Save Food Packaging Design Criteria

Stakeholder Online Survey of Product-Packaging Design Processes

Industry Insights Report
February 2021

FIGHT FOOD WASTE
Cooperative Research Centre
REDUCE - TRANSFORM - ENGAGE

Australian Government
Department of Industry, Science, Energy and Resources

Business
Cooperative Research
Centres Program

AIP
AUSTRALIAN INSTITUTE
OF PACKAGING

RMIT
UNIVERSITY

About this Project

Understanding the perception and use of packaging by consumers and how this plays a role in household food waste generation is an important first step in this project. With a greater understanding of how people appreciate and use packaging, along with the food waste they generate, we can design improved packaging and communications on food waste avoidance that will ultimately reduce food waste.

This project aims to understand consumer perceptions of the role of packaging in reducing food waste by:

- discovering target areas that will help drive packaging design decisions.
- discovering key consumer behaviors that may be adapted to reduce food waste.
- determining potential consumer responses to labelling and packaging alternatives in relation to food packaging.
- providing formative information for partners' new product development processes.
- designing packaging solutions to reduce food waste.
- designing more effective consumer education campaigns to reduce food waste.

The Australian Institute of Packaging (AIP) is the project leader for the Save Food Packaging Criteria and Framework 1.2.1 project which includes a Save Food Packaging Consortium that is made up of leaders in Save Food Packaging Design and innovations to ensure that the guidelines are practical for the industries they will serve.

The Save Food Packaging Consortium is made up of the AIP as project lead, RMIT as the Research Partner, Project Contributors are ZipForm Packaging, Sealed Air, Multivac and APCO, Project Partners are Plantic Technologies, Result Group and Ulma Packaging and the Extension Network consists of Australian Food Cold Chain Council (AFCCC), Australian Food and Grocery Council (AFGC), Australian Institute of Food Science and Technology (AIFST).

The Project Partners are:

AUSTRALIAN INSTITUTE OF PACKAGING

Save Food Packaging Consortium

FIGHT FOOD WASTE CRC

Project Title: Save Food Packaging Criteria and Framework 1.2.1
Project Leader: Australian Institute of Packaging (AIP)

Research Partner: RMIT UNIVERSITY

Project Contributors: APCO, MULTIVAC BETTER PACKAGING, Sealed Air, zipform PACKAGING

AIP Partners: PLANTIC Changing the nature of plastics, RESULT GROUP OF COMPANIES, ULMA

Extension Network Partners: AFCCC Australian food cold chain council, AUSTRALIAN FOOD & GROCERY COUNCIL, the australian institute of food science and technology incorporated

Front cover image: *This PIDA award winning entry support openability which is critical in aged care.*

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Executive summary

REDUCE

This report reviews expert knowledge and perceptions of 95 industry stakeholders in the Australian food industry gathered via an online survey by assessing their current organisational roles and practices regarding food waste concerns and save food packaging (SFP) strategies.

Key insights include:

1. Key executive and management levels are not claiming responsibility for food waste reduction.
2. Food waste mitigation considerations are mostly made in the early stages of the new product development (NPD) process and significantly less in the later stages.
3. Approximately 30% of stakeholders are unwilling to redesign a product's packaging to save on food waste. Industry will only act on this if it does not increase cost (this was also supported by the business case).
4. Terminology and definitions of SFP design features is still unclear and not fully recognised within the industry.
5. Greater SFP adoption within the food industry requires leaders to promote and give 'case study' examples of SFP value.
6. The greatest perceived barriers to SFP adoption is that it adds cost and time to production and organisations lack resources.
7. Sustainability is also perceived by industry to be a SFP function.
8. Most participants are willing to access the SFP design criteria, which are being developed through the Fight Food Waste CRC Save Food Packaging Design Criteria and Guidelines project, when available.

This report presents the current landscape of the food and packaging industry regarding perceptions and practices of food waste and save food packaging, the report acting as an industry 'baseline'. Positive or negative shifts from the reported baseline can be achieved through repeating this study after the rollout of the SFP design criteria to assess its impact on SFP design strategies adoption rates.

30%

of stakeholders are unwilling to redesign a product's packaging to save on food waste

Image above: Youfoodz Meal Kit. *This PIDA award winner saves food by proving portion sized meals , all ingredients in one carry case that can be stored together and recipes.*

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1.0

Introduction

The Save Food Packaging Design Criteria and Framework research project is a four-year study funded by the Fight Food Waste Cooperative Research Centre, in partnership with the Australian Institute of Packaging (AIP) Save Food Packaging Consortium[1].

The UN's Food and Agricultural Organisation's publication (FAO, 2011, FAO, 2019) has estimated that up to 30% of edible food produced for human consumption does not reach the consumer. The National Food Waste Strategy, Halving Australia's Food Waste by 2030 report (AustGov, 2017) states that Australia alone wastes up to $20 billion of edible food annually. Between farm and fork, there are several possibilities for food loss and waste to occur (Schanes, et al., 2018). This is often due to a lack of informed decision making by industry and the ever increasing demands on the role of packaging (Porpino, 2016). Packaging developments can reduce food losses both directly and indirectly (Williams, et al., 2012). Packaging's role in reducing food waste (Verghese et al., 2015, Wikström et al., 2018) is the next challenge for packaging technologists, designers and engineers.

The Save Food Packaging Design Criteria and Framework project will integrate current research literature with industry knowledge regarding the functional properties and role of packaging in saving food from being wasted. Whilst the primary functions of packaging are to contain and protect the content and provide information about the product, the role of packaging in reducing food waste needs to be better understood by food producers, manufacturers, brand owners, retailers, and consumers. The connection between packaging design and food waste needs to be discussed more openly in the industry.

This report presents the second deliverable of the project – an analysis and report of the Stakeholder Online Survey of Product-Packaging Design Processes.

Image above: *There are a lot of avocados bruised and ploughed back into field, but actually transforming these into new products will give them a new life.*

30%

of edible food does not reach the consumer

$20 billion

of edible food is wasted annually in Australia

2.0

Methodology

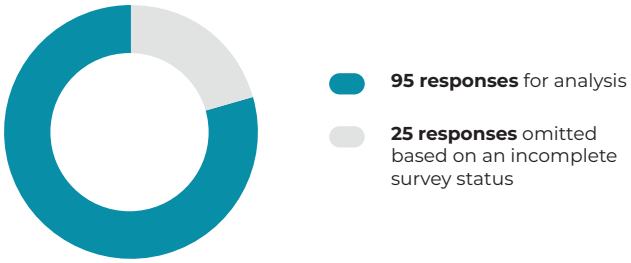
A literature review was conducted to inform the 'Stakeholder Online Survey', which referenced both academic peer-reviewed articles and industry grey literature in the form of globally recognised flagship reports and studies (Francis et al., 2020). The review identified that save food packaging (SFP) serves multiple stakeholder's needs and food waste reduction roles. The research distilled the common definitions and terminologies used across industry and academia to discuss SFP design criteria, and highlighted the need for consensus on packaging functions and features for global rollout and adoption.

The research question posed for the survey was:

How do food industry stakeholders consider current product-packaging design and development processes with the consideration of designing packaging to save food, focusing on barriers, gaps, and opportunities?

Image above: *Punchbowl packaging. This New Zealand PIDA award winner has used packaging to improve the quality and shelf-life of blueberries.*

A total of nine research questions were asked (outlined in the Appendix - Table 1). Australian based participants were recruited through an opt-in invite link. Participation was voluntary and was advertised through the Australian Institute of Packaging (AIP) database, via bulk email and social media and Fight Food Waste Cooperative Research Centre communication channels. Of the 120 responses, 25 were omitted from the analysis based on an incomplete survey status, leaving 95 responses for analysis. The remaining 95 responses included 62 completed surveys and 33 partially completed surveys. All surveys are included in this analysis and are separately indicated in each reported analysis. The survey was conducted from the 24th October to the 7th December 2019. The analysis results are reported in percentages of the total n=95 sample. The data focuses on organisational roles, and where applicable, references the role colour profiles (refer to the first figure in section 2.1.). Figures include 'yes' responses – for example 'yes, I would use', 'yes, we currently use', 'yes, a barrier', etc. Alternative responses and respective percentages are discussed

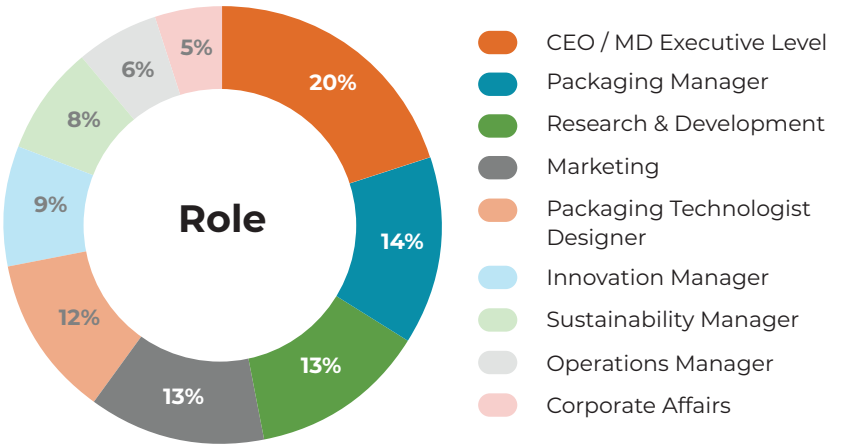


1 The Save Food Packaging Consortium that comprises the Australian Institute of Packaging (AIP) as project lead; RMIT University as the Research Partner; Project Contributors are ZipForm Packaging, Sealed Air, Multivac and Australian Packaging Covenant Organisation (APCO); Project Partners are Plantic Technologies, Result Group and Ulma Packaging and the Extension Network consists of Australian Food Cold Chain Council (AFCCC), Australian Food and Grocery Council (AFGC), Australian Institute of Food Science and Technology (AIFST).

Profile of Respondents

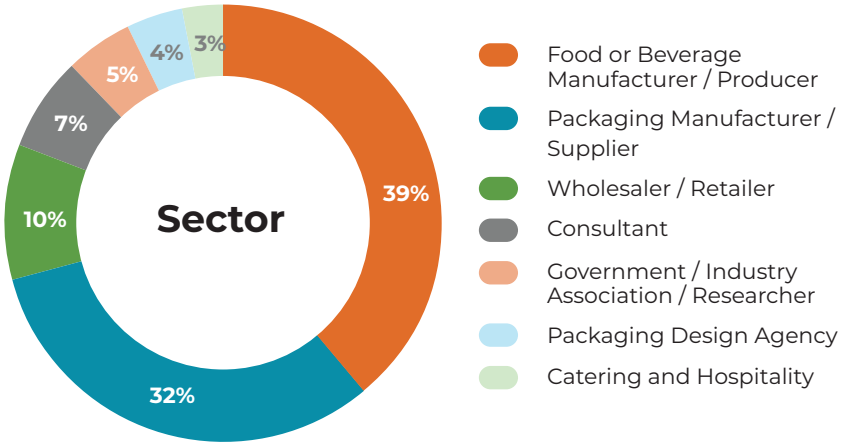
From the 95 completed surveys, a fifth of respondents were CEO/MD executive level, while research and development, packaging manager, and packaging technologist/ designer made up nearly half of respondents (Figure right).

*Figure right: Participants per **Role** in Organisation (n=95).*



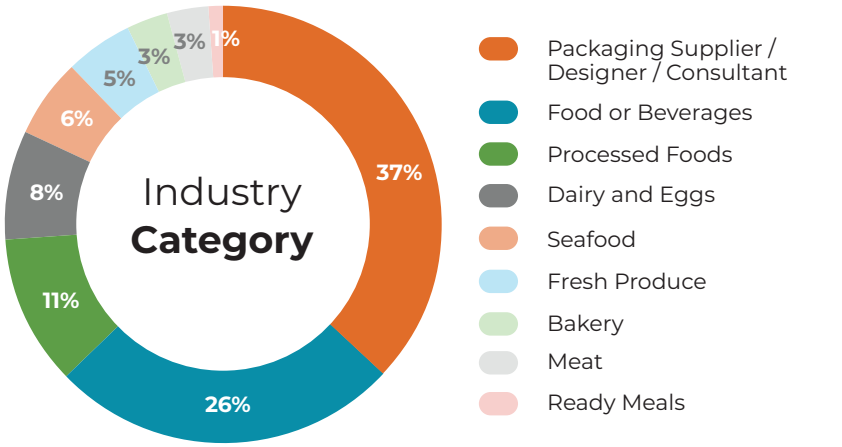
The major sectors that were represented were food or beverage manufacturer/producer and packaging manufacturer/ supplier, together comprising 71% of respondents (Figure right).

*Figure right: Participants per **Sector** in Organisation (n=95).*



Respondents then identified the main product category in which they worked. The product categories represented were predominately packaging supplier and food and beverage (collectively at 63%). There was low representation from dairy and eggs, fresh produce, bakery, meat, and ready meals (Figure right).

*Figure right: Participants per Industry **Category** in Organisation (n=95).*



3.0

Insights and Discussion

In this section, we summarise the survey questions and discuss the broad themes that emerge from the findings. The stakeholders' organisational roles highlight the adopters and engagers of SFP strategies.

The report highlights the current organisational views, practices, barriers, and organisations' willingness to shift practices. It illuminates who is onboard, and who needs further convinving that packaging can help fight food waste.

3.1

Stakeholders often considered product-packaging design as a strategy to reduce food waste

There were variations in the extent to which organisations considered how the design of a product's packaging could reduce food waste. The roles with over 50% indicating that they would more likely consider it 'often' were 'packaging managers' (69%), 'research & development', and 'innovation managers' (67%), 'sustainability managers' (63%), and 'executive levels' (58%).

In contrast, 33% of 'marketing' managers stated either 'no', they do not consider SFP design strategies as a way to reduce food waste or are 'unsure' if their organisation actively does. Only 25% indicated that they consider food waste often. This demonstrates an opportunity to engage marketing management levels, who play a significant role in brief criteria development, design direction, product release, and promotion, in order to improve food waste reduction strategies being planned and executed within industry. Interestingly, only 36% of 'packaging technologists/designers' often considered product-packaging food waste reduction strategies. This signifies the clear need to equip designers with SFP design education, and to educate managerial roles on the need for such strategies. Both a bottom-up and top-down approach is required to work towards permanently embedding SFP design criteria into new product packaging development (NPPD) processes.

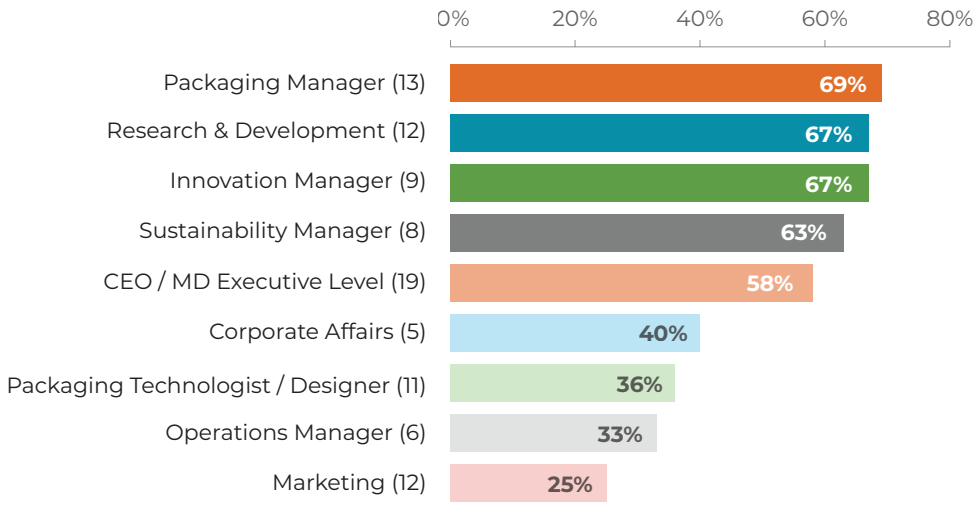


Figure above: *Percentage of stakeholders (n=95) responding 'yes, often' per role.*

Early NPPD stages weighted towards food waste reduction strategies

The NPPD processes within the food supply chain broadly occur in this order: briefing stage; innovation/research stage; conceptual design stage; development/detail stage; prototyping/testing stage; consumer trialing stage; marketing stage; commercial evaluation stage; and launch stage. Many decisions, involving different stakeholders, are made across these stages. The top three stages in which organisational product-packaging development processes consider food waste were the innovation, detail, and concept stages (each 50% on average). This was followed by the briefing stage, where 45% of organisations consider food waste implications of the product-packaging design.

More consideration is made on food waste reduction within the earlier stages of the NPPD process. The visible drop in consideration of food waste reduction strategies as organisations move through the NPPD process can be seen across the roles of 'executive', 'r&d', 'packaging manager', 'innovation manager', 'marketing', and 'sustainability manager' levels, some moreso than others. This trend raises the question that if food waste reduction strategies are considered in the early stages of the NPPD process, are the solutions being implemented in the later stages, such as the consumer trialing and launch stages? These findings also suggest that the consumer facing stages of consumer trialing, marketing and Commercial stages, vital for consumer education on SFP benefits, may not be acted upon.

Image above: *Did you know that bread is highly wasted, Australia is working on packaging solutions now.*

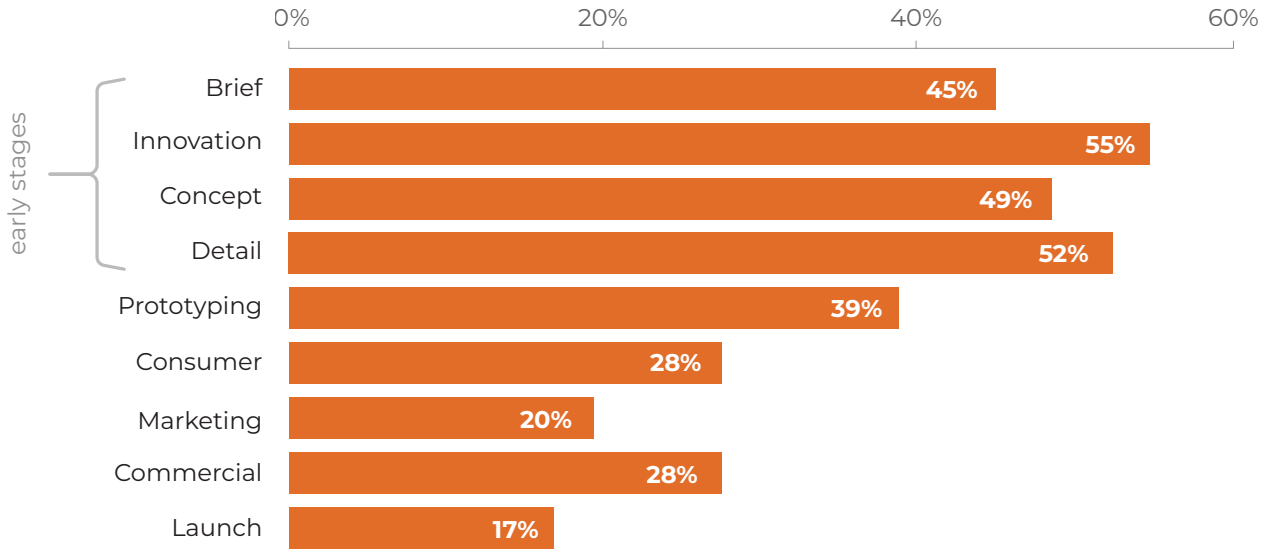


Figure above: *Percentage of stakeholders (n=95) responding yes to 'currently using' Save Food Packaging Strategies per stage. Alternative responses: 'not currently sing', or 'n/a'.*

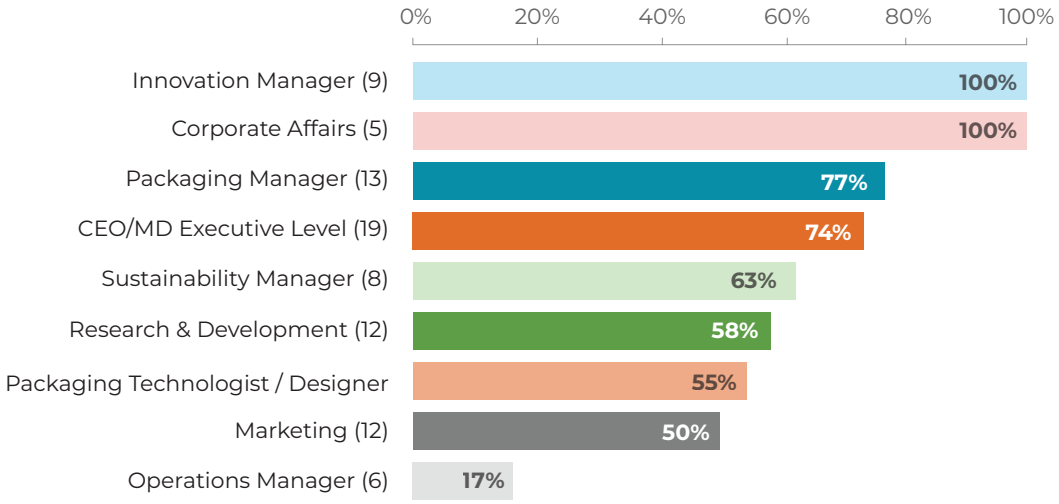
Stakeholders' willingness to reduce food waste through re-designing a product's packaging

Although many organisational roles identified they were in favour of SFP design strategies, there were differing responses in regard to their willingness to re-designing a product's packaging format based on the ability to prevent food waste. The top positions that reported they would consider re-designs were 'innovation manager' and 'corporate affairs' (both 100%), whereas the next role ranked dropped 23%, with 77% of 'packaging managers' willing to act on re-designing. 'Marketing' and 'operations managers' were less inclined to re-design a product's packaging to reduce food waste.

There was a willingness to re-design a packaging format to reduce food waste, but there was a contrasting difference in the percentages of negative responses that selected 'no' (15%), 'unsure' (15%), and 'no response' (4%). These negative responses show 29% of the participants were not willing or not confident in adopting SFP design strategies; this is not including the 'no response' entries, which are inconclusive but do indicate apathy to the topic.

In addition, the table below presents the text responses provided by participants per organisational role. These insights demonstrate that these respondents would only act on redesigning with SFP strategies if there was 'no cost', that it was 'supported by the business case', and if there was a problem with the current product's shelf life. These responses indicate that saving food waste is likely to be viewed as a secondary issue or a reactive response to a problem. In addition, respondents did not believe that food waste was 'relevant to their industy' or 'not their responsibility', indicating a clear apathy to the issue, or lack of understanding of managerial roles in advancing processes and packaging innovations in this field.

Figure right: *Percentage of stakeholders (n=95) who stated 'yes' per role. Alternative responses: 'no', 'unsure' or 'n/a'.*



Role	No, because...
CEO / MD Executive Level	Most clients would if there was no cost and was supported by the business case
CEO / MD Executive Level	We don't do packaging
Marketing and Sales	We supply materials rather than designing packaging
Marketing and Sales	Not relevant for my industry
Operations Manager	Redesign only if significant benefits are obtained. In case of beverages, we have long shelf life products so hardly necessary.
Packaging Manager	Not our responsibility
Packaging Technologist / Designer	If product shelf life is found to be too short, then redesign would be considered.
Packaging Technologist / Designer	By you did you mean as an individual or as an organisation?
Sustainability Manager	As a general development objective we endeavour to maximize shelf life - use by as a core principle. The issues confronted are non food safety, retast (rancidity) and texture (stale/ moisture ingress)

3.4

Types of save food packaging features adopted in organisations

There are a number of Save Food Packaging features: 'portion control'; 'openability'; 'resealability'; 'controlled dispensing'; 'on-pack communication'; 'date labelling'; 'usage and storage instructions'; 'shelf-life extension & barrier'; 'active & intelligent packaging'; and 'retaining nutrition' (Hellström and Olsson, 2017; Lindh, et al., 2016; Verghese, et al., 2012; 2015; Wikstrom, et al., 2014; 2018). We were interested to know which were currently being used in the product-packaging development process.

'Usage and storage instructions' and 'shelf-life extension & barrier' were collectively the most commonly selected features (both at 43%), followed by 'openability' (41%) and 'on-pack communication' and 'date labelling' (40%). These five features were utilised by approximately two fifths of respondents. In contrast, 'controlled dispensing' (15%) and 'active and intelligent packaging' (17%) were the least selected SFP features.

A further investigation into the 'other' options provided by participants revealed that certain terminology may have caused confusion. For example, although the survey listed the option 'controlled dispensing', a respondent added an 'other' feature described as: "Ease of dispensing product from packaging, e.g. pouches". This suggest that the terminology of 'controlled dispensing' is not fully understood or associated with its wider meaning. This could cause a lower ranking of the feature's utilisation, based on a misinterpretation of the survey options. This insight is supported by Save Food Packaging Design Criteria and Guidelines Baseline Literature Review (Francis, Ryder and Verghese, 2020), that identified the need for clarification on SFP terminology for future criteria to be effective and adopted.

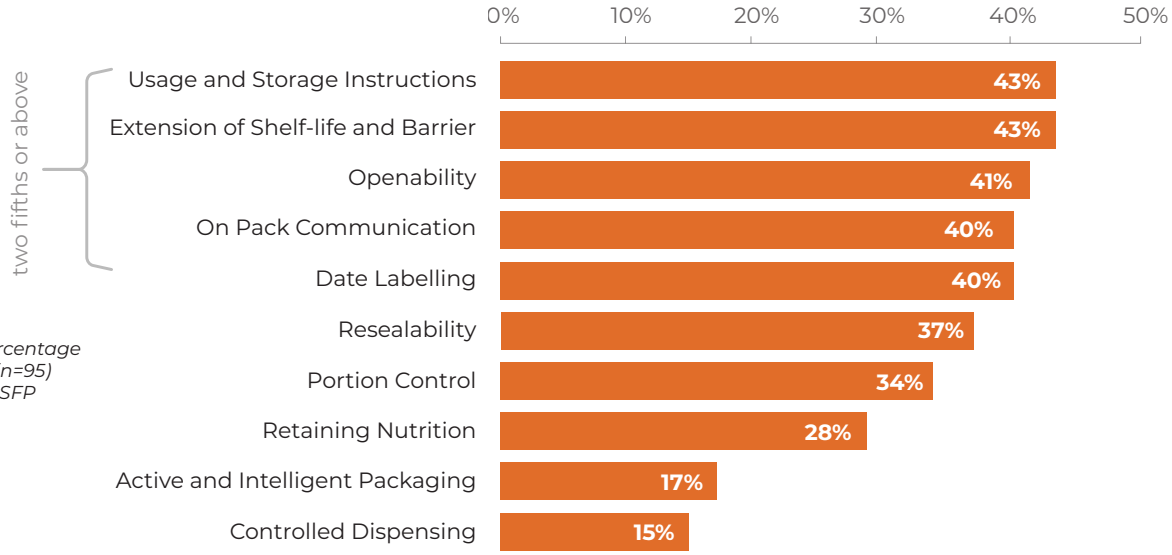


Figure right: *Percentage of stakeholders (n=95) 'currently using' SFP features.*

3.5

Apathy to the save food packaging discussion

There were a number of organisational roles who opted out of providing a response concerning the use of SFP features: CEO/MD's (57%) and Marketing (58%). These two roles are considered decision making roles, bookending the NPPD process. They define or decide design brief directions and often authorise a design's release to market. Although they partially completed the survey, this significant level of opting out suggests a level of apathy towards SFP design strategies and usage. This is a key insight for future education and attempts to incentivise organisations to shift these significant roles in their thinking and actioned when engaging in this topic.

When compared with the response for the previous question around willingness, 'executives' were willing to change packaging to reduce food waste. However, they also reported they are currently implementing just 36% of available SFP features in their current practices. This raises questions around whether executives understand all the listed SFP strategies offere, and why they are not adopting more in their NPPD practices.

3.6

Cost, lack of capabilities and time are the greatest barriers to adopting SFP features

Barriers that may prevent an organisation to consider SFP criteria within their product-packaging development process included 'not in brief'; 'lack of stakeholder alignment'; 'lack of capabilities'; 'lack of resources'; 'adds cost'; 'adds time'; "negative impact on brand integrity'; or 'not thought about it'.

The highest reported barrier to SFP design criteria adoption across all roles was 'adds cost' (41%). This demonstrates the importance of the need to develop educational case studies that demonstrate how leading organisations have benefited from the SFP investment through either increased market share or reduced food waste levels. The second more common barriers were 'lack of resources' and that it 'adds time' (each at 27%), closely followed by 'lack of stakeholder alignment' (24%). These three factors all related to clients or in-house management who do not value SFP strategies and their benefits. As a result, resources and time are not dedicated to develop and implement food waste design reduction strategies.

It is noteworthy that just under 20% of respondents stated that a barrier to SFP adoption was 'not in the brief' (figure above). This suggests SFP is not always written into NPPD proposals and guiding briefs and therefore is not accommodated. Participants who selected this option were comprised of four 'marketers', three 'innovation managers', and three 'research and development' roles, among others. In contrast, 40% of respondents claimed that 'not in the brief' was not a barrier, indicating they would still consider SFP strategies with or without these strategies included in their design brief. When considering the alternative results for 'not a barrier', the highest responses are 'negative brand' (43%), followed equally by 'brief' and 'no thought' (both 40%).

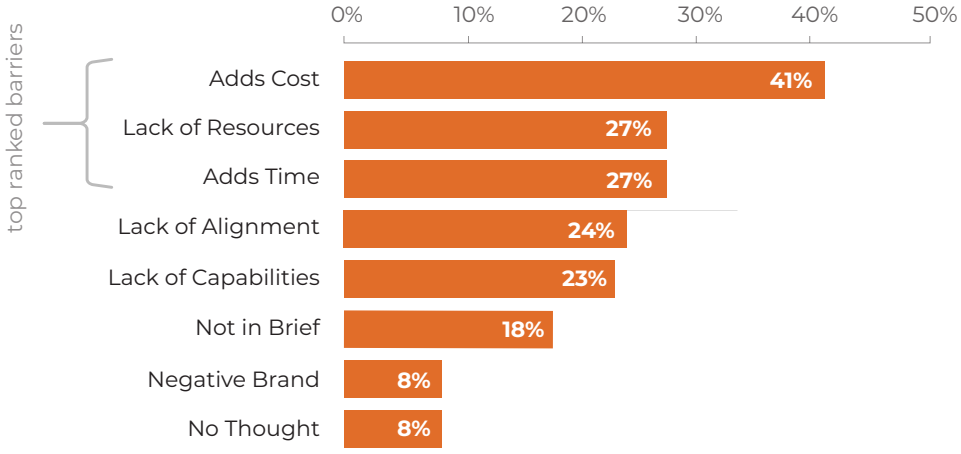


Figure right: *Percentage of stakeholders (n=95) who responded 'a barrier' per listed factor.*

3.7

Using save food packaging criteria

There are several ways the deployment of SFP criteria can be executed. Participants were presented with the options of a 'PDF in static form', a 'PDF in dynamic form', and an 'interactive website' (opposed to a landing page or static website). The majority of participants (55-60%) indicated that they would use all three formats. Additional formats were also offered by the participants, including a smartphone app or an interactive database. This demonstrates the need for multiple formats in which to deploy SFP strategies, to cater for various needs and purposes. It also clearly shows that over half of the stakeholders are anticipating the readiness of the SFP design criteria rollout.

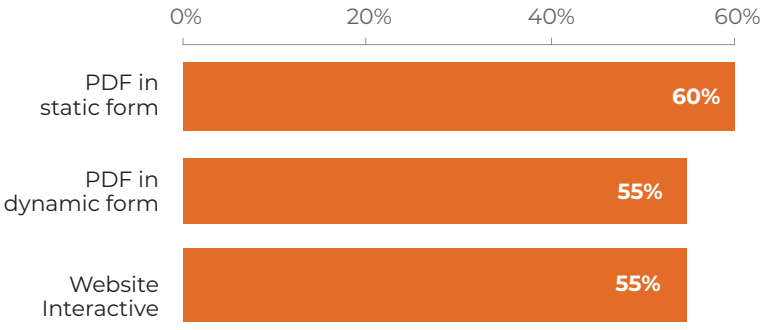
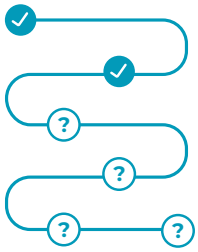


Figure above: *Percentage of stakeholders (n=95) who responded 'yes, I would use'.*

4.0

Recommendations

1. **Buy in from decision makers:**
'CEO/MDs' and 'marketers' were recognised as the organisational roles that had the most 'opt-out' response rates (57% and 58% respectively). These participants' additional comments indicated it was not their concern or role to consider food waste. They were also often the least likely to use SFP design criteria and were less willing to adopt SFP strategies compared to other roles. Education and promotion on how these roles might engage with SFP strategies when directing their design teams to consider such innovations is vital. The lack of stakeholder alignment (reported by 24% of respondents) is a barrier that hinders organisations adopting SFP strategies. Equipping 'CEOs/MDs' and 'marketers' with an awareness of the decision making power they hold is key to reducing food waste through packaging.



2. **Early stage food waste considerations carried through:**
More consideration of SFP criteria was made in the early stages of the design process, however the consideration of food waste is less considered in the later stages. This indicates good intentions of reducing food waste in these early stages may not be carried through to the actioning and launch stages of the NPPD process. Therefore, there is an opportunity to further research how these stages prevent these good intentions carrying through to actions in later stages. Such research could also test the food waste implications of those decisions and the potential for adjusting packaging design for minimising food waste throughout the entire NPPD process.

3. **Opportunity to activate consumer research:**
'Consumer trialling' appeared to be a stage in which food waste implications are not being considered. This insight suggests that food businesses are not considering consumers' attitudes to SFP innovations and their benefits. Consumer education and communication of SFP designs is key for adoption and value recognition, this research reports that this is currently not being taken advantage of. In addition, the 'marketing' and 'launch' stages of NPPD were found to be the least likely to 'currently use' SFP strategies, which means the decision makers of these stages need to be more aligned to consumer-facing SFP strategies; for example, in 'marketing' roles.

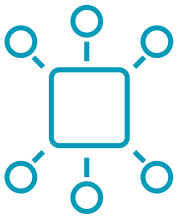
4. **SFP value-creation case studies as a best-practice benchmark:**
Close to a third of stakeholders were unwilling or unsure if they would re-design a product's packaging to reduce food loss/waste. This demonstrates a significant apathy towards food waste reduction through packaging design. This means the value of SFP strategies is not clearly communicated or understood in the food industry. Other participants reported that SFP adoption was often only driven by cost, business case support, and evident shelf-life extension. The value of SFP for companies needs to be presented to the food industry through success stories or 'case studies'. One excellent example of this is the promotion of Save Food Packaging Design Award category winners (AIP, 2019), within the AIP Australasian Packaging Innovation & Design (PIDA) Awards (AIP, 2020). This will encourage the increased adoption rates of SFP criteria across the food industry.

5. **Meaningful SFP language:**

Clarity of SFP terminology is essential for widespread industry adoption. It was indicated that 'controlled dispensing' was potentially not fully understood by all participants. The results confirm the findings from the literature review pointing to lack of adoption or confusion when SFP features have multiple terms. It is recommended that key stakeholders in the food industry agrees upon a consistent terminology and ensure all current and future materials referring to SFP features align to this terminology and definitions.

6. **Unlocking barriers to SFP adoption through cost-to-value ratio examples, improved resources, and time:**

Barriers hindering organisations in adopting SFP features include the concern of added costs, a lack of resources, and additional time. Cost-to-value ratio analyses presented as case studies to the food industry would justify SFP adoption and guide hesitant organisations to act on new investments and dedicate resources and time to SFP strategies. The SFP design criteria developed by this project aims to provide industry with "how-to guides" in relation to adopting such practices.



7. **SFP criteria should be offered through different channels:**

The majority of stakeholders were willing to use all formats of the SFP design criteria and guidelines, demonstrating the industry's expectations for systematic change and process improvements. Although 55-60% responded 'yes' to using the three modes of access presented, additional options were suggested such as a smart phone app. It is therefore recommended that the SFP criteria needs to be offered through multiple channels to accommodate all preferences, from PDFs to interactive websites and apps. This will ensure the greatest reach within the food industry.

This report presents a sample of the perceptions and organisational practices of stakeholders in the Australian food and packaging industry. A further study building on this report is scheduled to further provide deeper insights taken from the learnings of the report through stakeholder interviews. Together, this multi-method, multi-disciplinary project, alongside the literature review undertaken to guide the research direction, will form a baseline for the food and packaging industry. It is recommended this survey be repeated after the rollout of the Save Food Packaging design criteria and framework promoted through the Australian Institute of Packaging (AIP), to understand if further industry adoption of SFP design strategies, perceptions, and NPD processes have changed in response.

5.0

Acknowledgements

This research project is funded by the Fight Food Waste Cooperative Research Centre in partnership with the Save Food Packaging Consortium that comprises the Australian Institute of Packaging (AIP) as project lead; RMIT University as the Research Partner; Project Contributors are ZipForm Packaging, Sealed Air, Multivac and Australian Packaging Covenant Organisation (APCO); Project Partners are Plantic Technologies, Result Group and Ulma Packaging and the Extension Network consists of Australian Food Cold Chain Council (AFCCC), Australian Food and Grocery Council (AFGC), Australian Institute of Food Science and Technology (AIFST). The project is a four-year study to further develop Save Food Packaging Design Criteria and Framework project. "The work has been supported by the Fight Food Waste Cooperative Research Centre whose activities are funded by the Australian Government's Cooperative Research Centre Program. This is FFW CRC Publication 2020_020.

Image right: *This best practice PIDA award winning entry took bruised avocados that would have been just ploughed back into the farm and transformed them into a higher value product.*

6.0

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Appendix

Table 1:
Survey design for the stakeholder review online survey

Section	Question	Response options	Selection
Section 4.1.1	Q1 (a) What is your main role in your organisation?	CEO/MD executive level	Multiple choice (select one answer), 'other' text option provided
		Research & development	
		Packaging manager	
		Packaging technologist/designer	
		Innovation manager	
		Marketing	
		Sustainability manager	
		Operations manager	
		Corporate affairs	
Section 4.1.2	Q1 (b) What sector best represents your organisation within the food supply chain?	Food or beverage manufacturer/producer	Multiple choice (select one answer), 'other' text option provided
		Packaging manufacturer/supplier	
		Wholesaler/retailer	
		Consultant	
		Packaging design agency	
		Catering and hospitality	
		Government/industry association/researcher	
Section 4.1.3	Q1 (c) What is the main product category in your organisation?	Packaging supplier/designer/consultant	Multiple choice (select one answer), 'other' text option provided
		Food or beverages	
		Processed foods	
		Dairy and eggs	
		Fresh produce	
		Bakery	
		Seafood	
		Meat	
		Ready meals	
Section 4.2	Q2. Does your organisation consider how the design of a product's packaging could reduce food waste generated within the supply chain through to the end user?	Yes, often	Multiple choice (select one answer)
		Yes, sometimes	
		Yes, rarely	
		No, please explain (text option)	

Section 4.3	Q3. Which stages of your product-packaging development process does your organisation consider potential food waste implications?	Briefing stage	Multiple answer (select all that apply), 'other' text option provided
		innovation/research stage	
		conceptual design stage	
		development/detail stage	
		prototyping/testing stage	
		consumer trialing stage	
		marketing stage	
		commercial evaluation stage	
		launch stage	
Section 4.4	Q4. Would you consider re-designing a product's packaging format based on the ability to minimise/prevent food waste?	Yes	Multiple choice (select one answer)
		Unsure	
		No, please explain (text option)	
Section 4.5	Q5. Which of the listed save food packaging design criteria do you currently use in your product-packaging development process?	Portion control	Multiple answer (select all that apply), 'other' text option provided
		Openability	
		Resealability	
		Controlled dispensing	
		On-pack communication	
		Date labelling	
		Usage and storage instructions	
		Extension of shelf-life and barrier	
		Active and intelligent packaging	
Section 4.6	Q6. Are there any barriers in stopping your organisation from considering 'save food packaging criteria' within your product-packaging development process?	Not included in design brief	Multiple answer (select all that apply), 'other' text option provided
		Lack of stakeholder alignment	
		Lack of capabilities	
		Lack of resources	
		Adds cost	
		Adds time	
		Negative brand integrity impact	
		Haven't thought about it	
Section 4.7	Q7. Save food packaging design criteria with additional guidelines are currently being developed. When published, they will be offered through the Australian Institute of Packaging (AIP) website. When available, what format of delivery would you use?	Downloadable static PDF document	Multiple answer (select all that apply), 'other' text option provided
		Downloadable dynamic PDF document	
		Available through an interactive website	

Participants took seven minutes on average to complete the survey.

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