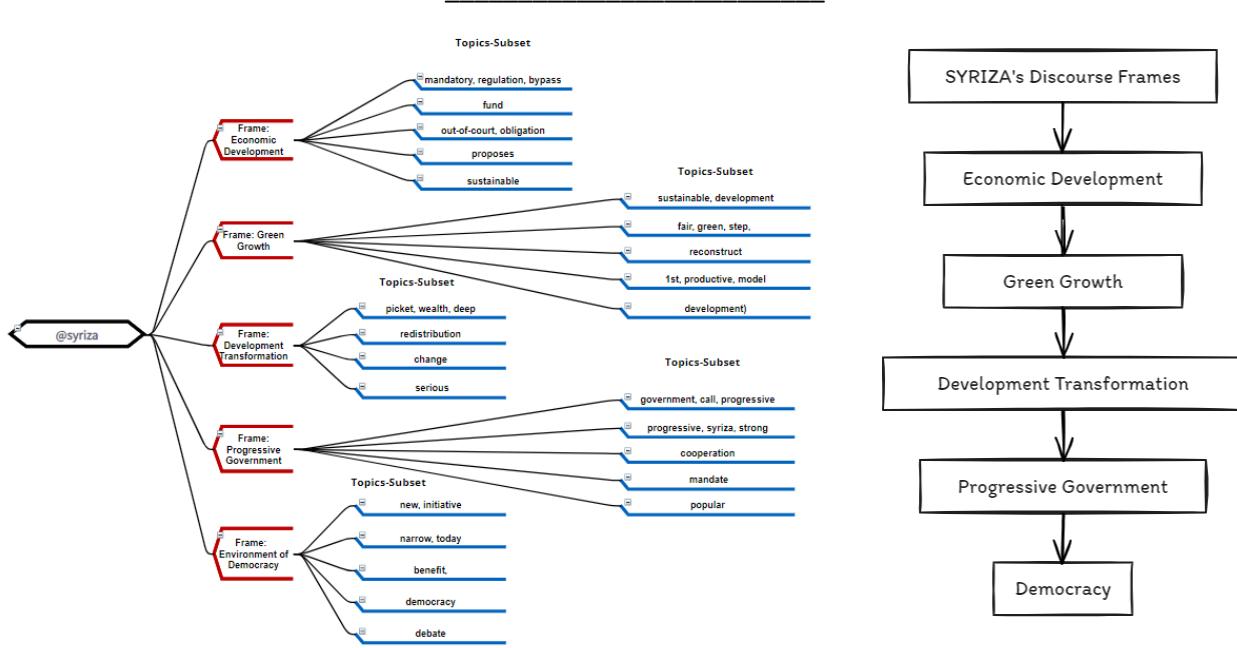


Figure 2: @syriza frame analysis through topic modeling

In the dialectics of sustainable development within PASOK and among its members, five distinct frames were identified, with the environmental framework taking precedence. Specifically, the terms "contact, environment, special microcosm, sustainable" were identified as integral components of this frame. Following closely in priority is the frame of climate change, which is elucidated through subsets encompassing "change, climate, extreme, reconstruct, phenomenon, weather, invest, due, multiply, and prevention". Within this particular political formation, the narrative of sustainable development is constructed primarily in environmental terms, emphasizing the environment and the consequential impacts of human factors. Simultaneously, it underscores the phenomenon of climate change and its profound significance (word: extreme). Subsequently, the frame of equality-inequality emerges, characterized by recurrent motifs such as "development, sustainable, reduce, inequalities, perspective, choices, policies, build, people". Following in sequence is the framework of economic development, which encapsulates keywords such as "debt, sustainable, interest, rates, larger, deficit, bonds, state, debt". This frame addresses the issue of debt and its determination of sustainability, while also incorporating notions of justice and the role of the state. Finally, the last frame in sequence is that of social assistance, which references lexical sets including "environment, health care, parliament, government, family".

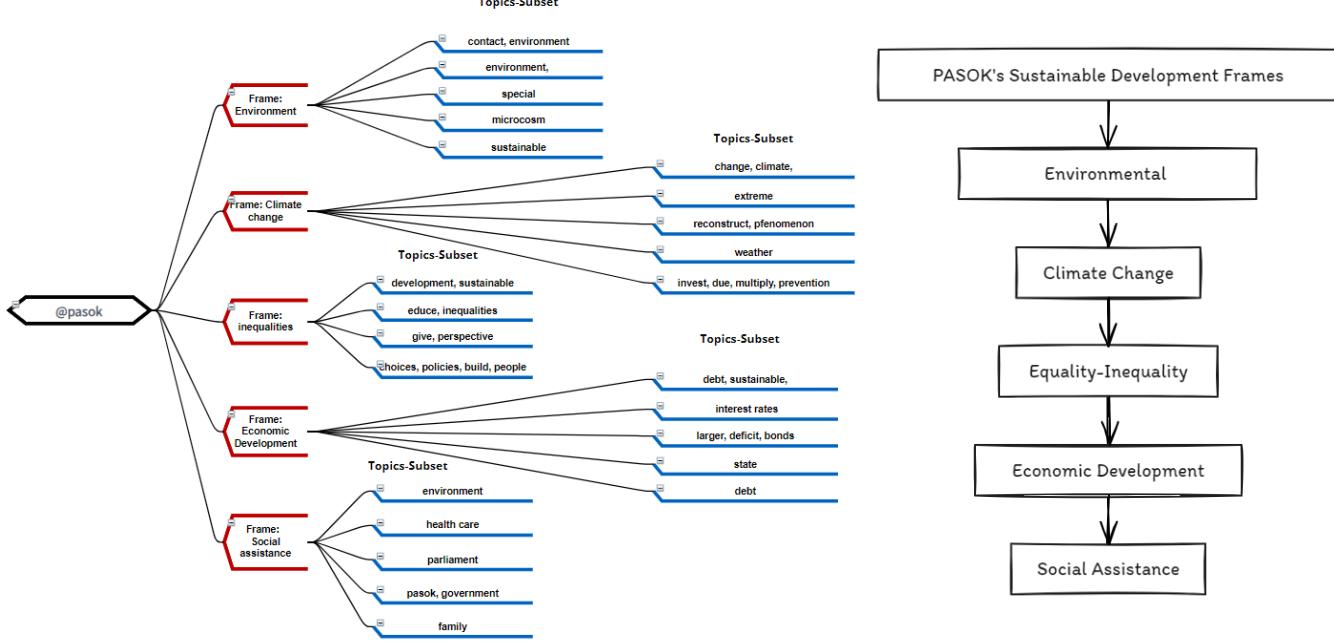
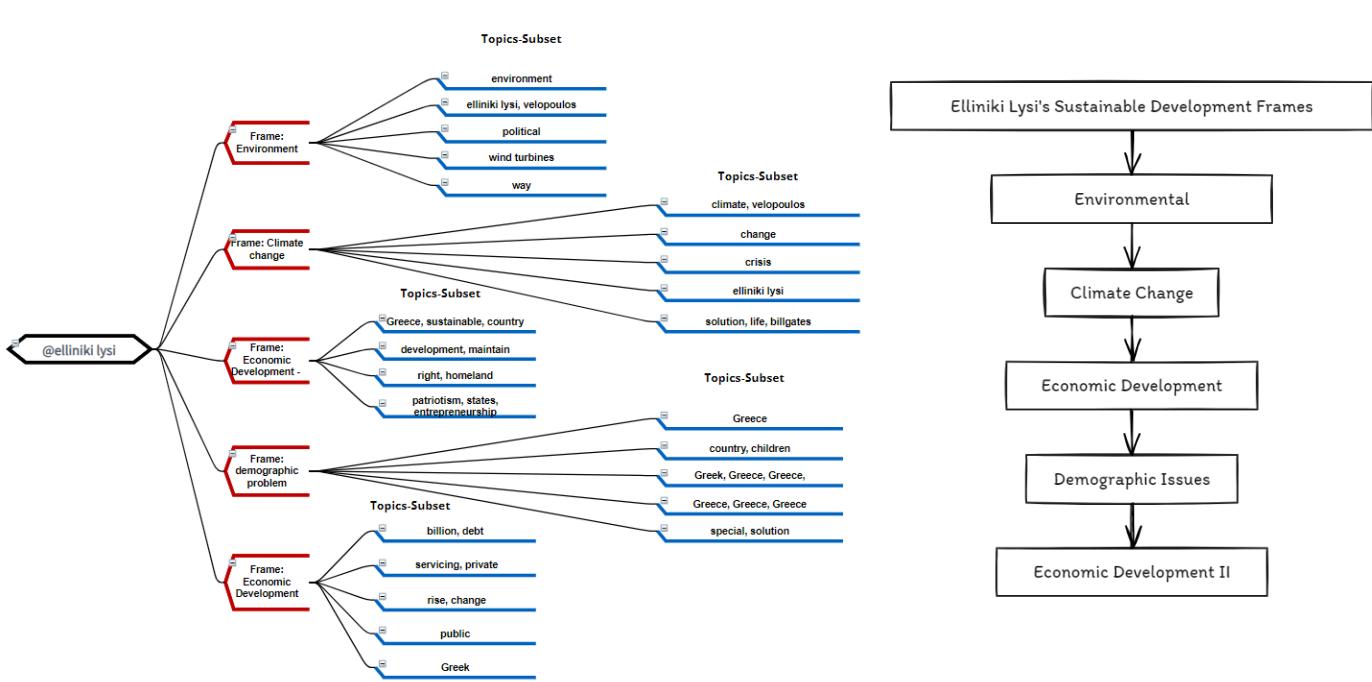


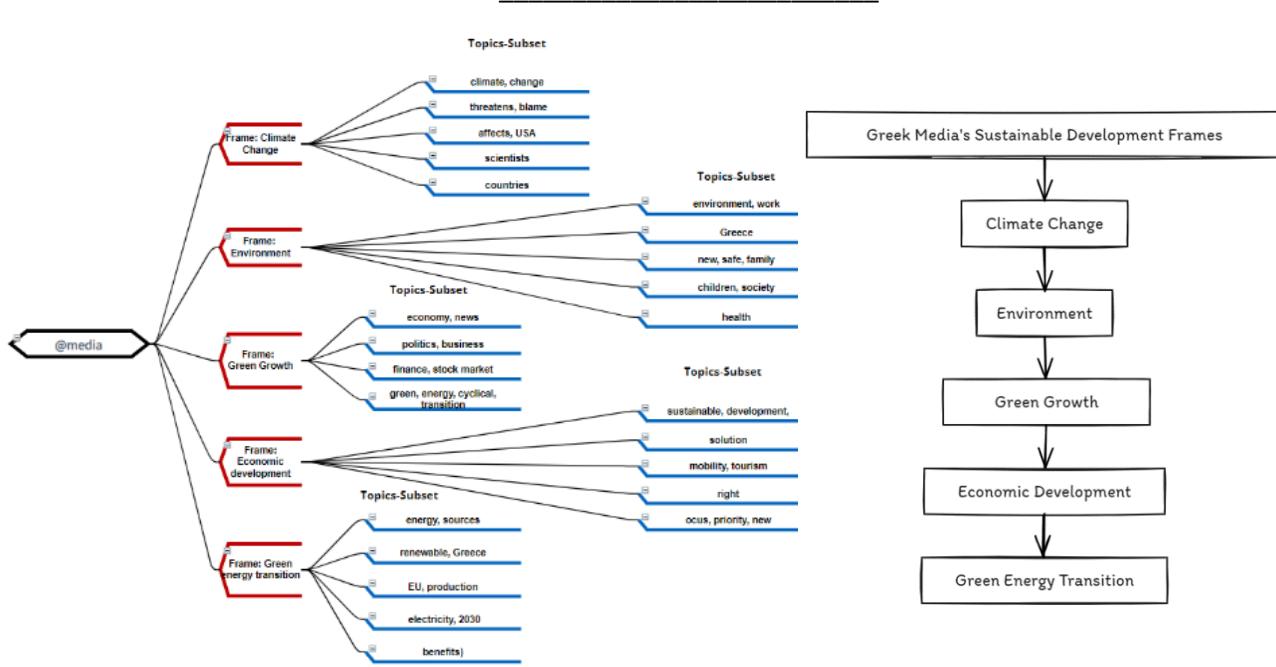
Figure 3: @pasok frame analysis through topic modeling

In the rhetoric of sustainable development within the political formation of Elliniki Lysi, the environmental framework was identified, focusing on energy transition and wind turbines. Specifically, the lexical sets presented were as follows: "environment, Elliniki Lysi, Velopoulos, political, wind turbines, way". Subsequently, the framework explored was that of climate change, with topics-subset including "climate, change, crisis, Greek Solution-Velopoulos, solution, life, obligations". In this particular frame, Greek Solution portrays climate change as a part of a conspiracy theory through which they attempt to steer public opinion in a specific direction. This framework differs from the corresponding frames identified in other political formations. The third frame identified in sequence was that of economic development, linking sustainable development with the nation, homeland, and just policies. The topic-subsets identified were as follows: "Greece, sustainable, country, development, maintain, right, homeland, patriotism, states". This specific framework also distinguishes itself in relation to the rhetoric of the corresponding frames in other political formations. The next two frames identified were those of demographic issues, positioning it as a sustainable development problem with ethnographic characteristics, and the framework of economic development, expressed in terms different from Frame 3. Specifically, this frame exhibited similar characteristics to the others, including lexical sets such as "billion, debt, servicing, private, risk, change, public, Greece".



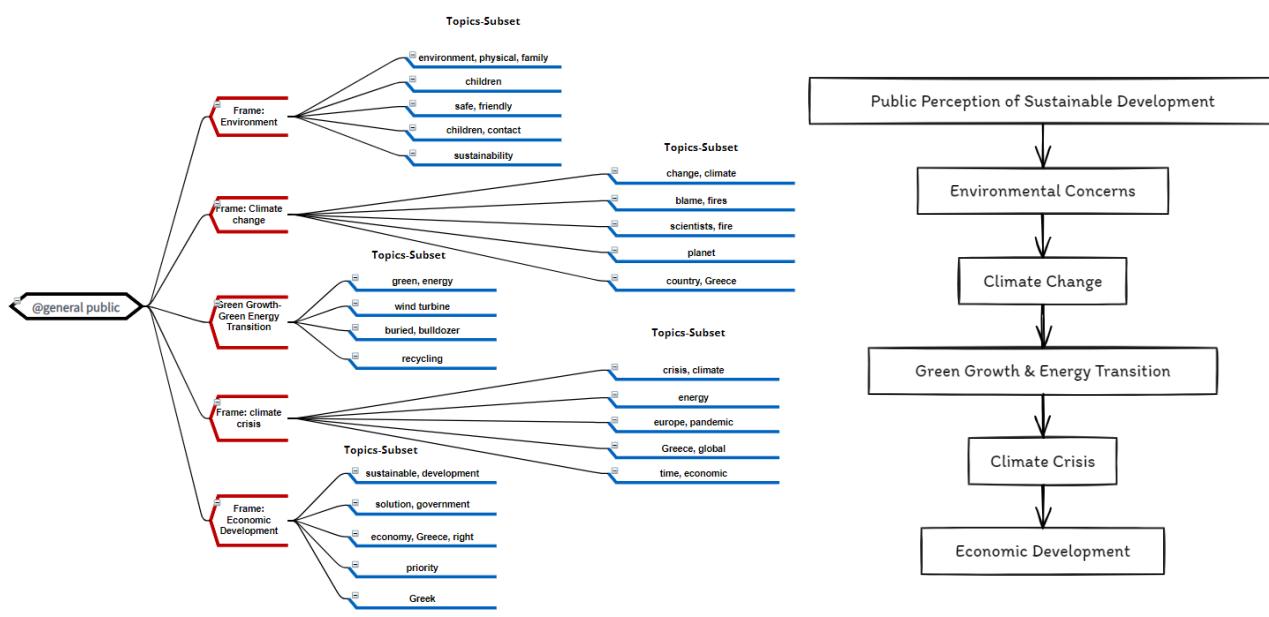
**Figure 4:** @elliniki lysi frame analysis through topic modeling

The rhetoric of the Greek media on sustainable development issues is surrounded by 5 constant frames during the election period. Specifically, the first frame in hierarchical order was identified as the climate change frame, which is mainly presented with the following lexical frames "climate, change, threatens, blame, effects, U.S.A, scientists, countries". The next context identified in order was that of the environment, but here too it was observed that the reference was to the family or work environment rather than the natural environment. The third context identified was that of green development. The following word sets were identified in this context: 'economy, news, politics, busyness, finance, stock market, green, energy, cyclical, transition'. The economic development context comes fourth in the order identified by keywords "sustainable development, solution, mobility, mobility, tourism, right, priority, new". Finally, the last framework identified was that of green energy transition which is defined as follows "energy sources, renewable, Greece, EU, production, electricity, 2030, benefits".



**Figure 5:** @media frame analysis through topic modeling

The public's perception of sustainable development is delineated by five distinct conceptual frames, as identified within key stakeholder groups, namely politicians and media. The primary frame focuses on environmental concerns, characterized by an amalgam of terms including "environment," "physical," "family," "children," "safe," "friendly," "contact," and "sustainability." Following this, the concept of climate change emerges as the next priority, encapsulated by the terms "change," "climate," "blame," "fires," "scientists," "planet," "country," and "Greece." The third framework involves a dual thematic focus on green growth and the transition to green energy, represented by terms such as "green," "energy," "wind turbine," "buried," "builder," and "recycling." Furthermore, the climate crisis is acknowledged as a significant element within the public's conceptualization, described through the keywords "crisis," "climate," "energy," "Europe," "pandemic," "Greece," "global," "time," and "economic.". Lastly, the hierarchy of perceptions culminates in the context of economic development, which is articulated through the terms "sustainable development," "solution," "government," "economy," "Greece," "right," "priority," and "Greek." This elucidation of conceptual frames highlights the multifaceted nature of public understanding concerning sustainable development.



**Figure 6:** @general public frame analysis through topic modeling

## Conclusion

The findings from this extensive analysis highlight the varied and complex ways in which sustainable development is conceptualized and discussed across different stakeholders in the political, media, and public spheres. Over a year, a significant volume of discourse was captured, revealing how each group prioritizes and frames issues of sustainability in unique ways. However, there are notable gaps and limitations in these discussions that need to be addressed for a more holistic understanding and approach to sustainable development.

**Table 2:** Comparative Frame Analysis of Sustainable Development Across Political Formations, Media Outlets, and the Public

Frame	Nea Demokratia	SYRIZA	PASOK	Elliniki Lysi	Media Outlets	General Public
Technological Transformation	Digital transition, services for citizens	Not prominent	Not prominent	Not prominent	Rarely mentioned	Rarely mentioned
Climate Change	National disasters, fires, support	Mentioned, but less prominent	Focus on "extreme phenomena"	Conspiracy theory-driven	Urgent coverage, global	Environmental impact, scientists,

	programs		a," weather effects	rhetoric	impacts	fires
<b>Economic Development</b>	Economic transformation, growth	Central to the narrative, focus on reform	Linked to inequality, debt, and state involvement	Homeland, patriotism, just policies	Focus on tourism, mobility, sustainability	Economic stability, government solutions
<b>Sustainable Consumption</b>	Green consumption models, entrepreneurship, individual actions	Not prominent	Inequality reduction, sustainable choices	Not prominent	Not prominent	Green growth, transition to sustainable practices
<b>Green Energy Transition</b>	Solar energy, renewable sources	Green development, new production models	Renewable energy as part of climate change adaptation	Wind turbines, energy crisis	Transition to renewables, energy sources, production	Wind turbines, recycling, energy crisis
<b>Environmental Concerns</b>	Not a central frame	Embedded in broader green development	Core to the narrative, with emphasis on societal impacts	Mentioned in energy and conspiracy contexts	Environment occasionally mentioned (workplace /family)	Core concern, safe and sustainable practices
<b>Social Justice/Assistance</b>	Not prominent	Progressive policies, government collaboration	Reducing inequalities, social safety	Not prominent	Not prominent	Rarely mentioned, but implied in broader environmental concerns
<b>Equality/Inequality</b>	Not prominent	Mentioned in context of green development	Core frame, reduction of inequalities	Not prominent	Not a focus	Only indirectly referenced
<b>Demograph</b>	Not a frame	Not	Not	Highlighte	Not	Not

ic Issues		mentioned	mentioned	d, with ethnographic focus	prominent	prominent
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Political parties, for instance, demonstrate a strategic approach to framing sustainable development, each aligning their rhetoric with broader ideological narratives. Nea Dimokratia emphasizes technological transformation and climate change, aligning these frames with actionable policies and future plans. Yet, their focus on technology may overlook important social dimensions and the need for community engagement in sustainable practices. SYRIZA, on the other hand, focuses on economic and green development, embedding sustainability within economic reform. While this is a comprehensive approach, it may lack specific strategies for immediate environmental challenges and grassroots movements. PASOK prioritizes environmental issues, stressing the need for societal and policy changes to address climate impacts and social inequalities. This approach is commendable, but it might be limited by insufficient attention to economic implications and the practical implementation of proposed policies. Elliniki Lysi's discourse is distinct, mixing environmental concerns with nationalistic and demographic themes. However, this approach may risk marginalizing certain social groups and ignoring the global nature of environmental issues.

The media's portrayal of sustainable development, while varied, often reflects broader societal concerns and the immediacy of climate impacts, highlighting the urgency of addressing such issues. Their discourse suggests a call to action, urging various sectors to prioritize and respond to the pressing demands of environmental and economic sustainability. Despite this urgency, media coverage can sometimes be sensationalized, potentially leading to public fatigue or skepticism. Moreover, media narratives might not always provide in-depth analysis or long-term solutions, focusing instead on immediate crises. Lastly, the general public's engagement reveals a deep concern for environmental and climate issues, recognizing the intertwined nature of ecological health, economic stability, and societal welfare. Their diverse framing underscores a collective acknowledgment of the complexity of sustainable development and the necessity for a holistic approach. However, public discourse may often be fragmented or influenced by misinformation, which can hinder cohesive action. Additionally, there may be a lack of accessible information and resources to empower individual and community-level initiatives.

The findings highlight the diverse and conflicting approaches to sustainable development among policymakers, the media and the public. The framing of the narratives shows how each group uses different frames to promote its own agenda. Sometimes the emphasis is on technological development, sometimes on environmental protection. Similar findings emerged in Koteyko's (2012) UK media research, which found that traditional and digital media promoted sustainable

development framing in economic and technological terms, often neglecting the social justice dimension. This lack of a comprehensive approach appears to be a common factor across the world, as this study also found that the environmental dimension of sustainable development, while important, is often overshadowed by the economic or technological agenda of political parties and the media.

In sum, this analysis underscores the multifaceted nature of sustainable development discourse, reflecting a broad spectrum of perceptions and priorities. By dissecting these frames, stakeholders can better understand and address the diverse concerns and expectations of various groups, aiming for more comprehensive and inclusive sustainable development strategies. Addressing the identified gaps and limitations is crucial for fostering more effective and collaborative efforts toward sustainable development.

## References

Allen, C., Metternicht, G., & Wiedmann, T. (2018). Initial progress in implementing the Sustainable Development Goals (SDGs): A review of evidence from countries. *Sustainability Science*, 13, 1453-1467.

Antwi-Agyei, P., Dougill, A. J., Agyekum, T. P., & Stringer, L. C. (2018). Alignment between nationally determined contributions and the sustainable development goals for West Africa. *Climate Policy*, 18(10), 1296-1312.

Aswani, R., Kar, A. K., & Ilavarasan, P. V. (2019). Experience: Managing misinformation in social media—insights for policymakers from Twitter analytics. *Journal of Data and Information Quality (JDIQ)*, 12(1), 1-18.

Aswani, R., Kar, A. K., & Vigneswara Ilavarasan, P. (2018). Detection of spammers in Twitter marketing: A hybrid approach using social media analytics and bio inspired computing. *Information Systems Frontiers*, 20, 515-530.

Atanasova, D. (2019). Moving society to a sustainable future: The framing of sustainability in a constructive media outlet. *Environmental Communication*, 13(5), 700-711.

Audet, R. (2014). The double hermeneutic of sustainability transitions. *Environmental Innovation and Societal Transitions*, 11, 46-49.

Agyeman, J. (2007). Communicating “just sustainability”.

Bailey, I., & Wilson, G. A. (2009). Theorising transitional pathways in response to climate change: Technocentrism, ecocentrism, and the carbon economy. *Environment and Planning A*, 41(10), 2324-2341.

Bauman, Z. (2005). *Liquid Life*. Cambridge: Polity.

Benson, M. H., & Craig, R. K. (2014). The end of sustainability. *Society & Natural Resources*, 27(7), 777-782.

Biermann, F., Abbott, K., Andresen, S., Bäckstrand, K., Bernstein, S., Betsill, M. M., ... & Zondervan, R. (2012). Transforming governance and institutions for global sustainability: Key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability*, 4(1), 51-60.

Carroll, M. (2016). Formless meditation and sustainability. In *Spirituality and Sustainability: New Horizons and Exemplary Approaches* (pp. 139-153).

Clarke, M., & Islam, S. M. (2006). National account measures and sustainability objectives: Present approaches and future prospects. *Sustainable Development*, 14(4), 219-233.

Curiskis, S. A., Drake, B., Osborn, T. R., & Kennedy, P. J. (2020). An evaluation of document clustering and topic modelling in two online social networks: Twitter and Reddit. *Information Processing & Management*, 57(2), 102034.

Davies, A., Fahy, F., Rau, H., Devaney, L., Doyle, R., Heisserer, B., ... & Pape, J. (2014). ConsEnSus: Consumption, environment, and sustainability. *Environmental Protection Agency, Johnstown Castle, Ireland*.

Diprose, K., Fern, R., Vanderbeck, R. M., Chen, L., Valentine, G., Liu, C., & McQuaid, K. (2018). Corporations, consumerism and culpability: Sustainability in the British press. *Environmental Communication*, 12(5), 672-685.

Dryzek, J. S. (2005). *The politics of the earth: Environmental discourses*. Oxford University Press.

Doulton, H., & Brown, K. (2009). Ten years to prevent catastrophe?: Discourses of climate change and international development in the UK press. *Global Environmental Change*, 19(2), 191-202.

Entman, R. M. (2007). Framing bias: Media in the distribution of power. *Journal of Communication*, 57(1), 163-173.

Escobar, A. (1996). Construction nature: Elements for a post-structuralist political ecology. *Futures*, 28(4), 325-343.

Fuchs, C. (2017). Critical social theory and sustainable development: The role of class, capitalism, and domination in a dialectical analysis of un/sustainability. *Sustainable Development*, 25(5), 443-458.

Fukuda-Parr, S. (2016). From the Millennium Development Goals to the Sustainable Development Goals: Shifts in purpose, concept, and politics of global goal setting for development. *Gender & Development*, 24(1), 43-52.

Fukuda-Parr, S. (2019). Keeping out extreme inequality from the SDG agenda—the politics of indicators. *Global Policy*, 10, 61-69.

Fukuda-Parr, S., & Muchhala, B. (2020). The Southern origins of sustainable development goals: Ideas, actors, aspirations. *World Development*, 126, 104706.

Grover, P., Kar, A. K., & Ilavarasan, P. V. (2019). Impact of corporate social responsibility on reputation—Insights from tweets on sustainable development goals by CEOs. *International Journal of Information Management*, 48, 39-52.

Grover, P., Kar, A. K., Gupta, S., & Modgil, S. (2021). Influence of political leaders on sustainable development goals—Insights from Twitter. *Journal of Enterprise Information Management*, 34(6), 1893-1916.

Honnibal, M., & Montani, I. (2017). *spaCy 2: Natural Language Understanding with Bloom Embeddings, Convolutional Neural Networks and Incremental Parsing. Neural Machine Translation*. In Proceedings of the Association for Computational Linguistics (ACL) (pp. 688-697).

Hugé, J., Waas, T., Dahdouh-Guebas, F., Koedam, N., & Block, T. (2013). A discourse-analytical perspective on sustainability assessment: Interpreting sustainable development in practice. *Sustainability Science*, 8, 187-198.

Hugé, J., Block, T., Waas, T., Wright, T., & Dahdouh-Guebas, F. (2016). How to walk the talk? Developing actions for sustainability in academic research. *Journal of Cleaner Production*, 137, 83-92.

Jacobi, C., Van Atteveldt, W., & Welbers, K. (2018). *Quantitative analysis of large amounts of journalistic texts using topic modelling*. In Rethinking Research Methods in an Age of Digital Journalism (pp. 89-106). Routledge.

Kagawa, F. (2007). Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *International Journal of Sustainability in Higher Education*, 8(3), 317-338.

Koteyko, N. (2012). Managing carbon emissions: A discursive presentation of 'market-driven sustainability' in the British media. *Language & Communication*, 32(1), 24-35.

Leiserowitz, A. A., Kates, R. W., & Parris, T. M. (2005). Do global attitudes and behaviors support sustainable development? *Environment: Science and Policy for Sustainable Development*, 47(9), 22-38.

Lewis, E., Mansfield, C., & Baudains, C. (2008). Getting down and dirty: Values in education for sustainability. *Issues in Educational Research*, 18(2), 138-155.

Lewis, H. (2012). *Designing for sustainability*. In *Packaging for Sustainability* (pp. 41-106). London: Springer London.

Lewis, T. L. (2000). Media representations of "sustainable development" sustaining the status quo? *Science Communication*, 21(3), 244-273.

Lynch, T., & Khan, T. (2020). Understanding what sustainability is not—and what it is. *The Ecological Citizen*, 3(Suppl B), 55-65.

Millennium Ecosystem Assessment. (2005). Ecosystems and human well-being (Vol. 5, p. 563). Washington, DC: Island Press.

Muff, K., Liechti, A., & Dyllick, T. (2020). How to apply responsible leadership theory in practice: A competency tool to collaborate on the sustainable development goals. *Corporate Social Responsibility and Environmental Management*, 27(5), 2254-2274.

Newig, J. (2007). Does public participation in environmental decisions lead to improved environmental quality?: towards an analytical framework. Communication, Cooperation, Participation. *International Journal of Sustainability Communication*, 1(1), 51-71.

Nurmela, J., Kiianmaa, N., & Tanskanen, E. (2002). The Finns and sustainable development. *Futura*, 21(2), 11.

Pal, M., & Jenkins, J. J. (2014). Reimagining sustainability: An interrogation of the corporate knights' global 100. *Environmental Communication*, 8(3), 388-405.

Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., ... & Duchesnay, É. (2011). Scikit-learn: Machine learning in Python. *The Journal of machine Learning research*, 12, 2825-2830.

Raco, M. (2014). *The Post-Politics of Sustainability Planning: Privatisation and the Demise of Democratic Government*. In J. Wilson & E. Swyngedouw (Eds.), *The Post-Political and its Discontents: Spaces of Depoliticisation, Spectres of Radical Politics* (pp. 25-47). Edinburgh: Edinburgh University Press.

Raco, M., Imrie, R., & Lin, W.-I. (2012). Community Governance, Critical Cosmopolitanism and Urban Change: Observations from Taipei, Taiwan. *International Journal of Urban and Regional Research*, 35(2), 274-294.

Rosati, F., & Faria, L. G. (2019). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production*, 215, 1312-1326.

Sala, S., Crenna, E., Secchi, M., & Sanyé-Mengual, E. (2020). Environmental sustainability of European production and consumption assessed against planetary boundaries. *Journal of Environmental Management*, 269, 110686.

Scheyvens, R., Banks, G., & Hughes, E. (2016). The private sector and the SDGs: The need to move beyond 'business as usual'. *Sustainable Development*, 24(6), 371-382.

Vakeel, K. A., & Panigrahi, P. K. (2018). Social Media Usage in E-Government: Mediating Role of Government Participation. *Journal of Global Information Management*, 26(1), 1-19. <https://doi.org/10.4018/JGIM.2018010101>

Vallance, S., Perkins, H. C., & Dixon, J. (2011). What is Social Sustainability? A Clarification of Concepts. *Geoforum*, 42(3), 342-348.

VanBoxtel, D., Swenson, R., & Steede, G. (2023). Green Framing in Corporate Poultry Videos: An Analysis of Sustainability Messaging. *Journal of Applied Communications*, 106(4).

Van Gorp, B., & van der Goot, M. J. (2012). Sustainable food and agriculture: Stakeholder's frames. *Communication, Culture & Critique*, 5(2), 127-148.

Vrysis, L., Vryzas, N., Kotsakis, R., Saridou, T., Matsiola, M., Veglis, A., ... & Dimoulas, C. (2021). A web interface for analyzing hate speech. *Future Internet*, 13(3), 80.

WCED, S. W. S. (1987). World Commission on Environment and Development. Our Common Future, 17(1), 1-91.

Winkler, I. T., & Williams, C. (2017). The Sustainable Development Goals and human rights: A critical early review. *The International Journal of Human Rights*, 21(8), 1023-1028.

Wilson, J., & Swyngedouw, E. (2014). The Post-Political and its Discontents: Spaces of Depoliticisation, Spectres of Radical Politics. Edinburgh: Edinburgh University Press.

