

# Promoting sustainable practice through video-based social media: an exploration of food-oriented R-strategies

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Sustainable food consumption is an increasingly urgent issue in academic and public discourse to explore novel approaches to reduce its impact. From planning to disposal, food consumption behaviors influence the amount of waste at the domestic level. The study aims to explore and demonstrate the use of video-based social media and a community leader in promoting sustainable practices, proposing R-strategies for food sustainability, and identifying discourses that can be integrated into everyday terminology. In this study, narratives of sustainable food consumption from chef Şemsa Denizsel's "Artan Mutfağı" videos are investigated through directed content analysis to reveal food-related R-strategies. The study identifies Repurpose, Rethink, Reuse, Reduce, Refine, Refuse, Reproduce, Recycle material, and Repair as R-strategies for sustainable food consumption. The study suggests that video-based social media can be an effective tool for promoting sustainable practices and that community leaders can influence behavior change through positive reinforcement and emphasizing the multisensory characteristics of food.

**Keywords:** *design for sustainability; R-strategies; social media; domestic food waste*

## 1 Introduction

Even when food is discarded, it can become part of the planet due to its organic nature. However, during food production, processing, packaging, transportation, sale, preparation, and disposal stages, land, water, and air resources are affected and energy is wasted. In other words, the loss of nutritious food leads not only to nutritional deficiency but also causes the depletion of global resources. According to FAO's (2021) study, 38% of the global food system's total energy consumption is expended on producing lost or wasted food. Therefore, the measures taken on the subject of food waste are also included in many national and global strategy plans. FAO (2021) reports that 61% of all food waste occurs in homes. The study claims that households in Turkey waste nearly 8 million tons



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of food each year. These highlight the importance of adapting global and national plans at the individual and household levels.

Previous studies have highlighted the significance of consumer practice and measuring food waste at the consumer level (do Canto et al., 2021; Schanes et al., 2018; Tamasiga et al., 2022). Consumer behaviour has a significant impact on domestic food waste (Farr-Wharton et al., 2014). In circumstances where they can afford to waste food, consumers tend to discard edible food on purpose (Borrello et al., 2017). Consumer practice is critical to understanding food waste behaviours with consideration of psychological, social, and cultural aspects. Despite the environmental impact it has, domestic food waste is resistant to behavior-change initiatives (Davison et al., 2013). Therefore, there is a need to eliminate this resistance for achieving food waste reduction in households.

Governments are striving to address environmental issues, including food loss, by searching for ways to encourage people to adopt pro-environmental behaviours and a more sustainable lifestyle. As stated by Davison et al. (2013), it is a great challenge to persuade people to change their lifestyles and make them practise sustainable behaviours such as reducing food waste. Reducing food waste can be achieved by promoting circular consumption. Consumers must change their behaviour and consumption patterns to fully realize a circular economic agenda (Mondéjar-Jiménez et al., 2016). To achieve this goal, it is important to determine each stage of food consumption and user intervention in these stages throughout the process.

In terms of domestic consumption's circularity, R-strategies play a vital role in tackling waste reduction across diverse domains like heating, water usage, and the alike. In this sense, considering R-strategies along the food consumption process regarding consumer behaviour is crucial to addressing the problem of food waste. Previous studies suggested that food waste is not related to a single behaviour but to multiple behaviours from pre-purchase to storage (Farr-Wharton et al., 2014; Mattila et al., 2019; Pelt et al., 2020; Schanes et al., 2018). Different behaviour patterns determine the amount of food waste due to various activities along the consumption process (Mondéjar-Jiménez et al., 2016; Schanes et al., 2018; Quested et al., 2013). Creating awareness about food waste and making consumers reflect on their unsustainable consumption habits are essential to facilitating a change. Information is the main source for encouraging people to behave more sustainably, as it evokes either concern or hope for change by emphasising the reasons for the change desired (Pelt et al., 2020). When people understand the environmental and social impacts of their actions, they tend to change their behaviour. Davison et al. (2013) emphasise the necessity of acceptable information, adoptable skills, and motivation for consumers to consider a change in their behaviours. Therefore, how information is conveyed and how skills are introduced are important to initiating sustainable food consumption.

Product design is one of the channels which conveys information and introduces new skills to consumers; therefore, it can be considered a facilitator of behaviour change. Current design interventions mainly focus on physical objects such as intelligent fridges and interfaces, but also "...social innovation concepts aimed at raising awareness and providing information and suggestions for how to avoid food waste have been emerging." (Hebrok & Boks, 2017). Product design is not limited to physical concepts. Wastling et al. (2018) emphasise the effectiveness of digital strategies beyond the physical aspects of product design. Nowadays, people tend to get separated from physical objects and more frequently interact with digital or virtual ones. Furthermore, Bölükbaş et al. (2021)

state that there is a constant change in consumption patterns due to the influence of social media and mass media, which enable the continuous synthesis and spread of information. Jenkins et al. (2022) stated the positive impact of social media on "raising awareness or contributing to consumer food waste reduction" that enables behaviour change.

Food waste-related activities require more visual clues than written content. Moskell & Turner (2021) suggest that video media is "well-suited to provoke changes in the antecedents of pro-environmental behaviour as compared to written information alone" by helping people visualise the potential solutions. As stated by Hou et al. (2022), this makes YouTube a useful medium for "visual appeals and informational awareness, e.g., teaching how to cook with leftovers." Moreover, Wharton et al. (2021) stated that podcasts and videos are identified as the most effective by consumers with regard to reducing food waste. When people demonstrate recipes or directly present strategies to reduce food waste in video media, consumers find these forms of information relatable and feel encouraged to participate in the activities to which they are introduced. Bölükbaş et al. (2021) also state that "individuals can be made aware of food waste and sustainability" through video media, considering the influence of cooking shows on the viewers. Despite the potential of social media for food waste reduction as a facilitator of behaviour change, recent studies (Hou et al., 2022; Jenkins et al., 2022) have stated the lack of research on this topic.

Taking everything into consideration, the objectives of this study are:

- to demonstrate the role of video-based social media as a communication tool to promote sustainable practice.
- to propose R-strategies that can contribute to food sustainability.
- to detect food sustainability discourses that can be included in everyday terminology.
- to explore the role of a leading figure in the community in triggering behaviour change to support sustainable practice in the kitchen.

## **2 Methodology**

The study aimed to investigate narratives of sustainable food consumption through directed content analysis. This method uses existing theory or prior research to identify key concepts or variables for the initial coding scheme, focuses on research questions, identifies factors of relevance, and categorizes all instances of a phenomenon, including subcategories for future analysis (Hsieh & Shannon, 2005). The case consists of two playlists titled "Artan Mutfağı / Leftover Cuisine," which are presented by celebrity chef Şemsa Denizsel in 2022. Her culinary philosophy is firmly rooted in Istanbul and Aegean traditions, with a focus on simplicity and sustainability (Şemsa Denizsel - Cooks Grove Turkey, n.d.). With her recipes, she draws attention to the use of local and geographical products and encourages cooking at home. The first playlist consists of 17 cooking videos titled "Artan Mutfağı" that the chef has uploaded to her own YouTube channel to raise awareness about domestic food waste. In these videos, the chef creates new recipes based on the scenario that she has leftovers from the dishes she previously shared. The second playlist on the HSBC Türkiye Channel contains 12 videos titled "Artan Mutfağı with Şemsa Denizsel." This playlist is shared by HSBC, an internationally operating financial institution, as part of a social responsibility project that promotes food sustainability (HSBC Türkiye, 2022). Therefore, these same-themed playlists are considered suitable for analysis regarding food consumption to reveal underlying themes of sustainability.

Although YouTube is the main broadcasting platform for the videos; short clips and images created from the videos were also posted on the chef's and HSBC Türkiye's Instagram accounts at intervals to increase interaction. The broadcast dates, durations, and numbers of views, likes, and comments on the YouTube channels of the examined videos are given in Table 1 for reference.

Table 1. Detailed data of videos collected in April 2023 from chef Şemsa Denizsel's and HSBC Türkiye's YouTube accounts.

No	Date (D/M/Y)	Time	Recipe Name (Translation to English)	Views	Likes	Comments
1	03.02.2022	06:15	Chard Crepe	10.334	408	28
2	24/02/2022	04:41	Vegetable Soup with Dill	5.550	234	8
3	10.03.2022	07:46	Dried Bean Paste	8.028	375	33
4	24/03/2022	09:04	Spangle	9.887	362	16
5	07.04.2022	06:59	Pepper Beef Noodles	7.222	306	19
6	21/04/2022	07:10	Donut Crunch & Peanut Cream	5.399	225	15
7	05.05.2022	08:47	Quick pizza	7.791	304	19
8	19/05/2022	08:47	Lamb with Eggplant	3.588	128	6
9	02.06.2022	08:04	Steak Roll	4.830	196	20
10	16/06/2022	06:30	Potato Sardines Rösti	4.083	145	6
11	29/09/2022	06:17	Almond Nectarine Crumble	3.389	185	5
12	06.10.2022	08:01	Butter Bread Dessert	4.347	198	12
13	13/10/2022	08:33	Cracked Bulgur & Shrimp	3.362	132	9
14	04.11.2022	09:07	Bonito Balls	3.065	144	7
15	10.11.2022	07:48	Chicken Papara	3.588	204	12
16	18/11/2022	07:23	Rice with Vegetables and Braised meat	4.392	210	14
17	01.12.2022	09:34	Pasta in Oven	5.801	226	13
1	17/02/2022	05:55	Bread Dessert with Dried Fruit in the Oven	438	171	0
2	03.03.2022	04:49	Celery Chicken Salad	401	180	0
3	17/03/2022	04:40	Sage Butter Gnocchi	350	255	0
4	31/03/2022	04:57	Lamb Pie	267	90	0
5	14/04/2022	03:52	Oven Pasta with Herb Cheese	333	148	0
6	28/04/2022	05:47	Fruit Cup	206	115	0
7	12.05.2022	04:58	Seasoned Fish Meatball Stew	174	60	0
8	26/05/2022	05:09	Herbed Elbasan Pan	221	119	0
9	07.06.2022	04:00	Summer Salad	254	138	0
10	09.06.2022	03:59	Vegetable Patty with Bulgur	254	166	0
11	23/06/2022	02:32	Turkish Cheese Fondue	183	72	0
12	29/09/2022	08:53	Breaded Spoon Dessert	683	41	0

The campaign's name, "Artan Mutfağı," is found to be an essential element to examine, as it provides a good overview of the chef's approach. The polysemy of the word "artan" in Turkish points to the transformation of food, which is the object of the project. In each recipe video, the chef describes that the remaining food can be turned into another meal by increasing or advancing. This action is visualised through the meanings of the word "artan" in Figure 1. The screenshots in Figure 1

demonstrate how the food's semantic transformation from the "odd" state to the "upgraded" state is followed by a visual transformation.

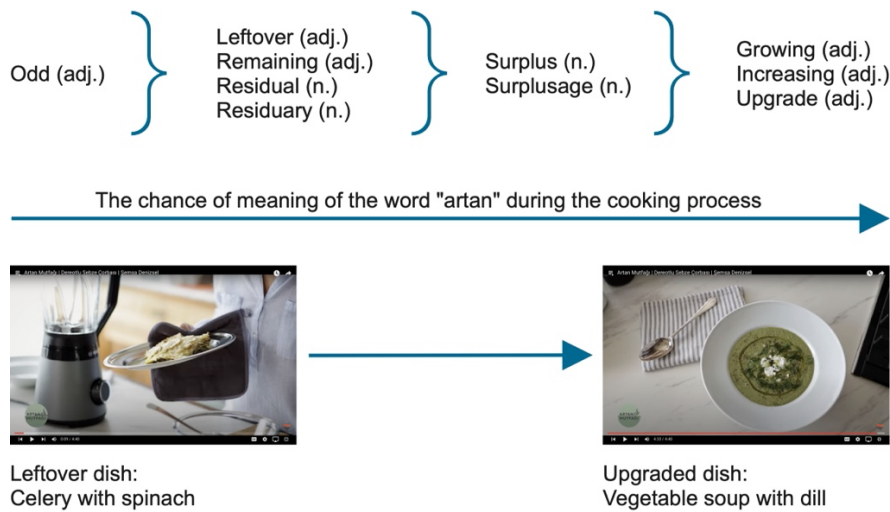


Figure 1. The chance of meaning of the word “artan” during the cooking process. Image Source: Şemsa Denizsel YouTube Channel.

Reike et al. (2018) conducted a thorough literature review to examine the R-strategy filter, which served as the study's starting point. The definitions of the 10 R-strategies mentioned in the existing literature are reviewed, and new definitions are developed for their adaptation to food consumption. The verbal and visual data are analysed through these new definitions. The outcome of the analysis is employed to revise the definitions, considering how R-strategies can serve food sustainability. Figure 2 illustrates the methodology for analyzing R-strategies. The content analysis revealed that strategies like Refuse, Reduce, Reuse, Repair, Repurpose, and Recycle, can also be applied to food products. While some R-strategies (Refurbish, Remanufacture, Recover, Re-mine) found in the literature are not applicable to food sustainability, new R-strategies that may be food-specific (Rethink, Refine, Reproduce) are proposed.

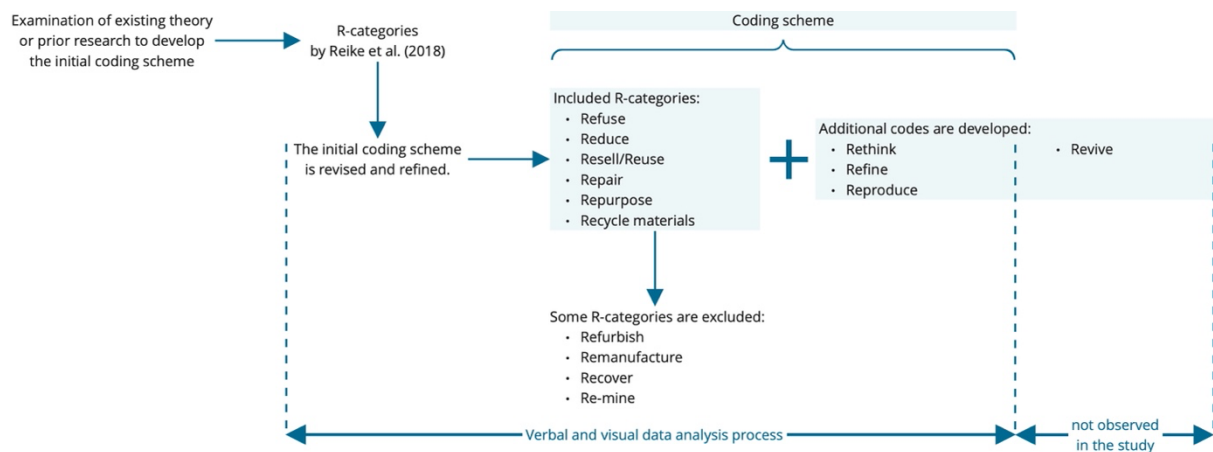


Figure 2. The steps of content analysis.

### 3 Results

YouTube, as a video-based social media platform, has the potential to encourage people to adopt sustainable practices through the narratives of R-strategies that contribute to reducing food waste. Following directed content analysis, R-strategies (Reike et al., 2018) and proposed food-oriented R-strategies are presented in Table 2, along with definitions and quotes from the chef.

Table 2. Definitions of R-strategies in the existing literature and the definitions suggested in this study with quotes from video analysis.

R-Strategy	Definition	Revised R-Strategy	Food-Oriented Definition	Related Quotes of Chef
Refuse	<ul style="list-style-type: none"> <li>*buy less or use less for any product that reduces waste</li> <li>*shifting to a post-material lifestyle</li> <li>*refuse packaging waste and shopping bags</li> <li>*avoid harmful materials, trash, and virgin materials</li> </ul>		Refusal to consume more energy, food, packaging than necessary	<p>"We encourage not using packaged products."</p> <p>Act: She continues to use the previous container without washing it.</p>
Reduce	<ul style="list-style-type: none"> <li>*instead of disposing of garbage, eliminating waste generation</li> <li>*utilising items less often, more carefully, and longer, or repairing them to extend their life</li> <li>*pooling and sharing items in the "sharing economy"</li> <li>*emphasising "dematerialization" or "less material per unit" in product design</li> </ul>		Reducing consumption, not wasting, evaluating instead of throwing away. Emphasis on using rather than discarding. (indirectly reducing waste)	<p>"I like to do things like this with leftover cheese."</p> <p>"It would be a shame not to use it when I have such a wonderful broth available."</p>
Resell/Reuse	<ul style="list-style-type: none"> <li>*bring products back into the economy after initial use</li> <li>*refers to a second user of a product that barely needs any adaptations and functions, with the same purpose, without refurbishing, rework, or repair</li> <li>*adaptation of a product after minor restoration</li> <li>*favouring second-hand items</li> </ul>	Reuse	Reuse of existing food by utilising the originality of the material. (e.g. freeze and reuse)	<p>"If you put it in a jar, you can use it next time very easily."</p> <p>"You can make an omelet from the remaining egg whites, or you can use these whites instead of whole eggs when you are making meatballs."</p> <p>"I made a date on it. I have boiled chickpeas in the deep freeze from last February."</p>
Repair	<ul style="list-style-type: none"> <li>*bringing back to working order</li> <li>*making it as good as new</li> <li>*recreating its original function after minor</li> </ul>		Extending the useful life of a food that is on the verge of deterioration. (e.g. restoring the freshness of	"I will place these (breads) in the oven in order to refresh them."

defects  
\*replacing broken parts

shrivelled carrots by  
soaking them in  
water.)

Refurbish	<p>*an "upgrade" of the product as a whole (the overall structure of a multi-component product remains the same) *turning the product 'up to the state-of-art' with the use of newer more advanced parts</p>	N/A	N/A
Remanufacture	<p>*when the whole structure of a multi-component product is disassembled, checked, cleaned, and if needed, replaced or fixed (fully consist of recycled components) *reconditioning, reprocessing or restoration</p>	N/A	N/A
Repurpose	<p>*'rethink' or 'fashion upgrading' or 'part reuse' *Reusing discarded items or components modified for another application gives the material gets a new life cycle.</p>	<p>The transformation of food by gaining a different feature from its current state.(e.g. the main dish turns into dessert or human food turns into animal food.)</p>	<p>"What remains of yesterday can be transformed into something entirely new if care is taken." "Applicable to all vegetable dishes. The leftovers may not fill you up, but it turns into a very good soup." "You can prepare a mortar from a completely different dish, something layered like tomato and eggplant, and make such a wonderful steak roll."</p>
Recycle materials	<p>*utilised for any kind of avoiding the usage of newly mined materials or resources *'any recovery for any purpose' *do not preserve the structure of the original product and can be re-utilized elsewhere as "secondary" materials</p>	<p>The use of food that cannot be used for its original purpose for a different purpose. (e.g. turning petrified bread into flour or making soup from soured yoghurt.)</p>	<p>"I'm getting the inside of the bread. Obviously, I will not toss them away...I'll simply dry them and use them for another time as breadcrumbs." "I'm going to throw the carcass in the oven and get a nice chicken broth from it."</p>

Recover (energy)	<ul style="list-style-type: none"> <li>*gathering end-of-life items, disassembling, classifying, and cleaning for utilisation</li> <li>*extracting components from end-of-life composites</li> <li>*energy recovery from waste streams</li> </ul>	N/A	N/A
Re-mine	<ul style="list-style-type: none"> <li>*landfill mining or urban mining</li> <li>*the retrieval of materials after the landfilling phase.</li> <li>*Focusing on the most valuable parts, 'cannibalisation'</li> </ul>	N/A	N/A
	Rethink	To encourage consideration of current behaviours and practices that have been or can be implemented.	<p>"Just because I'm using something from yesterday doesn't mean I'll sacrifice taste."</p> <p>"If you let your ingredient guide you, the result may be better than you ever expected."</p> <p>"Thinking of the ingredient we are accustomed to in an unfamiliar way..."</p>
	Refine	Improving the quality of food by refreshing it to be good enough to be presented to another person	<p>"Who would say that this is actually a leftover meal from yesterday. You have a result that is pleasing to the eye and the palate, even for distinguished guests."</p> <p>"Refreshing flavor does not mean that the food is unsavory, on the contrary, I don't want to waste it because they are very tasty."</p>
	Reproduce	To enhance the quantity of food by adding diverse ingredients.	<p>"There is such a thing as feeding a table full of people with stale bread."</p> <p>"Even though the leftover is maybe enough for one or two people, I plan to feed four people with this."</p>



Following the food-related definitions outlined in Table 2, a video-based analysis was conducted, and the resulting number of R-strategies included in both YouTube channels is presented in Table 3. The adopted strategies are as follows:

- Because of the nature of the material, Repurpose strategy can be applied to food. For instance, cooked vegetables in solid form can be easily transformed into liquid by passing them through a blender. The new fluid material can be used as a new ingredient in a different dish and enters a new cycle. It is adopted in almost every video, as this is the strategy that most overlaps with "Artan Mutfağı"s transformation idea.
- On the other hand, Rethink is typically used to signify potential transformations and encourage practitioners in this regard. This strategy is also consistent with the chef's role in providing leadership and direction. In collaboration with HSBC Türkiye, the Rethink strategy is evident in all of the videos through the use of phrases that become slogans.
- Similar to Repurpose, Reuse is a strategy related to the nature of the material. In contrast, it aims to reuse food without altering its original structure. Refrozen or dried foods are examples of this. As the meals made by the chef on her channel represent her habits better, it can be seen that the Reuse strategy has been adopted more in her channel than on the HSBC Türkiye Channel.
- Reduce in the context of sustenance, aims to reduce surplus output. At this juncture, the emphasis can be on utilizing all edible parts of the product and preventing waste. For instance, beef broth can be made by simmering bones with marrow and extracting edible elements.
- One of the newly proposed R-strategies, Refine, refers to the presentation of the completed product as a new product without referencing its previous meanings or consumption cycle. The visual distinction between beginning and end is another element that supports this strategy. In its new cycle, food should be good enough to share with guests for a meal.
- The Refuse strategy seeks to prevent excessive consumption. It focuses primarily on preventing excessive consumption by requiring precautions to be taken before the purchasing phase.
- Reproduce, which is one of the recommended food-specific strategies, refers to increasing the available quantity with various additions or increasing the food by reducing the portions.
- Recycle materials suggests using existing materials instead of new ones. At this stage, the material has been deformed to the point where it can no longer perform its intended function. This deformation may manifest in a food product's texture, taste, or smell. Drying moist bread in the oven to make croutons or making soup from sour yogurt can be given as examples.
- Repair encompasses actions designed to restore food and return it to its original purpose. Physical or chemical intervention can restore food that has lost its freshness. Refreshing root vegetables such as carrots and radishes by soaking them in cold water is an example of this strategy.

Strategies Refurbish, Remanufacture, Recover (energy), and Re-mine were found to be inapplicable for food. No quotations referencing these were found in the cases.

Table 3. The frequency of R-strategies mentioned in videos

Video	Refuse	Reduce	Reuse	Repair	Refurbish	Remanufacture	Repurpose	Recycle materials	Recover (energy)	Re-mine	Rethink	Refine	Reproduce	Total R-Strategies
No.1	1	1					1				2	2	1	8
No.2							2					2		4
No.3		2					4				2			8
No.4		3	4				3					1		11
No.5			2								2		1	5
No.6	1	1	1	1										4
No.7	1	1	4	2			2	1						11
No.8			2											2
No.9		1					2				1	3		7
No.10	1		1	1			1				2	1		7
No.11			1				3				3			7
No.12	2	1	3				2	1			2	1		12
No.13	1						2							3
No.14		2	2				2	1			1			8
No.15	1	2	5	1			2	1			3	2		17
No.16			1											1
No.17		3	5				1				2			11
No.1	2	1	2				3	1			4		1	14
No.2		1					1	2			1		1	6
No.3							3				2			5
No.4		1	1				2				1			5
No.5			2				3				2			7
No.6	2						1				4		1	8
No.7			2				2				1		1	6
No.8		2	2				1				2			7
No.9		2					3				4			9
No.10							3				3			6
No.11			1				2				1			4
No.12		1	1				2				1	1	3	9
	12	25	42	5	0	0	53	7	0	0	46	13	9	212

The narrative analysis also revealed that sustainable practices related to food waste had some connections with cooking traditions in Turkey—or traditional recipes.

*“Those practices are ingrained in our cooking tradition.”*

*“Such as ‘papara’ and ‘tirit’—traditional recipes of Anatolia.”*

Culture is revealed as another factor that influences how people perform sustainable behaviours to reduce food waste.

As a community leader, the chef encourages the viewers to perform sustainable practices striving to convince them that it is easy to manage leftover food.

*“Inspired by you, I made a crepe with leftover pesto sauce.” (User comment)*

*“You can make biscotti by slicing the cookie and drying it in the oven or make salty pastries by adding oil, cheese, and yogurt.” (Reply to user comment by another user)*

Besides, it is observed that viewers perform similar practices to reduce food waste share their experiences and convey their knowledge in the YouTube comments section to the members of the online community.

## **4 Discussion**

Despite the need for an investigation of behaviour patterns in each phase throughout the food consumption process, R-strategies regarding the circularity of food resources (see. Rood & Kishna, 2019) mainly focus on the industrial production level. In this study, the R-strategies suggested by Reike et al. (2018) on product and material were re-evaluated in terms of domestic food consumption. Many of the R-strategies they pioneered proved to apply to the circularity of food waste as well. Rood and Kishna’s (2019) study excludes certain strategies, such as Reuse, Repair, Refurbish, Remanufacture, Recover (energy), and Re-mine for food or biomass. This study supports that Refurbish, Remanufacture, Recover (energy), and Re-mine do not apply to food; however, we suggest that Reuse and Repair can be included in food waste terminology as well. Existing R-strategies in the literature were inadequate in certain food-specific cases. Therefore, under-defined R-strategies concerning food consumption are explored in this study to establish new ones to reduce food waste on a domestic scale—abandoning the limitations of ‘carry-over’ of knowledge between waste-reduction activities as stated by Quested et al. (2013). For these particular cases, new food-specific R-strategies were proposed, such as Rethink, Refine, and Reproduce. Another potential R-strategy not covered in the case study is Revive. This potential strategy could serve to compost the food that will not be evaluated for human consumption.

The study demonstrates the function of video-based social media as a facilitator for promoting sustainable practice. YouTube provides users with the opportunity to acquire information and skills for sustainable practice in an online community when they find the content digestible. By reaching a large number of people, encouraging the sharing of information, and influencing behavior change, social media can be an effective communication tool for reducing food waste (Jenkins et al, 2021). The study provided an example by proposing sustainability narratives that seek to alter households' unsustainable food consumption. do Canto et al. (2021) propose that the path to circular food behaviors may begin with minor changes in existing practices (linear behaviors) and progress through more transformative practices (transitional behaviors) before arriving at circular practices (circular behaviors). In a similar vein, Stefan et al. (2013) argue that initiatives to reduce consumer food waste should concentrate on altering customers' daily routines rather than attempting to alter their intentions or attitudes. Being a part of an online community can influence users' daily routines as they interact with others to share sustainable food consumption knowledge and skills and comment on videos in the comment section. However, Hebrok & Boks (2017) asserted that implementing knowledge requires commitment, time, and effort, which may not be feasible for individuals in their

daily lives and may only appeal to consumers seeking to reduce waste. Adapting positive discourse to everyday language through a recurrent communication channel such as social media can be a crucial step in this direction.

The role of a community leader in triggering behaviour change to support sustainable practices for reducing food waste is explored. Aschemann-Witzel et al. (2017) point out the importance of focusing on the positive aspects of valuing and using food in a pleasant and enjoyable way, encouraging conscious choice and supporting consumer abilities, or altering the choice context to provide opportunities. In her narratives, the chef also endeavors to influence the audience by employing positive reinforcements as opposed to negative rhetoric. These positive reinforcements, such as "Please view this as an opportunity to evaluate your performance," refer to the R-strategy—Rethink. "Let's continue your 'artan' cuisine," which alludes to the word's "growing" connotation, is a repeated slogan that emphasizes the possibility of leftovers as an upgraded dish. The chef's use of the multiple meanings of the word "artan" is an attempt to incorporate food sustainability discourses into everyday terminology. Furthermore, the phrase propositions that might be included in culinary terminology to evaluate food waste can be disseminated through the media by influential chefs.

In addition to R-strategies, the chef's statements draw attention to the multisensory characteristics of the final dish. According to Närvänen et al. (2018), social media's current technological limitations prevent the direct transmission of tastes and smells of food, restricting the creation of sensory experiences and meanings, which led some consumers to emphasize the good scents and tastes in their posts of food prepared from leftovers. To overcome this obstacle, the chef tries to motivate the audience by frequently repeating the encouraging discourse she uses about the smell and taste of the food. She tries to highlight senses of smell and taste with various discourses, such as "I can't explain how it smells. Can't wait to eat." or "Delicious and smells amazing too." Moreover, the chef's visually impressive presentation of the final dish serves to stimulate the visual senses of the audience and highlights the transformative capacity of surplus food items that may not be initially appealing. The idea of presenting food in an aesthetically pleasing manner could contribute to preventing food waste by enhancing the experience and flavor of a dish. According to research by Michel et al. (2014), the use of artistic visual influences in food presentation can increase diners' enjoyment and expectations.

Overall, food has a distinct potential for recycling compared to other products due to its organic nature. With the R-strategies it encompasses, this research points to the following potential areas of intervention for design to prevent food waste at the domestic level:

1. There is an extensive potential to view surplus food products as novel materials through the implementation of techniques such as Repurpose, Reuse, and Recycle. Additionally, Reproduce strategy can enable the sharing of food by incorporating new ingredients, while Refine strategy can address the issue of food's sensory appeal. These strategies represent promising areas of intervention for designers (or chefs) who utilize food as a material and for design researchers who explore the potential of food as a material.
2. Rethink strategy presents opportunities for the creation of products and services that can stimulate changes in behavior and habits. In the realm of food, there are numerous avenues to explore between the present dish and its potential iterations, incorporating factors such as the playful nature of food, ingredient and equipment usage, cultural perspectives, and sensory

experiences. These considerations provide potential areas for reevaluation with regard to mitigating food waste.

3. Refuse and Reduce strategies suggest areas for improving the reduction of consumption, while Repair strategy focuses on extending the product life. These strategies apply to a variety of product and service designs for planning, shopping, and storing food.

Limitations of this study include, firstly, its focus on R-strategies for household food waste and potential differences in results for an R-strategy study aimed at the food service industry. Secondly, cultural influences on food waste behavior through traditional recipes and cooking practices suggest potential variations in study outcomes across different cultures.

For further research, incorporating an interview with the chef and conducting a survey among her supporters would enable the assessment and documentation of the campaign's enduring outcomes. Additionally, with the newly proposed R-strategies a circular R-ladder proposal can be developed.

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