

## Project Summary

### ‘Save Food Packaging Criteria and Framework’ Project

#### KEY POINTS

- The terminology and categories defining Save Food Packaging (SFP) strategies were mapped (across academic and industry publications), tabulated, and cross-referenced to identify synergies, gaps, and misalignments.
- Surveyed and interviewed industry stakeholders regarding their perceptions of SFP strategies and uptake. Baseline gained across different organisational roles and across different food categories.
- Development of Save Food Packaging (SFP) design criteria and framework, guidelines, and icons, accompanied by SFP case studies, resources and training materials to support informed food-packaging design to reduce food waste.
- Completed PhD research that identified opportunities for specific actors and key decision makers within the food/beverage–packaging industry to implement SFP solutions more effectively to reduce household food waste. Interplay explored through the case of reclosable and resealable packaging in relation to consumers’ household food storage practices and food waste.

#### THE CHALLENGE

Whilst the primary functions of packaging are to contain, protect and provide information about the product, the overall role of packaging in reducing food waste needs to be better understood by food producers, manufacturers, brand owners, retailers, government and consumers. Finding the right balance between minimising the use of packaging without increasing food waste is a key challenge. Enhancing packaging’s role in reducing food waste is the next challenge for packaging technologists, designers, and engineers.

#### THE OPPORTUNITY

Our project integrated academic research with industry knowledge and experience to develop SFP design criteria and communication material, case studies and training materials. These have been tested by industry stakeholders and provide food and packaging stakeholders with access to guidelines and tools to assist them in their design, selection, and use of packaging materials for food, including appropriate portioning, sealability, resealability features, date labelling, and extend shelf life. In addition it provides the information required to assist retail, food service and consumers to minimise food waste.

#### OUR RESEARCH

The project was led by the Australian Institute of Packaging (AIP), with research partner RMIT University and an extensive multi stakeholder Save Food Packaging Consortium, partners and an extension network to deliver the project. The Save Food Packaging Consortium comprised ZipForm Packaging, SEE (formerly Sealed Air), Multivac and the Australian Packaging Covenant Organisation (APCO). Project partners were Plantic Technologies, Result Group and Ulma Packaging. The extension network included the Australian Food Cold Chain Council (AFCCC), Australian Food and Grocery Council (AFGC), and Australian Institute of Food Science and Technology (AIFST).



Figure 1. Five Key Criteria Categories (Francis et al. 2024)

Key activities of the project are summarised below.

**Desktop literature review** (briefing paper) presented a summary review of academic literature and commercial 'grey' literature, along with recommendations to help inform the review of the current SFP design criteria being used in the Packaging Innovation and Design Awards (PIDA).

**Stakeholder online survey** - reviewed 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 SFP strategies.

**Stakeholder interviews** - reviewed the expert knowledge and perceptions from 12 stakeholder interviews, representing a range of organisations from the Australian food industry, evaluating current SFP design and system implementation techniques.

**Case study development** – all SFP award winners from the PIDA awards were interviewed with a series of questions reading their packaging design and the role that it plays in minimising food loss and waste. The case studies are available on the Australian Institute of Packaging (AIP) website and are used on the training course and presentations on the topic.

**SFP Criteria development**, including design, SFP Consortium feedback/ input, refinement and publication, including: Criteria Resource Booklet, Criteria Icons and Criteria Checklist Sheet.

**Training material and workshop** - The AIP re-wrote the existing training course that was developed at the start of the project to include the latest statistics, research, findings, reports and data from a global perspective, then regionally within Australia and New Zealand. The detailed checklists and SFP guidelines are the foundation of the training framework and all best practice case studies are used as examples and discussion points within the training.

**Embedded PhD Research** - provided deeper insight into packaging opportunities for specific actors and key decision makers within the food/beverage–packaging industry to implement SFP solutions more effectively to reduce household food waste. The interplay was explored through

the case of reclosable and resealable packaging in relation to consumers' household food storage practices and food waste.

## OUTCOMES

AIP, as Project Leader, have established a voice for SFP within the greater realm of sustainability and packaging design. They are talking to the industry about 'Getting the Balance Right' between Food Waste and Packaging Waste when discussing environmental impacts of product and packaging. 'Getting the Balance Right' has now become a cornerstone of the AIP, and the Institute is extremely proud to see multiple industry players using the same discussion within their networks, including across the world.

Another outcome of this project was that the AIP wanted the 'science' and the 'research' to be able to talk with credibility and validity about SFP. The development of the two industry insight reports was a great milestone of this project. These findings have enabled the AIP to speak to the topic with the backing of research. The findings also enabled the AIP to showcase the underutilised areas within SFP that needed to be further enhanced in the future such as Active & Intelligent Packaging, improvement of date labelling, increased consumer education, embedding on-pack/off-pack labelling and improved use of lifecycle assessment within brands.

The AIP now lead the way as one of the global packaging experts in the role that packaging plays in minimising food waste. The AIP and RMIT and the project are now recognised in all corners of the globe for being leaders in this subject. An unexpected outcome was that the AIP became subject matter experts in not only SFP, but also more general understanding on food loss and waste.

## IMPACT

Since inception of the project the AIP has been able to represent the voice for SFP at close to 60 events across the world including the AIP Australasian Packaging Conference, the National Food Waste Summit, WA DPIRD Conference, Food SA Conference, AIFST conference, Waste Expo, FoodTech PackTech New Zealand packaging forums, ProPak Asia (Thailand) Global Packaging Forum, Australasian Waste & Recycling Expo, National Retail

Association workshops, APCO webinars, ProPak Philippines Packaging Forum, the FAO Impact Webinar, World Packaging Organisation webinars and events, Sri Lankan Institute of Packaging webinar, an environmental workshop in Saudi Arabia, Singapore Packaging Federation webinars, European conferences and more. Other highlights include multiple interviews, podcasts and articles on the subject.

One of the main Highlights was being invited to speak at Interpack 2023 in front of FAO, UN and Save Food Org, about our project. This presentation then led to speaking at an FAO impact webinar and work with UNIDO and the World Packaging Organisation.

### NEXT STEPS

The AIP will continue to present this topic at all available events and being able to now take the SFP Guidelines into training and workshops is critical to raise the voice within industry.

The project has exceeded initial expectations, and the final guidelines, checklists and case studies enable the AIP to lead from the front, supported by science and evidence. In the next few years, the AIP would like to see even more entries into the Save Food Packaging awards, more ANZ WorldStar award winners and continued development of case studies and Best practice examples of intuitive and innovative packaging.

The next step is for the AIP to help guide businesses into embedding the 5x SFP principles into their own business.

This project is just the start of the AIP continuing to be the subject matter experts in Save Food Packaging design and raising the voice for such an important topic.

### PROJECT TEAM

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The Save Food Packaging Consortium has had the following members and we wish to thank everyone for their extensive industry knowledge, expertise and contributions to discussions, workshops, input into the criteria and guidelines throughout the multi-year project: (in alphabetical order) Alan Adams, Warwick Armstrong, John Bigley, David Chacon, Keith Chessell, Barry Cosier, Michael Dossor, Fiona Fleming, David Kilpatrick, Dr Carol Kilcullen-Lawrence, Stuart Lay, Greg Picker, Kylie Ruth, Sophie Sumner, and Tony Whelan.

### PROJECT REPORTS/PUBLICATIONS

Francis, C., Ryder, M. & Verghese, K. (2020). Save Food Packaging Design Criteria and Guidelines: Research Literature and Industry Knowledge Review: Briefing paper (unpublished), Fight Food Waste CRC, Adelaide.

Francis, C., Ryder, M., Verghese, K., Lockrey, S., Kelton, N., Save Food Packaging Consortium and Fight Food Waste CRC (2021) Save Food Packaging Design Criteria. Stakeholder Online Survey of Product-Packaging Design Processes. Industry Insights Report. Fight Food Waste Cooperative Research Centre, Adelaide, Australia.

Ryder, M., Verghese, K., Ryding, L., Francis, C., Lockrey, S., Kelton, N., Save Food Packaging Consortium and Fight Food Waste CRC (2021) Save Food Packaging Design Criteria Stakeholder Interviews of Product-Packaging Design Processes, Industry Insights Report, Adelaide, Australia.

Chan, R., Francis, C., Verghese, K., Lowenstern, B., Teasley, S., Lockrey, S. (2023) Save Food Packaging Design Criteria: Packaging solutions to reduce household food waste. Industry insights report of PhD insights and recommendations, Fight Food Waste Cooperative Research Centre, Adelaide, Australia.

Francis, C., Kelton, N., Lowenstern, B., Ryder, M., Lockrey, S., and Verghese, K., (2024) Save Food Packaging Design Criteria and Guidelines, End Food Waste Cooperative Research Centre, Adelaide, Australia.

### PROJECT WEBPAGE

<https://endfoodwaste.com.au/projects/save-food-packaging-criteria-and-framework/>