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To cite this article: Maria-Claudia Diaconeasa, Gabriel Popescu, Natalia Maehle, Signe Nelgen & Roberta Capitello (2021): Media Discourse on Sustainable Consumption in Europe, Environmental Communication, DOI: [10.1080/17524032.2021.1999295](https://doi.org/10.1080/17524032.2021.1999295)

To link to this article: <https://doi.org/10.1080/17524032.2021.1999295>



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Published online: 29 Nov 2021.



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## Media Discourse on Sustainable Consumption in Europe

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### ABSTRACT

Given the importance of mass media in forming consumer attitudes, exploring the main trends in the media discourse on sustainability is of great interest to businesses, policymakers and researchers. This study investigates the discourse on sustainable consumption in major national newspapers in four European countries (Germany, Italy, Norway and Romania), using food consumption as the specific topic. It provides a comprehensive analysis of the issues reported in the newspapers related to the concept of sustainable food from the longitudinal and comparative perspective and identifies the dimensions of sustainability reported in the examined newspapers that are associated with sustainable food in the four different countries. This study adds to the understanding of how the sustainable food concept has developed in Europe over time and highlights the factors that have influenced the development of this concept. The information gaps in the common understanding of the sustainable food concept are pointed out through this research, therefore illustrating how to enhance consumer awareness about this issue.

### ARTICLE HISTORY

Received 21 April 2021  
Accepted 24 October 2021

### KEYWORDS

Sustainable consumption; sustainable food; media discourse; cross-country analysis; mass media communication

## Introduction

Sustainable production and consumption are accepted as key aspects of inclusive public policy for both developed and developing countries (UN, 2015). Several studies have analyzed the importance of sustainability from the production side (Fiala et al., 2021). In addition, research is paying increasing attention to the consumer side of sustainability efforts (ElHaffar et al., 2020). From an individual perspective, sustainable consumer behavior differs from traditional behavior because it shifts focus from satisfying the consumer's immediate personal needs to achieving long-term benefits for humanity and nature as a whole (White et al., 2019). Therefore, it is important to conduct research that will create understanding of the dynamics of sustainable consumption.

One of the domains of sustainable consumption that has received a great deal of attention in the research and public debate on sustainability is sustainable food, broadly defined as food that allows consumers to pursue their environmental and ethical values (Halder et al., 2020). The focus is given to sustainable food due to its recognized importance for sustainable development (Sala et al., 2017; Vermeir et al., 2020) and high level of greenhouse gas emissions created by the food sector (Fiala et al., 2021). Despite the increased focus on sustainable food, there is a clear need for further

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research in this domain. For example, it is important to understand how knowledge about sustainable food contributes to shaping consumer attitudes (Verain et al., 2015).

Several studies have explored how various information sources convey sustainability-related information, for example, business communication, advertising, product information and labeling (Grunert et al., 2014; Reilly & Larya, 2018). However, it remains underinvestigated how mass media and national press contribute to the sustainability debate (Diprose et al., 2018) and to the debate on sustainable food in particular (Bellotti & Panzone, 2016; Fiala et al., 2021).

Mass media performs a role of a gatekeeper by selecting and disseminating information to raise public awareness of specific issues (Carvalho, 2007; Strong & Wells, 2020), and can thus shape opinions and understanding related to sustainable food (White et al., 2019). Moreover, mass media acts as a communication channel for scientists, experts and businesses who want to educate the general public about sustainability (Summ & Volpers, 2016). Therefore, mass media can not only contribute to increasing public awareness and consciousness, but also generate a “common” understanding of the sustainable food concept for consumers and businesses (Diprose et al., 2018). It can also increase the sense of individual responsibility for making sustainable choices (Lee et al., 2019).

Considering the importance of mass media in forming individual attitudes towards sustainable food, understanding the main trends in the media discourse on sustainable food is of great interest to both the food industry and policymakers. For food businesses, better understanding of consumers’ perceptions of sustainable food can help to develop marketing and communication strategies (Reilly & Larya, 2018). Similarly, policymakers can use the media trends to guide public opinion and develop European and national food policies towards a more sustainable direction (Strong & Wells, 2020).

To address these issues the current study investigates the discourse on sustainable food consumption in major national newspapers in four European countries (Germany, Italy, Norway and Romania). The focus is set on mainstream national newspapers because they are perceived by the public as professional and trustworthy (Bellotti & Panzone, 2016; Fiala et al., 2021), providing an accessible way of assessing national trends and being a good indicator of nationally prevalent cultural evaluations on a considered issue (Broadbent et al., 2016). Despite a growing interest in sustainable food in social media (e.g. in Instagram), their information quality is difficult to control due to the high number of users posting their opinions, which leads to more complexity and makes social media a peculiar case requiring a study on its own (Mapes & Ross, 2020).

The study attempts to answer the following research questions (RQs):

RQ1: What are the main issues represented in the sustainable food debate in the mainstream national newspapers in the four analyzed European countries?

RQ2: How have the key issues in the sustainable food discourse evolved over time?

RQ3: Who are the main actors participating in the sustainable food debate?

RQ4: Are there any differences between the analyzed countries in the media discourse related to sustainable food?

The paper includes four main sections. The following section presents the theoretical background of the study. The methodology section explains the data collection and data analysis procedures. The findings section presents the country-specific and overall results of the analysis. The discussion section explains the main findings in the light of the relevant literature and illustrates the implications for businesses and policymakers. Finally, we discuss the limitations of the current study and suggest future research avenues.

## **Theoretical background**

### ***Understandings of sustainable food consumption***

Since the Brundtland Report (1987) was issued, broadly defining sustainable development as an aspiration to meet the current needs without compromising the ability to meet those in the future,

sustainability became a universal goal which may be applied to any domain, including the one of food. To provide a background for our investigation, below we discuss the definition of the sustainable food concept and present a short overview of the previous research findings on sustainable food consumption. The existing literature defines sustainable food as a broad category that encompasses the following: food produced with minimal negative impact on the environment (Spendrup et al., 2019); food produced with respect for human rights and animal welfare (Halder et al., 2020); food produced with artisanal and typical production practices (e.g. traditional products, products under quality schemes) (Sama et al., 2018); locally produced food (e.g. zero-mile food or local food) (Elhoushy, 2020); healthy and nutritious food (e.g. plant-based food) (Ibarrola-Rivas & Galicia, 2017); food packaged in recycled and recyclable materials or with no packaging (e.g. paper or bioplastic packing) (Beitzen-Heineke et al., 2017); food that leads to minimal waste (e.g. new practices to store food at home) (Vermeir et al., 2020).

The literature discusses several categories of factors influencing sustainable food choices (positively and negatively). One category relates to consumer knowledge about food, specifically consumer understanding of the sustainable food concept (Stranieri et al., 2017), and consumer education about sustainable food (Graça et al., 2020). Another category focuses on the potential benefits of consuming sustainable food, for example, health benefits (Ibarrola-Rivas & Galicia, 2017); environmental benefits (Krishnan et al., 2020); and increased social responsibility (Sama et al., 2018). A third category looks at individual-level factors, for example, sustainable practices (Lee et al., 2019); specific diets and lifestyle changes (Spendrup et al., 2019); favorable attitudes towards environmental protection (Krishnan et al., 2020) or sustainable habits (Vermeir et al., 2020). A final category relates to the barriers for buying sustainable food, such as limited availability of sustainable products (Vermeir et al., 2020) and price differences between regular and sustainable food (Sama et al., 2018).

### ***Importance of cultural background for sustainable food consumption***

The previous research demonstrates that cultural dimensions influence peoples' attitudes and expectations in various domains including sustainability. Vermeir et al. (2020) find that people with traditional values are more likely to consume sustainable products. In addition, Halder et al. (2020) claim that collectivism and long-term orientation positively influence sustainable consumption attitudes, while traditionalism and short-term orientation have a negative effect on sustainable consumption. Gregory-Smith et al. (2017) argue that willingness to pay for green products is higher in collectivistic societies. Also, Sulmont-Rossé et al. (2019) claim that collectivist societies associate good food with positive feelings of happiness and enthusiasm, while individualistic societies associate good food with proper nutrition and health benefits.

In this study, we use the widely accepted cultural dimensions developed by Hofstede (2011) to discuss the differences in the sustainable food discourse between the four European countries (Halder et al., 2020; Vermeir et al., 2020). Hofstede's (2011) cultural dimensions include power-distance (individuals' reaction to the issue of inequality); uncertainty avoidance (individuals' reaction to facing an uncertain future); individualism versus collectivism (the level of individuals' need to belong to a social group); masculinity versus femininity (the level of emotional expressivity and the roles of men and women in the society); long-term versus short-term orientation (individuals' focus on the past, present or future); indulgence versus restraint (individuals' focus on enjoying life).

### ***Sustainable food and media discourse***

Mass media can contribute to increasing consumer knowledge on food sustainability by bringing science 'out on the street' (Summ & Volpers, 2016), as one of the media's responsibilities is

being a source of science- and technology-related information (Carvalho, 2007). The power of the media is demonstrated in several studies. For example, Bellotti and Panzone (2016) argue that consumers' awareness of a specific topic increases along with the higher frequency of the topic's appearance in the newspapers. Moreover, the media influences both political and public agendas (Strong & Wells, 2020) and contributes to shaping people's behavior (Summ & Volpers, 2016), therefore it can serve as a significant tool in promoting sustainable food consumption. Yet, Janoušková et al. (2019) report low involvement of the British press in the sustainability debate, while Fischer et al. (2017) demonstrate that in the German newspapers "sustainability" has evolved from being only a fashionable word to an elaborated concept of sustainable development.

When discussing the role of media, it is important to consider how the media selects and presents information. The topic selection process involves several factors: the potential of the information to capture readers' attention, the importance of the information, who will advocate for the information, the socioeconomic context of the reported timeframe, the controversy, novelty and relevance of the topic for the reader, and the proximity of the topic (Carvalho, 2007).

The way the media frames messages by highlighting particular topics can guide individuals towards certain attitudes (Atanasova, 2019). Media coverage of various topics (e.g. organic food, environmental labeling, food prices or sustainability) has a significant effect on consumer behavior and three main frames are identified by Diprose et al. (2018) in the United Kingdom regarding sustainability: solutions, corporate social responsibility and "sustainable" consumerism. Also, media has the ability to raise public awareness and influence public opinion on the food policy agenda, and to shape the policy construction around a specific topic (Strong & Wells, 2020). For example, the positive framing of sustainable agricultural practices in the farmers-oriented UK press influenced the farmers to adopt such practices in their work (Rust et al., 2021).

Thus, analyzing the media discourse is extremely important for understanding consumer behavior in relation to sustainable food, therefore truly relevant to businesses and policymakers. For example, comparing the media debate in different European countries, as proposed in this study, reveals the national differences in consumers' attitudes towards sustainable food consumption, allowing businesses to tailor their marketing concepts to the national settings.

As previous cross-country studies point out, the media attention to particular sustainability related issues has proliferated in the last years, focusing predominantly on climate change (Barkemeyer et al., 2018; Günay et al., 2021; Schmidt et al., 2013). By analyzing the newspaper articles in 27 countries, Schmidt et al. (2013) observed a higher media attention to climate change in the carbon dependent countries with Kyoto Protocol agreements. Nevertheless, after analyzing 113 newspapers in 41 different countries, Barkemeyer et al. (2017) claim that the topic has progressed from being "a rich country issue" to being a part of the common news vocabulary who frame it either from the mitigation perspective or from the adaptation perspective (Günay et al., 2021). Yet, in their study on five countries, Barkemeyer et al. (2018) observe the downside of such great attention given to climate change, meaning the lack of attention on other sustainable development issues such as biodiversity or cleaner technologies. Further limitations of the previous studies on media coverage of sustainability and climate change are identified by Ghosh and Boykoff (2018), who observe that these studies have mostly focused on English speaking and developed countries.

The present study draws from the fact that sustainability coverage has internationally grown in importance in the media through the debate on climate change, involving more and more actors in the topic and receiving more attention in the public agendas (Ghosh & Boykoff, 2018; Schmidt et al., 2013). On the other one hand, sustainable consumption is getting considerable upsurge in the academic research and in the public consideration (Vermeir et al., 2020; White et al., 2019), which are attributing to the food system and the sustainable food consumption a pivotal role to move the economic system and the society towards more sustainable choices (Béné et al., 2019; Galli et al., 2020). Therefore, the current study differs from the previous ones by taking on a novel topic of the media discourse analysis, examining the articles on sustainable food in the main national

newspapers and comparing different European countries with various cultural and developmental backgrounds.

## Materials and methods

### *Selected countries*

To achieve a comprehensive understanding of the media discourse on sustainable food in Europe, we selected four countries that represent different regions: Germany (Central Europe), Italy (Southern Europe), Norway (Northern Europe) and Romania (Eastern Europe). These countries provide an interesting study context for a longitudinal cross-country comparison. Specifically, they differ in their level of economic development, which might contribute to a different framing of the media discourse on food sustainability (Atanasova, 2019). For example, the real gross domestic product (GDP) per capita in 2019 was as follows: Norway 69,770 euros, Germany 35,970 euros, Italy 26,860 euros and Romania 9130 euros (Eurostat, 2020). The countries also differ in their stage of ecological development. According to The Footprint Network (2020), Norway has a biocapacity (i.e. the productivity of a country's ecological assets) reserve, while the other three countries have a biocapacity debt.

We also observe differences in terms of average spending on organic food; in 2018, 131.7 euros/capita in Germany, 79.2 euros/capita in Norway, 57.6 euros/capita in Italy and 2.06 euros/capita in Romania (FiBL, 2020). However, the organic market occupied a small share of the total food market in 2018 for all four countries (FiBL, 2020). Moreover, the selected countries also follow different diets. In 2017, the meat consumption was as follows: Germany 84.8 kg/capita; Italy 78.2 kg/capita; Norway 61.5 kg/capita and Romania 59.6 kg/capita. Whereas the fish consumption was Norway 40.16 kg/capita; Italy 17.64 kg/capita; Germany 11.22 kg/capita and Romania 5.62 kg/capita (FAO, 2020).

Comparing the four countries based on cultural dimensions by Hofstede et al. (2005), Norway and Germany share a high trust in the authorities, while the trust in the authorities in Romania is low due to a high level of corruption, generating a strong feeling of unsafety. Norwegians and Germans tend to respect and accept new rules, while it takes longer for Romanians to do so. Italy, Germany and Norway are individualistic societies, focusing on relationships with close family, while Romania is a collectivist society, where shared responsibility for each society member is expected. In addition, Romanians focus less on long-term health and wellbeing, while Germans and Italians have long-term orientation, more easily adapting their traditions to new contexts. Norwegians have a short-term orientation, preferring to see quick results of their work.

### *Selected media*

To analyze the media discourse on sustainable food, the three most influential mainstream national newspapers from each country were identified based on the official number of readers and availability of an online article archive (Table 1). We also attempted to include the newspapers reflecting different political orientations to secure the representation of various political opinions.

We conducted a longitudinal study, extracting the articles published in the five-year period from January 2014 to December 2018.

As a starting point, we used the key phrase “sustainable food consumption” to search for related articles in the newspapers' online archives. The search was then expanded by including “sustainable food” and “sustainability” and “food.” Only articles related to both food and sustainability were included. The search phrases were used in national languages and included all synonyms of the key words (see Table A1 in the Appendix).

By following this procedure, we extracted 2155 valid articles from the online archives of the selected newspapers. The higher number of articles extracted in Italy in comparison with the other three investigated countries can be mainly explained by the international exposition, Expo



**Table 1.** Selected Newspapers and Number of Valid Articles on the Topic of Sustainable Food in Each Analyzed Country.

Country, total number of analyzed articles	Newspaper	Newspaper ranking by circulation (2018)	Valid articles extracted
Germany <i>n</i> = 334	<i>Frankfurter Allgemeine Zeitung</i> ("Frankfurt General Newspaper")	Third largest newspaper. The political orientation is liberal conservative.	91
	<i>Süddeutsche Zeitung</i> ("South German Newspaper")	Second largest newspaper. The political orientation is progressive liberate, center-left.	159
	<i>Der Spiegel</i> ("The Mirror")	Largest news website and magazine. The political orientation is center-left.	84
Italy <i>n</i> = 1325	<i>La Stampa</i> ("The Press")	Daily general-interest newspaper is the fourth largest online and fifth largest in print newspaper in Italy. The political orientation is center-moderated.	491
	<i>La Repubblica</i> ("The Republic")	Daily general-interest newspaper is the second largest in print and third largest online newspaper in Italy. The political orientation is center-left.	489
	<i>Il Sole 24 Ore</i> ("The Sun 24 Hours")	Daily economic and financial-interest newspaper is the largest online and tenth largest in print newspaper. The owner is Confindustria, the main national association of manufacturing and service companies in Italy.	345
Norway <i>n</i> = 314	<i>Aftenposten</i> ("Evening Post")	Largest newspaper in print and third largest online. The political orientation is liberal conservative.	170
	<i>Dagbladet</i> ("Daily Magazine")	Second largest newspaper online. It is a liberal newspaper with a social profile.	75
	<i>Verdens Gang</i> ("Course of the World")	Second largest newspaper in print and largest online. It is an independent newspaper.	69
Romania <i>n</i> = 182	<i>Adevărul</i> ("Truth")	Third largest newspaper in print. It is an independent newspaper.	47
	<i>Evenimentul Zilei</i> ("News of the Day")	Largest newspaper in print. The official orientation is independent, yet the owner of the newspaper shows strong connections to a new conservative party.	52
	<i>România Liberă</i> ("Free Romania")	Second largest newspaper in print. The political orientation is democratic and pro-capitalist.	83
Total			2155

2015 "Feeding the Planet, Energy for Life," hosted in Milan (Italy) in 2015. The theme of the exposition generated great attention around the topics of food sustainability in the media. Several initiatives connected with the Expo theme (for example, workshops, public talks, festivals) were organized before and after the exposition and many newspaper articles reported and commented them.<sup>1</sup> Food is a relevant subject for Italian people and a significant component of Italian culture, as it is demonstrated by the choice of the theme for Expo 2015, and also by previous studies on food discourse in Italy (Brunori et al., 2013; Tiozzo et al., 2019).

All valid articles were imported to qualitative analysis software (NVivo for Italy, Norway and Romania, and MAXQDA for Germany). Using this type of software allowed us to manage and categorize article content and facilitated the cross-country analysis of the media discourse (Jackson & Bazeley, 2019; Kuckartz & Rädiker, 2019).

The articles were analyzed using the following coding process (Saldaña, 2021). In the first stage of coding, for each country a designated researcher, native speaker, read through the original sources and classified the content creating "nodes" in the English language. Descriptive and simultaneous coding was used. Then a second researcher for each country, also a native speaker, ensured accuracy auditing the text and the coding. If there was no consensus, the researchers discussed a particular piece of text and coded until they agreed on the assigned code. In subsequent stages of the coding, nodes were further reviewed and developed through coding and recoding in each national team (Saldaña, 2021). This process allowed us to identify the following elements for each country: main topics in the sustainable food discourse; main actors involved in the sustainable food debate; key trends in the sustainable food debate over time. At the final stage, further recoding,

refining and categorizing were conducted by the four research teams working together to discover differences between countries and identify common themes and trends (see Figure A1 in the Appendix), building up to the final set of codes, presented in Table 3.

## Findings

### *Main topics in the sustainable food media discourse*

Table 2 presents an overview of the main topics in the media discourse across the analyzed countries.

As it may be observed from Table 2, the top-5 topics in each of the four countries occupy more than 40% of the newspaper coverage. Yet, there is no topic with a similar importance in all four countries. For the most common topics, diets and food patterns (including meat consumption) and health are present in Germany, Norway and Romania, and food industry is common for Germany, Italy and Norway. Food trends are more important for Germany and Norway, sustainable technologies and innovations for Italy and Norway, and the political agenda for sustainable society is more present in Italy and Romania. The other national top five topics represent particularities of each country, such as the importance given to the events promoting sustainable food in Italy, especially after the powerful experience of the Milan Expo 2015.

Based on the top-5 topics identified in the media discourse, the understanding of sustainable food consumption in each country can be summarized in the following way. In Germany, sustainable food consumption encompasses specific diets and food trends, including meat reduced diets and health concerns, but also environmental concerns and sustainability of the food industry. In Italy, sustainable food consumption involves food-related events, education and information dedicated to sustainable food, focus on sustainable food from policymakers and food industry, and sustainable technology and innovations. In Norway, the concept of sustainable food consumption relates to the food industry's initiatives to increase sustainability, sustainable technology and innovations, food trends and diets, as well as health considerations. In Romania, sustainable food consumption covers health concerns, diets and food trends, political agendas for sustainable society, company strategies in the food industry, as well as the economic aspects of sustainability.

In summary, based on the most common topics in all four countries, the concept of sustainable food consumption can be defined as the situation when consumers follow sustainable diets and food trends, political agendas consider sustainable development of the society and food industry participates in sustainable initiatives and development of more sustainable technologies; all together leading to better health of the population and environmental protection at affordable costs.

Table 3 presents an overview of sustainable food topics and their weight for the four analyzed countries. We organize the main findings of the cross-country analysis based on four sustainability dimensions, namely: the human being, the society, the nature and the economy. These dimensions reflect the dominant interpretation of sustainability in the literature, through its three mutually

**Table 2.** Top-5 topics on sustainable food discussed in each analyzed country – percent of total references per country (%).

<i>Germany</i> (42.20%)	<i>Italy</i> (44.16%)
1. Diets and food patterns (including meat consumption)	1. Events promoting sustainable food
2. Food industry	2. Political agenda for sustainable society
3. Environmental concerns	3. Education and information
4. Health	4. Food industry
5. Food trends	5. Sustainable technology and innovations
<i>Norway</i> (51.25%)	<i>Romania</i> (42.65%)
1. Food industry	1. Health
2. Food trends	2. Political agenda for sustainable society
3. Health	3. Diets and food patterns (including meat consumption)
4. Sustainable technology and innovations	4. Company strategies in the food industry
5. Diets and food patterns (including meat consumption)	5. Economic aspects of sustainability and circular economy



**Table 3.** Overview of Main Sustainable Food Topics in Four European Countries from January 2014 to December 2018 – percent of total references per country (%).

Dimension	Topic	Germany	Italy	Norway	Romania
Human Being		<b>28.13</b>	<b>16.14</b>	<b>29.10</b>	<b>31.75</b>
	Health	8.10	2.63	9.45	12.55
	Food safety and security	2.96	4.44	1.39	5.13
	Food trends	6.57	4.94	11.08	5.83
	Diets and food patterns (including meat consumption)	10.51	4.13	7.17	8.24
Society		<b>17.57</b>	<b>42.03</b>	<b>10.84</b>	<b>23.64</b>
	Education and information	4.05	6.87	1.47	5.64
	Political agenda for sustainable society	4.11	8.49	3.42	9.06
	Events promoting sustainable food	3.83	15.17	3.02	3.74
	Ethical aspects of sustainability (including fair trade)	3.28	6.25	0.90	3.23
Nature	Local food culture	2.30	5.25	2.04	1.96
		<b>25.07</b>	<b>17.81</b>	<b>25.67</b>	<b>9.38</b>
	Environmental concerns	8.21	6.22	6.19	4.75
	Packaging challenges	3.17	1.16	0.73	0.89
	Organic farming	2.41	1.62	6.68	0.70
	Biodiversity	2.79	1.62	3.26	0.13
	Sustainable Development Goals	0.16	2.86	0.81	0.38
	Food waste	6.13	3.98	2.93	1.84
	Animal welfare	2.19	0.35	5.05	0.70
	Economy		<b>29.23</b>	<b>24.02</b>	<b>34.39</b>
Food industry		8.81	6.83	14.59	5.51
Economic aspects of sustainability and circular economy		0.82	3.17	1.87	6.27
Food costs and prices		4.87	0.23	2.36	4.75
Sustainable technology and innovations		5.25	6.80	8.96	3.30
Company strategies in the food industry		3.45	4.75	4.16	6.53
Agricultural policy and support schemes		2.74	2.05	1.55	4.50
Sustainable certification and labeling		3.28	0.19	0.90	4.37

supportive dimensions: social (business practices related to human capital and community, as well as social policy and community development through social justice and equity, and social infrastructure); environmental (the activities that do not compromise the natural resources of future generations) and economic (the impact of business choices on the economic system) (Elkington, 1997; Purvis et al., 2019). However, several researchers argue that the three dimensions do not cover all aspects of sustainability, as each individual is a piece of the growth chain, and there would be no society without an individual (Venkatesh, 2010). Even more, food is a particular produce, supporting human live. Some authors argue that there is a direct link between a healthy diet, chosen for personal benefits, and environmental health, as a positive consequence (Tilman & Clark, 2014). Yet, Béné et al. (2019) point out the current unsustainability of modern food systems, consumption included. Therefore, we add a fourth dimension, the human being, as a necessary component of the concept of food sustainability. The human dimension considers issues related to human wellbeing (e.g. health and safety) and individual human actions supporting sustainable development (e.g. food trends, food choices and diets).

### Germany

In Germany, each of the four sustainability dimensions received almost equal attention. As for the topics, the diets and food patterns one was leading the debate, followed by the topics of food industry, environmental concerns, health, food trend and food waste. Many of the topics are highly inter-linked, such as diets and food patterns (e.g. meat consumption), health and animal welfare.

The node diets and food patterns include a high and almost equal share of references on two meat-free diets (vegetarian and vegan). The food industry is the second most frequent topic and covers articles on the actions of large multinational firms. Next, environmental concerns topic includes a variety of issues (e.g. CO<sub>2</sub> emissions, palm oil, bees and insects, soy production and

animal feed). The topic health focuses on meat scandals (e.g. listeria/bacteria infestation, slaughtering of sick cattle in Poland); health effects of meat consumption; natural diets; and weight loss. Food trends and animal welfare are fourth and fifth in the list. The node food trends include articles on alternatives to meat products (e.g. insect foods); urban agriculture; packaging-free shopping; and so-called “super foods.”

The topics that attracted little attention include SDGs, economic aspects of sustainability and circular economy, animal welfare, local food culture and organic farming.

## **Italy**

In Italy, the society dimension received most of the coverage. The majority of the references discussed here associated food with a sustainable and fair society. Events promoting sustainable food and political agenda for sustainable society are the two most popular topics. The key event discussed is the Expo exhibition held in Milan in 2015, international event that generated many activities (workshops, festivals or conventions), focused on relevant sustainability issues at global level. The Milan Charter, a manifesto developed during the Expo, generates considerable debate around sustainable development in urban areas and the role of local public bodies. In the society dimension, there was also a significant focus on the challenges related to food education and information, ethical aspects of sustainability and local food culture.

In the economy dimension, the food industry and sustainable technology and innovation are the leading topics. Many articles describe the differentiation strategies of the national food producers based on sustainability-related initiatives (e.g. eco-friendly agriculture, organic production, novel food or ecolabels). Sustainability is also related to scientific research and its industrial applications (e.g. urban agriculture, product traceability biotechnology, eco-packaging or big data management).

In the nature dimension, the environmental concerns, including the aspects of climate change, carbon emissions, pollution and green energy, receive particular attention, followed by the debate on finding new solutions to manage waste.

The human being dimension has two streams of discussion: first, there is a debate on health, food safety and security; second, sustainable food choices are represented as a new lifestyle through a growing media coverage on food innovations, new diets, recipes, menus, new retailing types or restaurants.

The three least discussed topics are sustainable certification and labeling, food costs and prices and animal welfare.

## **Norway**

In Norway, the top five topics attracting attention in the media are food industry, food trends, health, sustainable technology and innovations and diets and food patterns. In the topic of the food industry, there is a particularly strong focus on fish farming and the seafood industry, which are important to the Norwegian economy, as they contribute to a more sustainable economic development due to low CO<sub>2</sub> emissions. However, the debate refers to several challenges experienced in fish farming (e.g. spread of diseases and sea lice, use of antibiotics, animal welfare), which need to be addressed to secure sustainable growth. In addition, there is a great focus on various food trends, with a prevailing emphasis on vegan and vegetarian food, local short-travelled food and urban agriculture.

Health is another important topic, where the discussion centers on food healthiness, increase in food-caused lifestyle diseases and avoiding those by following healthier food diets (e.g. more plant-based diet).

Finally, a large discussion on meat consumption (for and against) is found within the topic of diets and food patterns. Despite a growing focus on vegetarian and vegan food, Norwegians continue to consume large quantities of meat.

The five least discussed topics in the Norwegian newspapers are packaging challenges, SDGs, sustainable certification and labeling, ethical aspects of sustainability, and food safety and security.

Of the four dimensions of sustainability, the economy dimension receives most attention given the popularity of two topics (food industry and sustainable technology and innovations), closely followed by the human being dimension and the nature dimension. However, there is little interest for the society dimension, despite some attention given to the political agenda for sustainable society and events promoting sustainable food.

## **Romania**

In the Romanian newspapers, most of the references to food sustainability are under the dimensions of the economy and human being, followed by the society dimension and the nature dimension.

Health and diets and food patterns are two of the top three topics. Two directions of the debate relate to both of these topics: first, unhealthy food habits (e.g. high intake of fats or sugars, preferring quantity over quality) and second, advice from experts (e.g. physicians, nutritionists) on changing those habits (e.g. reducing meat and increasing vegetable consumption, choosing quality foods). In addition, the high availability of unhealthy products is often discussed.

The topic of political agenda for sustainable society includes two main issues: political initiatives related to food sustainability (e.g. the food waste law, promoting local food producers, investigating the different quality standards of food) and criticism of existing initiatives (e.g. issuing the food waste law without the implementing norms).

Company strategies in the food industry are not mentioned very often, and when they are mentioned, it is a counterpoint to government strategies that are being criticized. This node includes environmental issues (e.g. reducing the use of resources or switching to sustainable inputs) and social issues (e.g. corporate social responsibility). Other themes here relate to unjustified political interventions in the market, effects of the economy on food security and local food production.

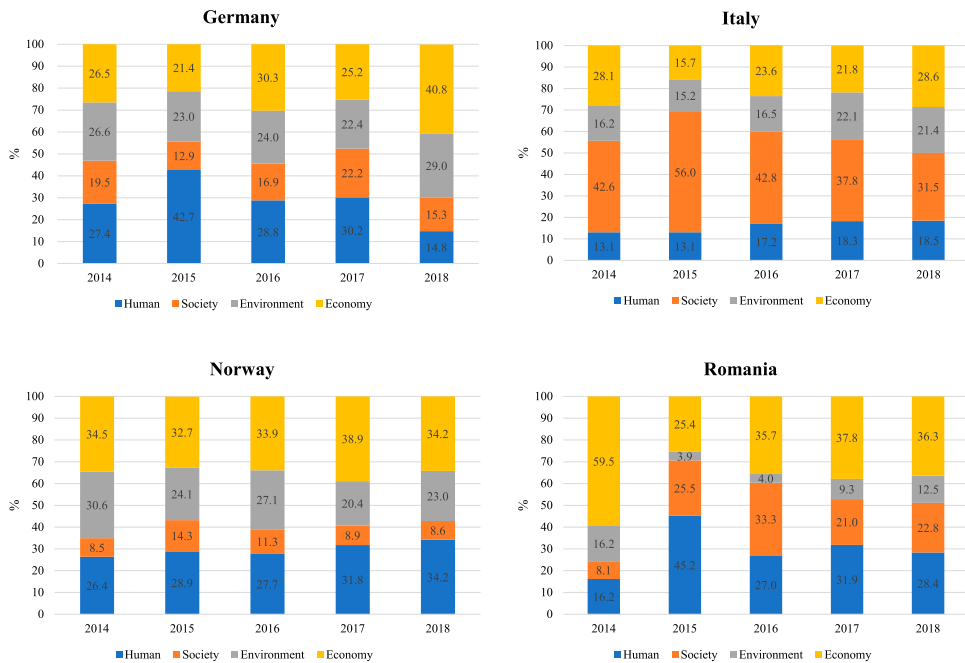
Another important topic is food costs and prices, with recurring references to limited economic resources of Romanian consumers. The need for education and information on food and nutrition is also acknowledged.

Some environmental concerns (increased pollution and waste, consumption patterns that negatively influence nature) receive some attention, while others (biodiversity, animal welfare and organic farming) receive almost no attention.

## **Development of the topics during the study period**

Figure 1 presents the evolution of the media debate for the four sustainability dimensions in the four countries.

For Germany, the analysis of the dimensions over time reveals that the largest shifts occur in the human being and economy dimensions. Particularly, the diets and food patterns topic drops from approximately 60% in 2014 to 7% in 2018. Under the economy dimension, the food industry topic undergoes the most significant changes, from approximately 30% in 2014 to 60% in 2018. This high percentage in the last year of the analysis is mostly driven by discussions about the takeover of Monsanto by the German multinational Bayer in 2018, which has been watched with concern by environmentalists, ecologically-oriented farmers and critical consumers (e.g. regarding biodiversity, controversial insecticides, the concentration of the agricultural input industry and the consequences for sustainability in the food sector). Articles on company strategies in the food industry also contribute to the increase in the economy dimension during the analyzed period, increasing from 4% in 2014 to 22% in 2018. In the nature dimension, references to organic farming drop



**Figure 1.** Development of Topics in the Four European Countries in Analyzed Newspapers from January 2014 to December 2018 – percent of total references per country and year (%).

strongly from 17% in 2014 to 4% in 2018, while the relative importance of the topics biodiversity and packaging challenges increase from 8% to 23% and 20%, respectively, in the study period. For the society dimension, we register strong fluctuations for the topic events promoting sustainable food because of specific events particularly relevant in some of the years in the study period (e.g. in 2017, there was much discussion about the introduction of a weekly veggie day in public canteens). The German federal election in 2017 is also very visible, with the topics political agenda for sustainable society, education and information increasing strongly.

For Italy, the society dimension remains of principal interest throughout the analyzed period. It reaches the greatest level of attention in 2015, driven by the Milan Expo. In the subsequent years, the ethical and cultural aspects of sustainability under the society dimension remain the most referenced, but their relative importance to the other dimensions of food sustainability decreases as references to the other dimensions increase. In fact, the economy dimension gradually attracts the media interest. It accounts for 28.6% of the discussed topics in 2018 because of growing attention on sustainable technology and innovations for developing more sustainable production and marketing systems in agribusiness. References to the nature and human being dimensions also increase to represent 21.4% and 18.5%, respectively, of the topics discussed in 2018. For the nature dimension, the emergence of the Fridays for Future movement in 2018 increases the awareness around the global environmental problems. Under the human being dimension, the increasing attention is on the topics food trends, diet and food patterns, and health, with a focus on sustainable food as a fashionable lifestyle and the relationship between unhealthy diets and non-communicable diseases.

For Norway, the trends for the different dimensions remain more or less the same over the five-year period. References to the economy dimension increase the most each year, except in 2018 when the human being dimension increases equally. The human being dimension has the second largest increase over the study period (except in 2014, when the increases in references to the nature dimension was higher than that of the human dimension), with the debate on the topics of health

and diets and food patterns growing almost each year. The nature dimension has varying degrees of importance across the five-year period. After occupying the second position in 2014 because of many discussions on animal welfare and biodiversity, it falls to being the third most referenced dimension in 2015 and remains there. The attention to the nature dimension in the media debate in Norway drops significantly in 2017 (due to the decrease in discussions on organic farming); however, it regains some attention in 2018, with the increased focus on environmental concerns. The society dimension is the least referenced one. This dimension has some increase in attention in 2015 and 2016, mainly because of the greater emphasis on the topics education and information, political agenda for sustainable society and events promoting sustainable food. Despite this increase, in 2018, references to this dimension return to the 2014 level.

For Romania, the economy dimension remains the most important over the study period, except in 2015, and this interest is mostly because of the references to sustainable company strategies in the food industry, the economic impact of these strategies and the high costs of food at the national level, with its implications on the quality of life. The human being dimension is the second in relative importance over the years, reaching its highest level in 2015 (45.2%). The most important topics in this dimension are health and food safety and security, which constantly grow over the five-year study period. The society dimension was the least important in 2014 (around 8%), but references to this dimension continued to increase in 2018, when it reached 22.8%, mostly due to an increasing interest in policy actions relating to sustainable certification and labeling food products. The nature dimension constantly attracts the lowest level of interest, reaching 12.5% in 2018.

### ***Actors participating in the public debate***

In Germany, the media debate on sustainable food actively involves all members of the society; food producers (large and small), retailers (small package-free shops and large supermarkets), politicians, individual consumers, environmental activists, associations of different types and researchers from various fields. Researchers represented in the media debate cover a wide variety of topics, such as climate research, biodiversity, plant ecology, consumer behavior and nutrition.

In Italy, a highly active actor is the Slow Food movement, with many articles reporting their events and initiatives organized during the analyzed period, particularly during the Milan Expo 2015. Italian food companies and retailers also actively participate in the debate on food sustainability by promoting their strategies (corporate social responsibility) and innovations (new eco-packaging solutions). Other actors are associations of food producers and farmers, professional experts on food and/or sustainability and researchers. These actors mostly discuss the importance of sustainability for the development and competitiveness of the Italian food system, new frontiers of research, and technological innovations. Opinion leaders, institutional representatives (e.g. Pope Francis) and celebrities also participate in the debate. These actors focus more on the social aspects of food sustainability and environmental concerns. Surprisingly, individual consumers and consumers' associations are not particularly active in the sustainable food debate. However, they are often mentioned as the main target of many public initiatives and business strategies.

The most active participants in the sustainable food debate in Norway are researchers, company representatives and representatives from non-governmental organisations (NGOs). The researchers participating in the debate come from a variety of disciplines (e.g. consumer behavior, agronomy, technology, climate research, marine science, biology, nutrition and medicine). In addition, a broad group of companies participate in the debate, for example, restaurants, food producers from various industries and retailers. The NGOs participating in the debate generally focus on discussion about climate, sustainability and animal welfare. Surprisingly, government authorities and politicians are not particularly active in the debate. These are mostly represented by food safety authorities, various ministries, innovation advisors, research council representatives and the biotechnology advisory board. Moreover, few farmers and consumers participate in the debate and Norwegian farmers' association is not very active.

For Romania, the most active debate actors are represented by two categories of professional experts (i.e. health and nutrition experts and economic and policy experts). Health and nutrition experts warn about the current food consumption patterns and provide advice on necessary changes, while economic and policy experts criticize policy decisions and actions, and offer predictions based on those decisions. Other important actors are the authority representatives (both national and local) who present their food-related actions and results. Generally, the economic and policy experts and the authorities oppose each other, generating considerable debate on topics related to health and policy agenda. Food companies and producer associations are also present, mostly discussing their efforts on sustainable development and requesting authorities' support. Consumers and NGO representatives are the actors least represented in the debate. Only one NGO stands out, appearing in several articles about the low quality of food products in Romania.

## Discussion

The analysis of the sustainable food discourse in the mainstream national newspapers in four European countries (Germany, Italy, Norway and Romania) offers important insights into the main issues related to food sustainability and provides a better understanding of how this concept is presented to the public.

To answer RQ1 and RQ4, the main issues represented in the sustainable food debate in the mainstream national newspapers were identified and compared across the four analyzed European countries. Similar to Spendrup et al. (2019) and Jabareen (2008), our results demonstrate the differences in the sustainable food debate between three developed European countries (Germany, Italy and Norway) and a less developed European country (Romania). In the developed countries, the reasons for choosing sustainable products (e.g. provenance, certification, alternative ways of production) are particularly framed, while in the less developed country, the focus is on prohibitively high prices for quality food, which is in line with previous research (Ibarrola-Rivas & Galicia, 2017; Sama et al., 2018). This can also explain the low level of attention to the nature dimension of food sustainability in Romania because sustainability-related issues come second after ensuring economic stability (Jabareen, 2008). Therefore, we argue that the media in developing countries mainly frames the sustainable food debate by highlighting the affordability of sustainable food, while long-term health-related and environmental benefits of sustainable food are the frames attracting more interest in the investigated developed countries.

The media discourse also reflects differences in food traditions and diets between the analyzed countries. While the media focus on meat consumption and its negative effects on health in Norway and Germany, the Italian media pays less attention to this issue, and is more focused on local food. The sustainable food discourse in Romania adopts another framing perspective, focusing on unhealthy food habits (e.g. high consumption of fats and sugars), high availability of low quality foods and lower food standards than in Western Europe, and the contribution of these factors to social injustice (Elhoushy, 2020; Spendrup et al., 2019). The low GDP and quality of life in Romania explain high consumption of affordable low-quality food, and overlooking the long-term consequences of such diet (e.g. health problems). In Italy, the experience of the Milan Expo 2015 can be framed as a good practice for promoting sustainable food, the result being in line with Schmidt et al. (2013) on the fact that powerful events generate a significant interest for the media, measured in the high number of published articles.

The cultural dimensions (Hofstede et al., 2005) may help to further explain the differences in how sustainable food is framed in the media discourse. We note a more positive attitude towards sustainable consumption in the public discourse in Germany, Italy and Norway, supporting Halder et al.'s (2020) claims that long-term oriented cultures are more inclined towards sustainable consumption. We also find that in the individualistic countries (Germany, Italy and Norway), wellbeing (e.g. choosing quality food and focusing on nutrition) occupies a central position in the discourse, in line with Sulmont-Rossé et al. (2019), while in the collectivist society of Romania, the focus is on



public health and how it is affected by current food choices. Previous research (Gregory–Smith et al., 2017; White et al., 2019) argues that collectivist societies have a higher preference for sustainable food; however, we do not find support for these findings in Romania, which might be explained by its challenging socioeconomic conditions.

The identified differences between the analyzed countries indicate that businesses and policy makers should adjust the way how they frame their media and communication strategies related to food sustainability to reflect the socioeconomic and cultural context of the country, so that they suit the audience's level of development and understanding.

Despite the differences between the media discourses on sustainable food, we identify some basis for a common understanding of sustainable food in the media discourse across the analyzed countries. The debate in all four countries refers to healthy food options, which means consuming food with better nutritional characteristics, lower meat content and reduced artificial additives. Moreover, the discussion on local food and sustainable food certification is present in all the analyzed countries. The involvement of the food industry in developing sustainable technologies (including the economic aspects of innovations) and providing sustainable food for the society is another important and increasing trend in the debate in the four countries, the same as the political strategies providing solutions for more affordable and available sustainable food. The events and educational initiatives aiming to increase public knowledge about sustainable food are also getting a growing coverage in the analyzed period. As discussed by Diprose et al. (2018) and Atanasova (2019), using the same description of sustainable food in the media discourse contributes to building a common understanding of sustainable food and raising public awareness of this topic. Identifying the prevalent patterns in consumers' common understanding of the sustainable food concept can therefore serve as a powerful communication tool for marketers and policymakers (Reilly & Larya, 2018). By keeping updated with the national tendencies in food consumption framing (Broadbent et al., 2016), local and national food strategies could be constantly refined, therefore ensuring long-term relevance for the consumers. As media coverage of a topic is observed to be a proxy for the general level of public attention (Barkemeyer et al., 2018), participating in the debate on sustainable food consumption and providing solutions and support for local production, food safety and technological innovations should be considered by the public authorities as a useful and accessible mean of communicating to the mass of consumers and responding to their concerns. Since the need for education on sustainable food consumption has been observed in all four countries, national campaigns for education on sustainable consumption promoted through the newspapers may be considered on the public agendas. The identified communication gaps, as well as the actors missing (public authorities, NGOs and individual consumers) in the debate and the main concerns in relation to food (its nutritional quality, health benefits, provenance and even quantity), addressed in the national media in each country should be considered as starting points for developing new food policies and communication campaigns by the public authorities. For example, sustainable individual and business initiatives such as reducing the use of packaging, support for local producers, organic production and animal welfare should be encouraged and placed as priorities at a country level.

To answer RQ2, we analyzed the evolution of the sustainable food debate in the study period. As a result, we note an increase in both the number of articles and a variety of topics. As the media tends to present topics that confirm readers' existing expectations and beliefs (Summ & Volpers, 2016; White et al., 2019), we conclude that public interest in sustainable food is growing, as also demonstrated in Bellotti and Panzone (2016). The increase in market share and expenditure on organic food in all the analyzed countries (Diprose et al., 2018; Fiala et al., 2021; FiBL, 2020) can also be related to the extensive media debate on sustainable food.

Despite the overall increasing relevance of this topic, we find considerable differences in the development of the debate across the analyzed countries. While we identify the prevalence of the society dimension in Italy over the entire study period, the human being and economy dimensions dominate in Germany and Norway. There has also been a recent increase in the debate under the nature dimension in both countries. For Romania, the most remarkable change is the increasing

presence of topics related to nature and society, which indicates a growing interest in long-term issues, along with the pressing short-term ones. Therefore, we conclude that the general interest in food sustainability is increasing across different countries, but the type of development is influenced by a country's economic and cultural profile.

To address RQ3, we can conclude that the media plays a role as an arena for public debate by offering multiple actors the opportunity to shape public opinion and consumer behavior (Gregory-Smith et al., 2017; Sama et al., 2018), and our findings demonstrate that a variety of actors have seized this opportunity in all four countries. Several actors (e.g. researchers, experts, local farmers and chefs) contribute to the debate by sharing their knowledge on sustainable food, fulfilling the media's role to disseminate knowledge (Carvalho, 2007). However, in all four countries, we observe a call for more consumer education on sustainable food.

## Conclusion

This study contributes to the literature by highlighting the development of the media debate on sustainable food. By investigating the discourse on sustainable food in major national newspapers in four European countries, with different stages of development and with different cultural backgrounds, over the period of five years, we provide an overview of the principal issues related to the sustainable food concept from the longitudinal perspective and identify which dimensions of sustainability are associated with sustainable food in different countries. This adds to the understanding of how the sustainable food concept has developed in Europe over time and which factors influence its development (e.g. socioeconomic and cultural context). Further, we identify the actors participating in the media debate in each country, thus providing an overview of the main contributors to the process of forming the sustainable food concept in the public consciousness.

Stakeholders in the food industry (e.g. policymakers, businesses, producer associations, consumers associations) can utilize the study results as a source of information for developing future measures and policies to promote sustainable food consumption. For instance, our findings can help marketers to present the key aspects of their food products based on identified country differences, e.g. emphasize "organic" or "meat free" in Germany and Norway, "local" or "social" in Italy, and "safe" in Romania. Such targeted marketing can help businesses to address the main concerns in each country and build better consumer-targeted marketing strategies at the national and international levels.

However, we acknowledge several limitations to be addressed by future research. First, we analyzed the media discourse in only four European countries. Despite the thorough selection process and our efforts to account for socioeconomic and cultural variations, it might be interesting to extend the current research to other European countries and other continents. Second, because of the high level of comprehensiveness in our qualitative analysis, we focused on only three major newspapers in each country. In addition, we did not include social media sources and further research may consider extending the scope of the analysis by including more media sources. Third, the media discourse is only one of the factors that influence sustainable food consumption, and future research should consider other factors such as food policy and regulations. Fourth, despite the importance of food for achieving the SDGs (Sala et al. 2017; Vermeir et al., 2020), future research can focus on other domains of sustainable consumption (e.g. energy, mobility, recycling). Finally, the main purpose of the current study is to grasp the main trends in the media coverage of sustainable food consumption in a qualitative analysis. We do not address the relationship between mass media and sustainable food consumption, which the future studies are invited to explore, by applying a quantitative research approach that can also explain media discourse in relation to the different national cultural dimensions and socio-economic contexts.

## Note

1. The number of extracted articles in Italy increased from 192 in 2014 to 324 in 2015. The attention towards food sustainability decreased after the Expo (225 and 238 articles in 2016 and 2017 respectively), but then it has been refueled by the Future for Friday movement in 2018 with 346 extracted articles.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This work is part of the research project “Towards Sustainable Food and Drink Choices among European Young Adults: Drivers, Barriers and Strategic implications” (SUSCHOICE) (ID 66). SUSCHOICE is a transnational project and part of the SUSFOOD2 ERA-Net Cofund on Sustainable Food production and consumption (<https://sus-food-db-era.net>) with funding provided by national sources (Ministero dell’Università e della Ricerca in Italy, Norges forskningsråd in Norway, FORMAS in Sweden, Bundesanstalt für Landwirtschaft und Ernährung in Germany and Unitatea Executivă pentru Finanțarea Învățământului Superior, a Cercetării, Dezvoltării și Inovării in Romania) and co-funding by the European Union’s Horizon 2020 research and innovation programme under grant agreement No 727473. This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation (CCDI-UEFISCDI) within PNCDI III, funding contract number 42/2018.

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Appendix

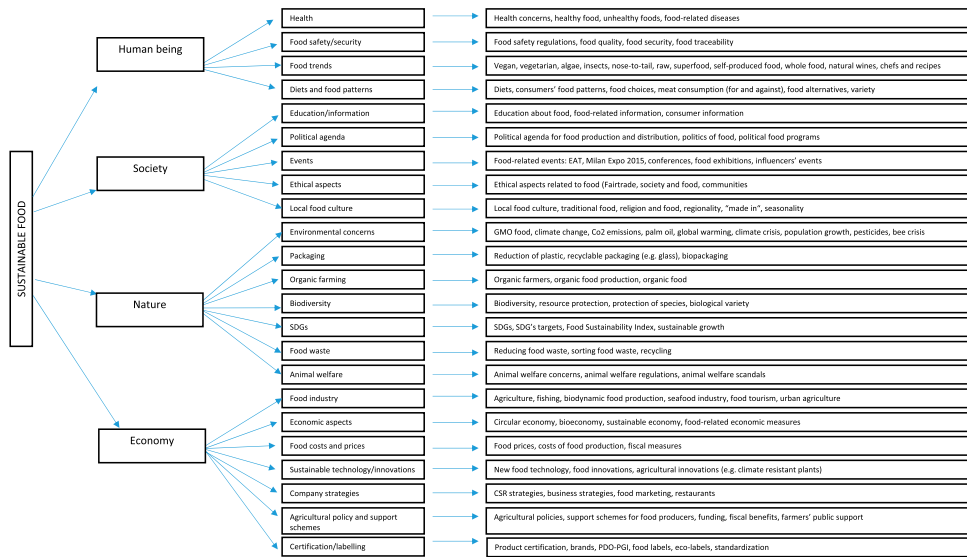


Figure A1. Coding tree.

Table A1. Search words used in each national language to retrieve newspaper articles on sustainable food.

Search words	Germany	Italy	Norway	Romania
Sustainability	Nachhaltigkeit*	sostenibil*	bærekraft*	sustenab*
Sustainable	nachhaltig*	sostenibil*	bærekraftig*	sust*
Food	Lebensmittel	aliment*	mat	aliment*
	Essen	cib*		hrană
	Nahrungsmittel	mangiare		mâncare

Notes: \*All words containing the searched particle were analyzed for possible selection.

For Romania, because the search of "sustenab," "sust," "alimente," "hrană," "mâncare" revealed several articles related to food, including healthy food, bio/eco/green food, traditional, local food, so these particular phrases were not added to the search table in order to exclude overlapping. The searches were made using both diacritics and without them, to expand the results. For Italy, results have been cleaned from the figurative meanings of the words "aliment\*" and "sostenibil\*" in order to exclude all articles that were not related to the subject of sustainable food.