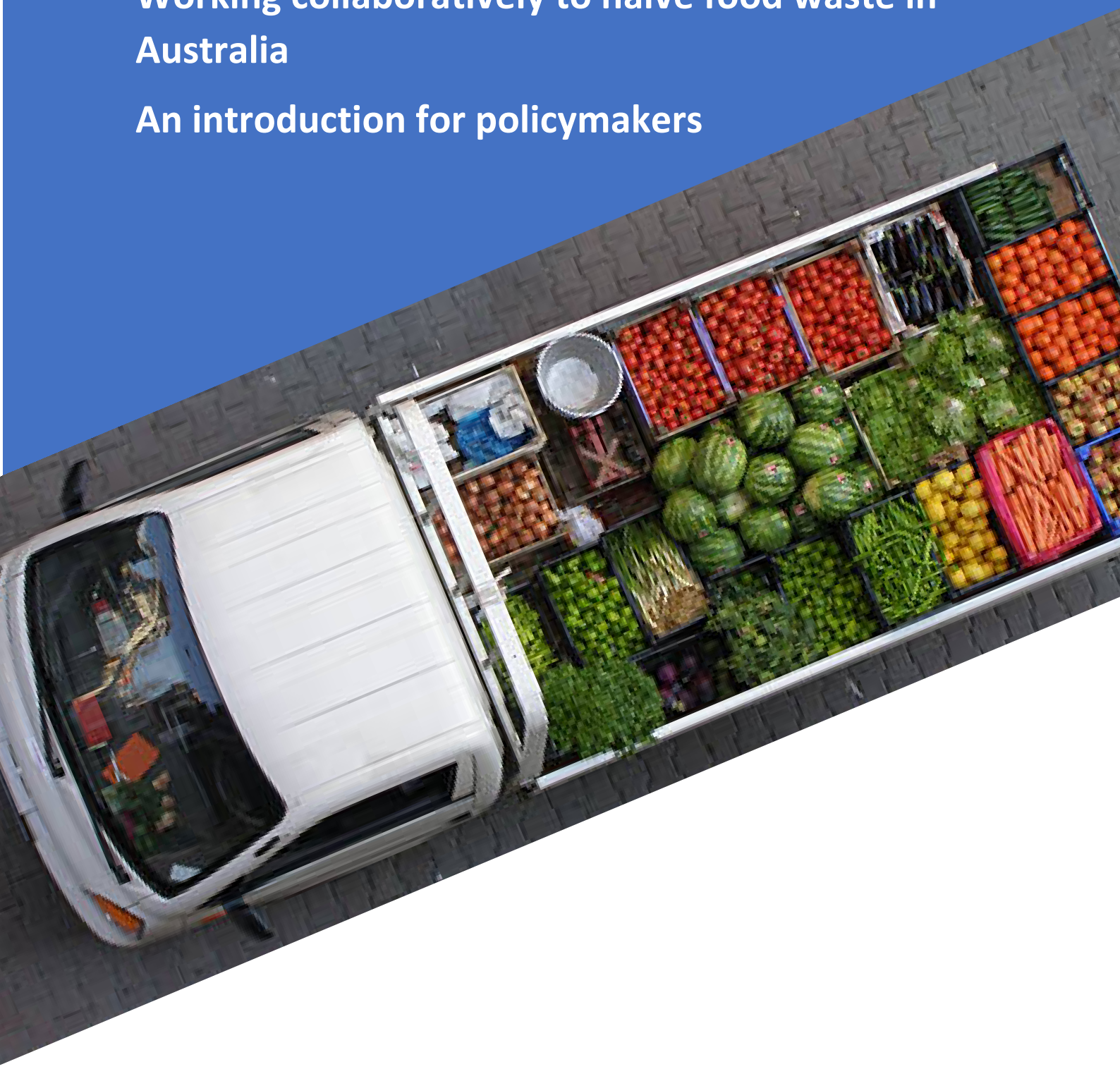
Establishing a Voluntary Commitment Program:

Working collaboratively to halve food waste in Australia

An introduction for policymakers



FIAL

Food Innovation Australia Ltd

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1. Background and introduction

1.1 Introduction

This paper provides the technical and policy context for tackling food waste and the role and potential effectiveness of a voluntary commitment program in helping to deliver a halving of food waste in Australia by 2030. It starts by summarising the nature and scale of food waste both globally and in Australia; and moves on to the policy and business case for preventing food waste, before describing the components of the proposed voluntary commitment program and a range of indicative activities that could take place under it. The paper concludes by highlighting what a future governance entity would need to do to establish the voluntary commitment program, recruit signatories to it and measure progress over time.

1.2 Global food waste and its impacts

The scale of global food waste and its impacts on the global economy, society and the environment are immense. One way of illustrating this is to imagine global food waste as a country in its own right.

If global food waste was a country it would consume[1]:

- **32%** of global food supply by weight, at a cost of circa **A$1.8 trillion** a year[1]
- **25%** of all water used in agriculture[1]
- **23%** of all of the fertiliser used on Earth[3]
- **1 in 4** of all food calories available on the planet.[2]

And it would be:

- **The world's third largest carbon emitter** after the USA and China (generating 8% of total global greenhouse gas emissions)[3]
- Utilising an area of cropland the size of **China**[1] (noting that all of the land in Australia only represents 82% of China's landmass).

1.3 Food waste in Australia and its impacts:

According to the National Food Waste Strategy Baseline – Final Assessment Report, published by Arcadis in March 2019, Australians generate almost 300 kilograms of food waste per capita every year. This resulted in a total of 7.30 million tonnes of food waste in 2016-2017 across

[1] Sources for 'If global food waste was a country': **(1)** Champions 12.3 – SDG Target 12.3 on Food Loss and Waste – 2019 Progress Report; **(2)** WRI Creating a Sustainable Food Future Instalment Paper 2: Reducing Food Loss and Waste (calorie statistic) and **(3)** WRI – Reducing Food Loss and Waste – Setting a Global Action Agenda (2019) (fertiliser statistic).

the entire production and consumption chain. An additional 0.05 million tonnes of surplus food was donated to food rescue and relief organisations and 3.93 million tonnes of food was sent to feed animals.

The estimated cost of food waste to the Australian economy is $20-25 billion, including the $2,200 to $3,800 per year that the average household spends on food that then becomes waste. The environmental cost of food waste in Australia is also high, with an estimated 7Mt of carbon dioxide equivalent (CO_2e) emissions a year resulting from food waste in the cold food chain and 7.6Mt of CO_2e emissions a year from decaying food in landfill alone[2,3], suggesting that greenhouse gas emissions from food waste in Australia account for 5% or more of national greenhouse gas emissions. Whilst some studies suggest that the amount of water required to irrigate vegetables alone is 475 litres per person per day[4].

As can be seen from the situational snapshot of food waste in Australia in **Figure 1** below, households (34%) and primary production (31%) were responsible for two thirds and food manufacturing for another quarter (24%) of the total food waste. Whilst retail, hospitality and food service and institutional sectors are responsible for a relatively small proportion of wasted food at 3%, 4% and 3% respectively, their ability to influence food waste in both the upstream and downstream food value chain make them uniquely placed to play a major role in the fight against food waste. So, any action or initiatives in Australia to reduce food waste need to cover the entire food production and consumption chain.

1.4 Reframing the food waste opportunity

Tackling food waste in all of its forms is one of the biggest challenges facing society and the food production and consumption system today. Reducing food waste provides a significant opportunity to improve food chain trust, agility and resilience, farm productivity and food availability, particularly in times of uncertainty, high demand and supply volatility, and environmental change (e.g. where floods, droughts and ongoing water scarcity, bushfires and lost soil health create new supply risks). Providing good practical advice, hints and tips that help Australian families to better manage the food they grow or buy can save them money and help them to stay healthy. Whilst, greater food availability and the channelling of surplus food to those in need can also reduce food stress and insecurity. And finally, identifying new product or co-product opportunities that arise from surplus food or the utilisation of materials in food waste streams can unlock new value in the food supply chain, creating new business opportunities and jobs.

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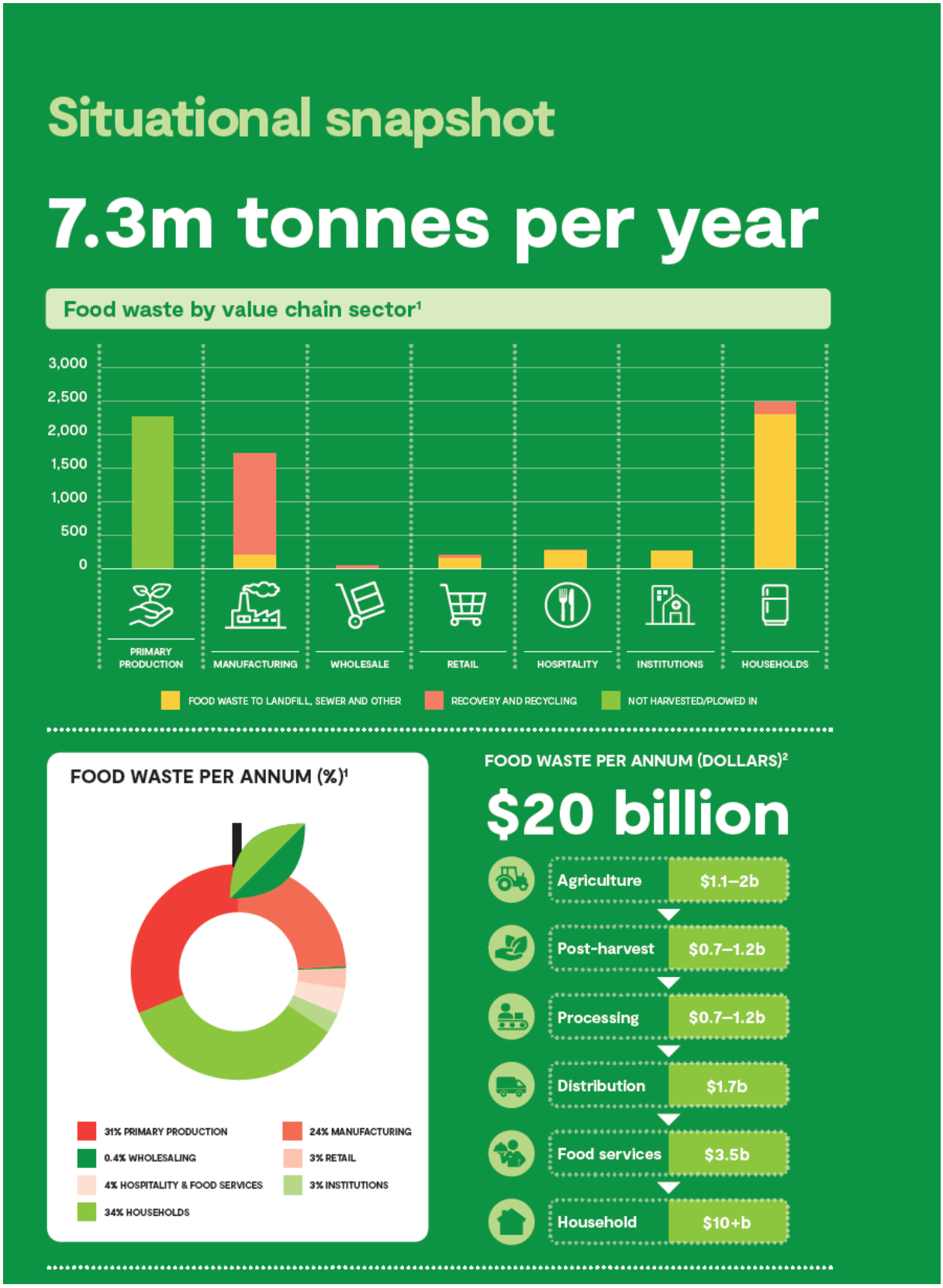
[2] Australian Government: *National Food Waste Strategy: Halving Australia's Food Waste by 2030*. Canberra: Commonwealth of Australia (2017).

[3] Expert Group – A study of waste in the cold food chain and opportunities for improvement (prepared for the Department of Energy and Refrigerants Australia) (Draft report March 2020).

[4] Melbourne, U. (2016). Info-graphic: how much water we eat. Retrieved from https://research.unimelb.edu.au/foodprint-melbourne/publications/how-muchwater-is-needed-to-grow-melbournes-food

Figure 1: Situational snapshot of food waste in Australia

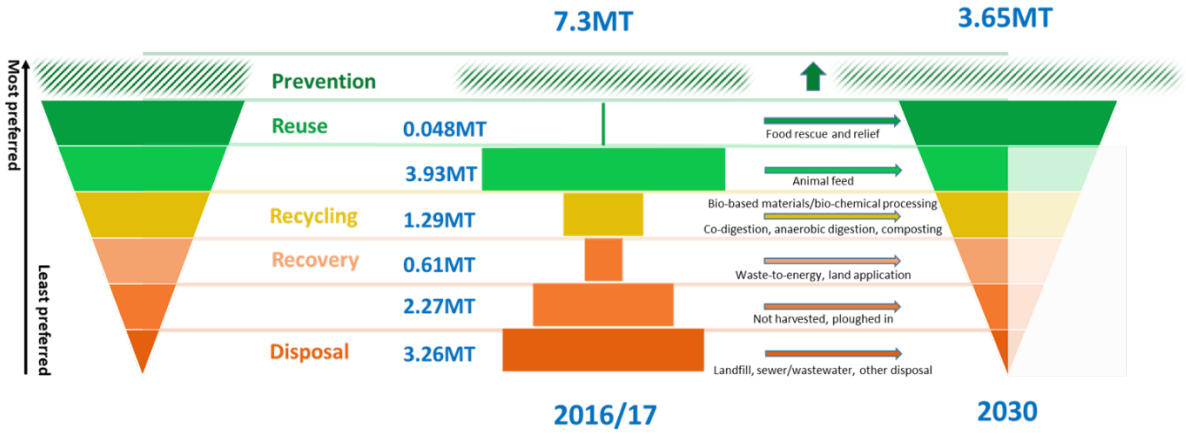


Source: A roadmap for reducing Australia's food waste by half by 2030 (FIAL, January 2020)

Figure 2 below illustrates the concept of the food recovery hierarchy and identifies how much food and food waste arises at each level of the hierarchy according to the Arcadis baseline study. As can be seen from **Figure 2**, a significant re-balancing of effort is going to be required in order to provide a stronger focus on activities that will deliver the national 50% reduction target: food waste prevention, reuse and high value waste valorisation.

Information on the Australian Government's National Food Waste Strategy, committing to halve food loss and waste in Australia by 2030 and other relevant policy documents, including the definition of food waste and the activities that count towards the achievement of this target can be found in **Annex A**.

Figure 2: Illustration of the concept of the food recovery hierarchy, the tonnages of food and food waste present at each of the levels of the hierarchy in Australia according to the March 2019 Arcadis baseline study and desired 2030 outcomes.



Key to Figure 2 - Definitions:

Prevention: means the elimination of - or reductions in - food waste

Reuse: includes donation of safe, surplus food to food rescue & relief organisations and food sent to feed animals

Recycling: includes co-product development (unlocking value from food waste streams – e.g. bio-refining, biomaterials), co-digestion/anaerobic digestion and aerobic composting

Recovery: the controlled combustion of food waste (waste to energy), other recovery – e.g. land application, or where food is not harvested or ploughed back into the land

Disposal: landfilling of food waste, sewer or wastewater treatment, other disposal methods

2. What is the business case for reducing food waste?

The business case for reducing food waste is multifaceted and compelling. **Table 1** below summarises the business benefits of reducing food waste, with significant opportunities to:

Improve business performance	By reducing direct operating and value chain costs
Improve business and value chain resilience	By responding to an increasingly resource constrained world where: • Raw material prices are higher. • Food price volatility is a fact of life. • International demand and competition for good quality, safe food is growing.
Utilise food loss and waste as a new innovation platform for Australian companies	By realising: • New product development and lean manufacturing opportunities. • Packaging innovation and logistics efficiencies. • Opportunities for new resource and waste management infrastructure development. • Waste valorisation activities and developing new, high value co-products.
Deliver more competitive and sustainable food products	By reducing the costs and environmental impacts associated with food loss and waste; and tapping into a growing consumer market for sustainable products.
Develop better relationships along the food value chain	With and between primary producers, key supply partners and customers/consumers.
Deliver societal and community health and nutritional benefits	By donating surplus food to the five million Australians that experienced food insecurity in the last 12 months[5].
Facilitate delivery of related policy objectives	By reducing greenhouse gas emissions, improving water stewardship and soil health, etc.
Enhance corporate reputation	By expanding customer/consumer experience, loyalty and access to higher value food products.

Table 1: summary of some of the business benefits associated with reducing food waste

Figure 3 below summarises this multifaceted business case, highlighting a global average **14:1** return on investment for food loss and waste reduction initiatives across a range of different sub-sectors of the food industry, with more advanced countries realising up to a 250:1 return on investment.

[5] Source: Foodbank Hunger Report 2019, equivalent to a 22% increase in the number of people seeking food relief from charities in the same timeframe.

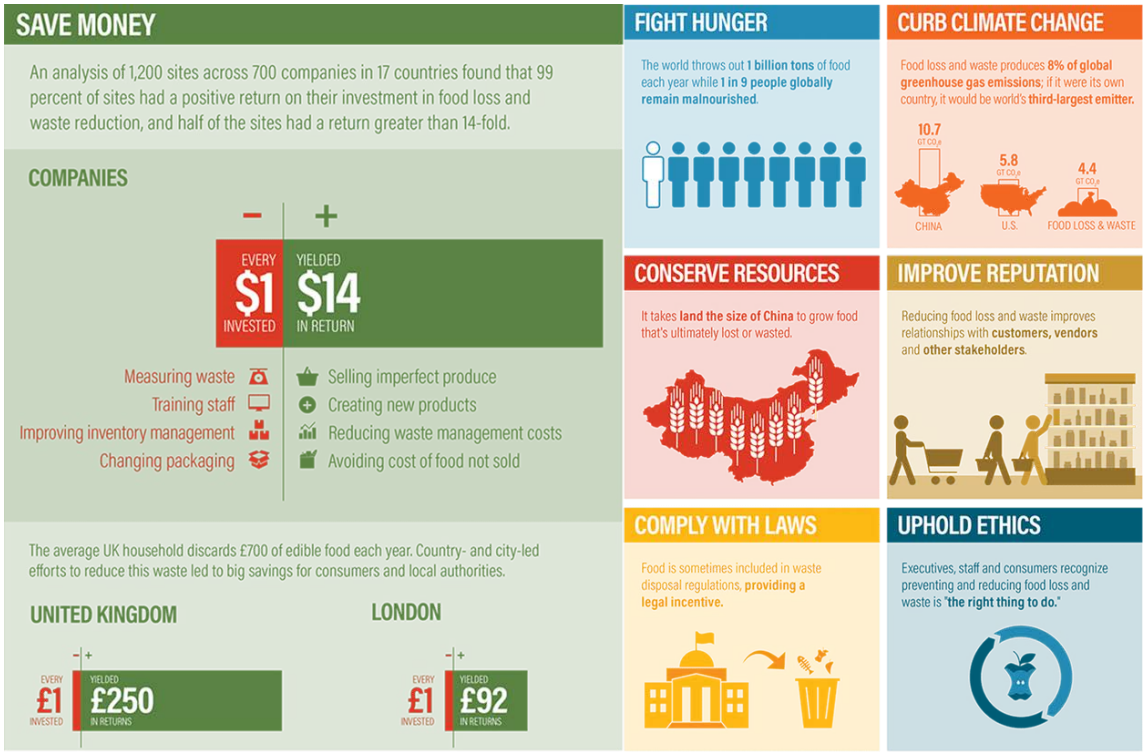


Figure 3: the business case for reducing food loss and waste (Champions 12.3 analysis of 1,200 sites, from 200 companies in 17 countries)[6]

In addition to the work undertaken by Champions 12.3 (a global coalition of governments, cities, food companies and others) in **Figure 3** above, Food Innovation Australia Limited's (FIAL's) November 2017 report: *The Size of the Prize: An overview of 16 global opportunities for Australian Food and Agribusinesses* highlighted that tackling food waste presented Australian food businesses with a $465-$775 billion global opportunity to enhance production and extract new value from surplus and wasted food by 2025. The size of this opportunity represented a compound annual growth rate (CAGR) of 25-38% between 2015 and 2025.

A recent survey by *Inside FMCG*[7] found around 40% of Australian consumers want food businesses to stop rejecting imperfect produce. Similarly, the findings from the Fight Food Waste CRC Household Waste Behaviour Baseline (2019)[8] show that 76% of Australians are motivated to reduce food waste in the home; and, based on experiences in other countries, will be looking to their favourite supermarkets and food brands for help in the future.

The following sections highlight the role, effectiveness and benefits of voluntary commitment programs in other countries and how international best practice has been used to design a voluntary commitment program to reduce food waste in Australia.

[6] **Source**: Champions 12.3 – The business case for reducing food loss and waste (2017).

[7] Source: Inside FMCG – 11 September 2019 (based on SAI Global survey of 1,008 Australian adults) - Aussie shoppers want supermarkets to cut food waste

[8] Source: Fight Food Waste CRC: Food Waste – Australian Household Attitudes and Behaviours – National Benchmarking Study

3. Establishing a voluntary commitments program to reduce food waste

Voluntary commitments provide a tried and tested implementation vehicle to reduce food waste. For example, in the UK, the first 10 years of WRAP's Courtauld Commitment reduced avoidable food waste by 28%, saving consumers and food businesses $12 billion and reducing GHG emissions by 11Mt CO_2e emissions.

The voluntary commitment program in Australia will play a significant role in delivering the national target to halve food waste by 2030. It builds on the experiences and assessment of established voluntary commitments in over 20 other countries.

The Framework for Action contained in the National Food Waste Strategy highlights the importance of reliable data, encouraging collaboration and innovation, supporting technology adoption, changing consumer and workforce behaviour and maximising the economic and societal value of surplus food and food waste streams. International experience has shown the value of voluntary commitments in delivering **all** of these objectives.

Voluntary commitments are increasingly being used as an alternative to legislation and regulation, and as a means to achieving a range of social, ethical, environmental and economic objectives. These objectives include driving waste prevention, promoting energy efficiency or water stewardship, fair trading practices, economic and social development, food security, the landscape scale management of natural resources, stopping global deforestation and tackling climate change.

As the name suggests they are voluntary, not mandatory and are non-legal in nature (i.e. they are not legally enforceable). They can be agile and flexible enough to respond to changing policy, business and societal needs[9]. However, they can be structured and monitored sufficiently well to provide enough transparency of individual and collective signatory performance over time, including internal benchmarking and collective reporting of progress.

3.1 The role and benefits of a voluntary commitment program

The **role** of the voluntary commitment program is to:

- Help deliver the National Food Waste Strategy and the UN SDGs by 2030.
- Move food waste up the food recovery hierarchy.
- Maximise economic and social returns and minimise environmental impact.
- Act as the delivery vehicle for whole food value chain collaboration and action.
- Build trust and confidence amongst food businesses, governments and consumers.
- Establish new pre-competitive partnerships.
- Generate new data and insight, allowing the tracking of progress over time.

[9] EU REFRESH Policy Brief, March 2019: Voluntary Agreements as a collaborative solution for food waste reduction.

- Share best practice and mainstream solutions.
- Provide an opportunity for food businesses to benchmark their performance and get targeted information on how to improve their performance.
- Drive the pace and scale of change.

The **benefits** of a voluntary commitment program:

- Reducing food waste is the third most effective way to combat climate change (after refrigerant management and using onshore wind turbines to generate renewable energy)[10].
- Involves actors throughout the food value chain, from farmers and growers, to food manufacturers and food service companies, wholesalers, retailers and consumers, to work on common problems and find and test the most effective solutions.
- Adaptable to any political or operational environment.
- Provides a flexible, agile delivery framework for collaborative action by governments, businesses and others, while also providing certainty to enable industry to commit to investments.
- Avoids the need for legislation or regulation and can also be used to support the delivery of existing or planned policy goals or targets, business objectives and consumer needs.
- Can be used to set common, more ambitious and 'signatory relevant' targets than those currently enshrined in legislation, if signatories to the commitment are amenable to this.
- Provides a framework to work with the Commonwealth Government, States and Territories and local government to agree and align the policies, targets, infrastructure and services required to halve food loss and waste in Australia.
- Saves time – voluntary commitments can catalyse and embed change in a shorter space of time than is usually the case with introducing new legislation or regulation.
- Recognises different organisations are at different stages in the food waste journey and provides a safe space for experimentation, collaboration and the exploration of solutions.
- Can be phased over time to keep delivery manageable and respond to changing priorities and circumstances and new areas of interest.
- Can be composed of a range of research and delivery activities from working groups, demonstration projects, collaborative working in shared value chains, corporate implementation programs, and supporting behaviour change campaigns.

The vision and objectives of the voluntary commitment program are summarised in **Figure 4** below.

[10] See *Project Drawdown* ranking of climate solutions: https://www.drawdown.org/solutions

Figure 4: the vision and objectives of the voluntary commitment program

3.2 The structure of the voluntary commitment program

The voluntary commitment program has been designed with four main work program areas that aim to normalise consideration of food waste in business policies, practices and processes, from product design, buying and sourcing to collaboration and innovation projects with supply chain partners, behaviour and culture change initiatives and finding new ways to unlock the societal and economic value in surplus food and food waste streams (see **Figure 5** below).

The structure of this voluntary commitment program supports food waste reduction, circular economy, sustainable food system and food security objectives and recognises that based on experience in other countries and in Australia:

- **80%** of the environmental impacts and benefits of products and services are determined in the early design stages.
- **Changes in commercial supply practices** can improve food value chain resource efficiency by up to **25%.**
- **Whole chain resource efficiency** projects can unlock significant additional value for food value chains (e.g. **5-25%** increases in crop / livestock utilisation).
- **Changing behaviours** in Australian homes and businesses can deliver significant waste savings (circa **25-40%** from experience in other countries).
- **An increase in the food rescue and relief sector** could help to deliver Australia's 50% food waste reduction target by 2030, if critical barriers, like tax reform and infrastructure funding, can be unlocked through the concerted and coordinated efforts of signatory organisations, including food rescue and relief organisations and donor companies.
- **Valorisation of food waste streams** can lead to the creation of new co-products for the food industry and other sectors of the economy, creating new business opportunities and jobs.

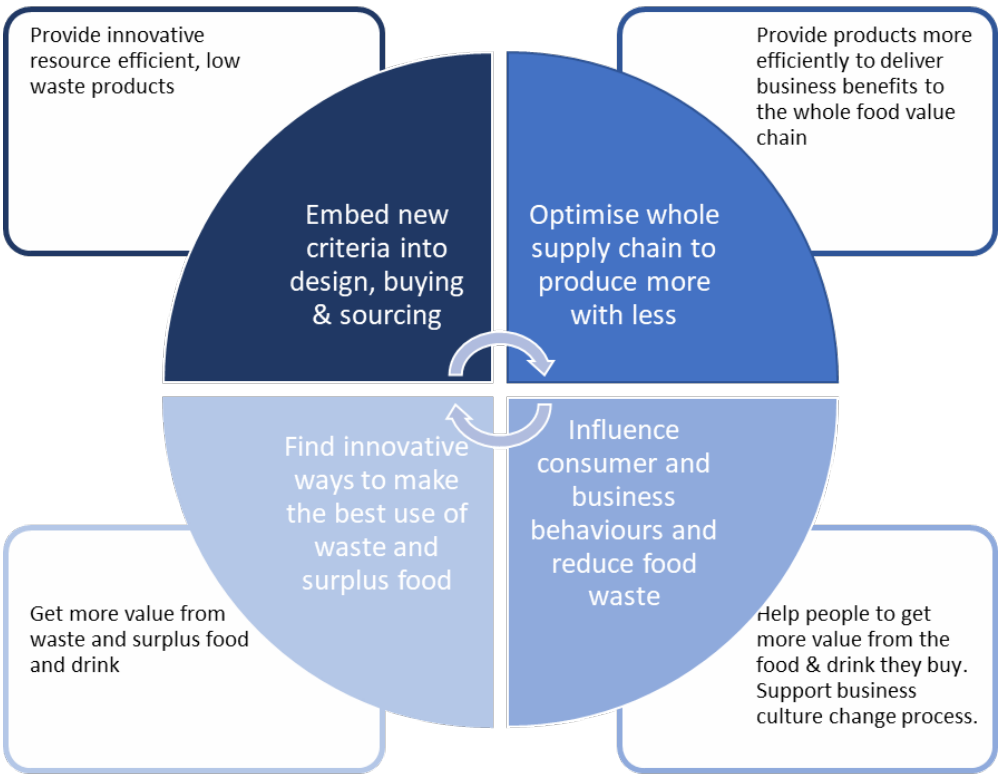
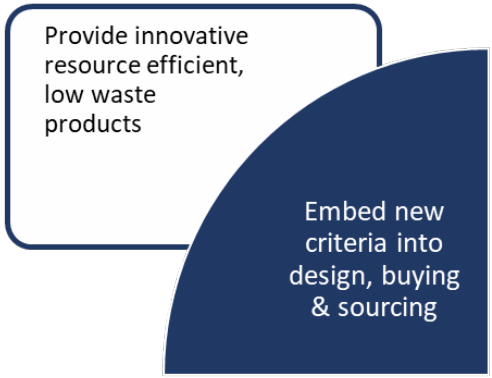


Figure 5: summary of the four main components in the voluntary commitment program that signatories are required to participate in and their intended outcomes. It provides the flexibility to allow signatories to focus on activities that generate the most impact in their own organisations and across the food value chain.

Figure 6, Figure 7, Figure 8 and Figure 9 below provide examples of some of the indicative activities for each of the four programs of work under the voluntary commitment program.

Figure 6: indicative activities for program area on embedding new criteria into design buying and sourcing in the voluntary commitment program



Sustainable product design

- Product development workshops
- Embedding resource efficiency and low waste concepts into new product development (NPD)
- Product benchmarking
- Innovation workshops and road-mapping

Buying and sourcing

- Review guidance to buyers and product specifications to identify opportunities to reduce waste
- Reviewing food waste hotpots in different sourcing regions and work with suppliers to achieve best-in-class outcomes

Example implementation companies:

Supermarkets and brands

Supermarkets, brands & food service

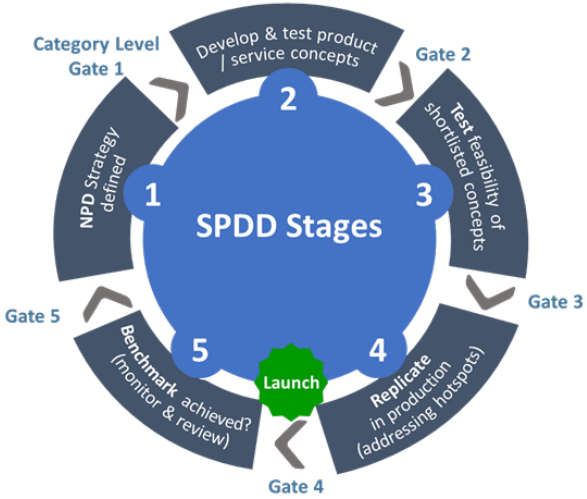
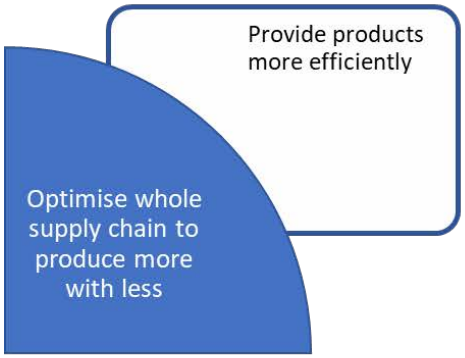


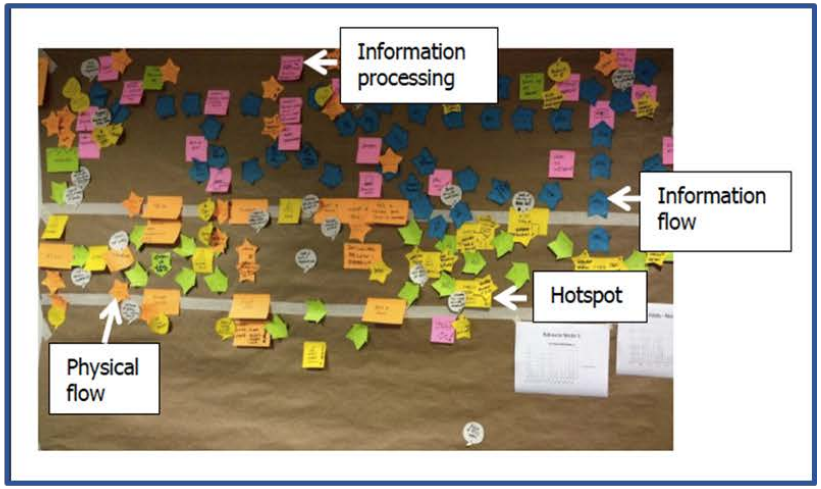
Figure 7: indicative activities for program area on optimising the whole of supply chain to produce more with less in the voluntary commitment program



Whole chain resource efficiency

- Value chain waste mapping
- Lean and green auditing
- Solutions development, piloting and embedding / mainstreaming

Value chain waste mapping process*



01 Problem definition

02 Mapping exercise

03 Hotspot analysis

04 Root cause analysis

05 Solution generation

06 Trial/embed change

*Sometimes also referred to as 'value stream mapping', 'green and lean supply chain auditing' or 'whole chain resource efficiency'

Figure 8: indicative activities for program area on influencing consumer and business behaviour to reduce food waste in the voluntary commitment program

Influence consumer & business behaviours and reduce food waste

Help people to get more value from the food & drink they buy. Support business culture change process.

Consumer insight

- Behavioural / attitudinal analysis study and behavioural baseline setting (stated behaviour)
- Household food waste compositional analysis (actual behaviour)
- Regular tracking of attitudes, knowledge and behaviours

FFW CRC ENGAGE

Consumer-facing campaign

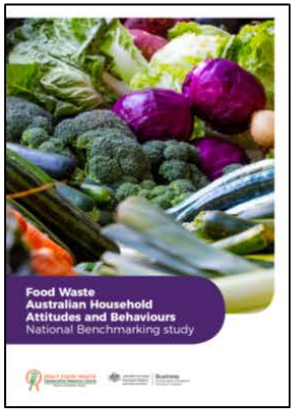
- Love Food Hate Waste campaign
- Fight Food Waste campaign
- Complementary food business campaigning
- States and Territories activation
- Local Government activation
- Specific themes & messaging to drive change in key behaviours

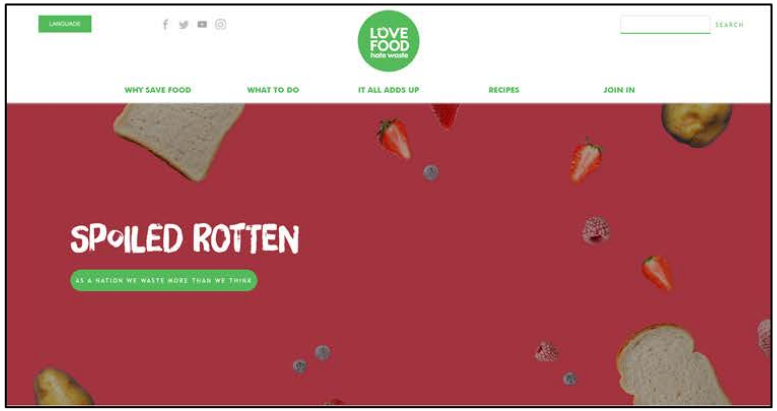
LFHW, Fight Food Waste, etc.

Business-facing campaign

- Guardians of Grub (industry)
- Individual food business activation
- Potential for States and Territories to coordinate activity in key production zones
- Specific themes & messaging to drive change in key behaviours

Guardians of Grub, etc.





Source: Fight Food Waste CRC: Food Waste – Australian Household Attitudes and Behaviours – National Benchmarking Study

Figure 9: indicative activities for program area on finding innovative ways to make the best use of waste and surplus food in the voluntary commitment program

3.3 What commitments are we expecting signatories to make?

Table 2 below highlights the commitments that signatories to the voluntary commitment program could make to become effective contributors to the delivery of the national 50% food waste reduction target; and includes illustrative example commitments.

Signatory commitments	Illustrative examples of commitments that could be made
Collaborate and create new partnerships to innovate and drive change in a safe, pre-competitive environment	• We will establish at least three new open innovation partnerships with our peers and supply partners to reduce food waste in our value chain by x% by 20xx. • We will actively seek opportunities to co-specify and co-invest in better food cold chain infrastructure and equipment with other signatories and our supply partners to reduce food waste in our food cold chains.
Set targets and quantify their food waste using the World Resources Institute's Food Loss and Waste Accounting and Reporting Standard[11].	• By 20xx we will set targets to reduce food loss and waste in our own operations by xx%. • By 20xx no food safe for human consumption will go to waste. • By 20xx our ambition is to generate A$xxxK in additional value from waste valorisation projects and the commercialisation of new co-products derived from surplus food and food waste streams. • By 20xx we will have used the FLW Accounting and Reporting Standard to quantify food loss and waste in our own operations and communicated our food loss and waste baseline to the VCP delivery team. • By 20xx we will have extended the scope of our quantification work to cover 50% of our own brand products. • By 20xx we will have worked with xx supply partners to identify and address food waste hotspots in product categories that represent 25% of our total quantified food waste baseline.
Focus on ways of working that deliver whole of supply chain solutions, wherever possible.	• We will work with our supply partners and the VCP delivery team to identify food waste hotspots in our value chain and identify and trial solutions to them. We will embed successful trials across our business and share our learning with other signatories at signatory workshops, conferences and in the form of case studies. • By 20xx, we will trial whole crop purchase arrangements with the farmers and growers in four of our fresh produce value chains with the goal of increasing crop utilisation by 25%, significantly reducing on-farm crop loss and waste.
Agree future activities to reduce food waste.	• We will agree to an initial implementation plan with the VCP delivery team and work collaboratively with them to realise the food waste saving opportunities we have agreed to pursue. We will review the progress we are making

[11] Please visit the Food Loss and Waste Protocol website (https://flwprotocol.org/) to view the standard and a range of supporting resources and case studies on how leading food businesses have used the Standard.

Signatory commitments	Illustrative examples of commitments that could be made
	against our plan every six months and agree an updated plan with the VCP delivery team in the budgeting period preceding the next financial year to ensure that we have the resources at our disposal to deliver our plan. • We will work with the New Product Development and Innovation Manager in the VCP delivery team to embed consideration of food waste into our existing and new product development (EPD and NPD) process by 20xx and pilot this new process with xx of our major supply partners. • We will report the proportion of our own brand products that have gone through the new NPD process each year, including x best practice case studies that we would like to showcase to other signatories or publicly. • Support consumer and business-facing awareness-raising and behaviour change campaigns.
Establish a food waste baseline specific to their business, and regularly review the baseline in the light of better evidence, as well as report annually on the progress they are making to reduce food waste	• We will regularly review our baseline in the light of new data and insight and communicate any significant changes (>5%) to the VCP delivery team. • We will report annually to the VCP delivery team on the progress we are making towards our food waste reduction target, providing at least x case studies of our work each year.
Maximise the potential to donate surplus food to food rescue and relief organisations and farmers (animal feed)	• We will set-up the business policies and processes, partnerships and infrastructure to maximise the potential for donating safe surplus food to food rescue and relief charities and to farmers for use as animal feed. • We will encourage our staff to volunteer xx days a year with our food rescue and relief partners. • We will seek to grow our donations of surplus food; and offer space on our logistics fleet and in our distribution centres where it is available to maintain the quality and shelf-life of donated food.
Explore the potential to create new value from co-products derived from food waste streams	• By 20xx we will have worked with the Valorisation Manager in the VCP delivery team to identify waste valorisation opportunities with a net value of A$xxxK. • We will co-chair a VCP working group to realise fresh produce co-product opportunities.

Table 2: Proposed signatory commitment areas and illustrative examples of how commitments might be framed

The **Target, Measure, Act** approach embedded in the Food Loss and Waste Accounting and Reporting Standard has been successful all over the world in helping agri-food businesses to better understand and reduce their food waste; at the same time as supporting the delivery of the policy and strategy objectives of national, state and local governments and NGOs – and meeting the expectations of their customers and consumers.

Signatories report on progress against an agreed program of actions in reducing their food waste. This transparent monitoring and reporting against agreed individual and collective actions provides much needed evidence to track and report progress against collective food waste reduction targets and a trajectory to be agreed with signatory organisations.

3.4 What support would signatories receive in return?

Signatories to the Voluntary Commitment Program will receive support from an expert implementation support team within the governance entity overseeing the delivery of the national target, who will work alongside their own teams to establish the food waste reduction activities that form part of each organisation's implementation plan. They will also be encouraged to work with relevant state-based and local government programs where these exist. Signatories will also benefit from the research done by others and the tools and resources developed by the governance entity as part of this pre-competitive program. They are free to mainstream the findings from pilot projects in their own operations and value chains and promote their own efforts and those of partners in the market.

Table 3 below provides additional information on the range of support that organisations joining the voluntary commitment program could expect to receive.

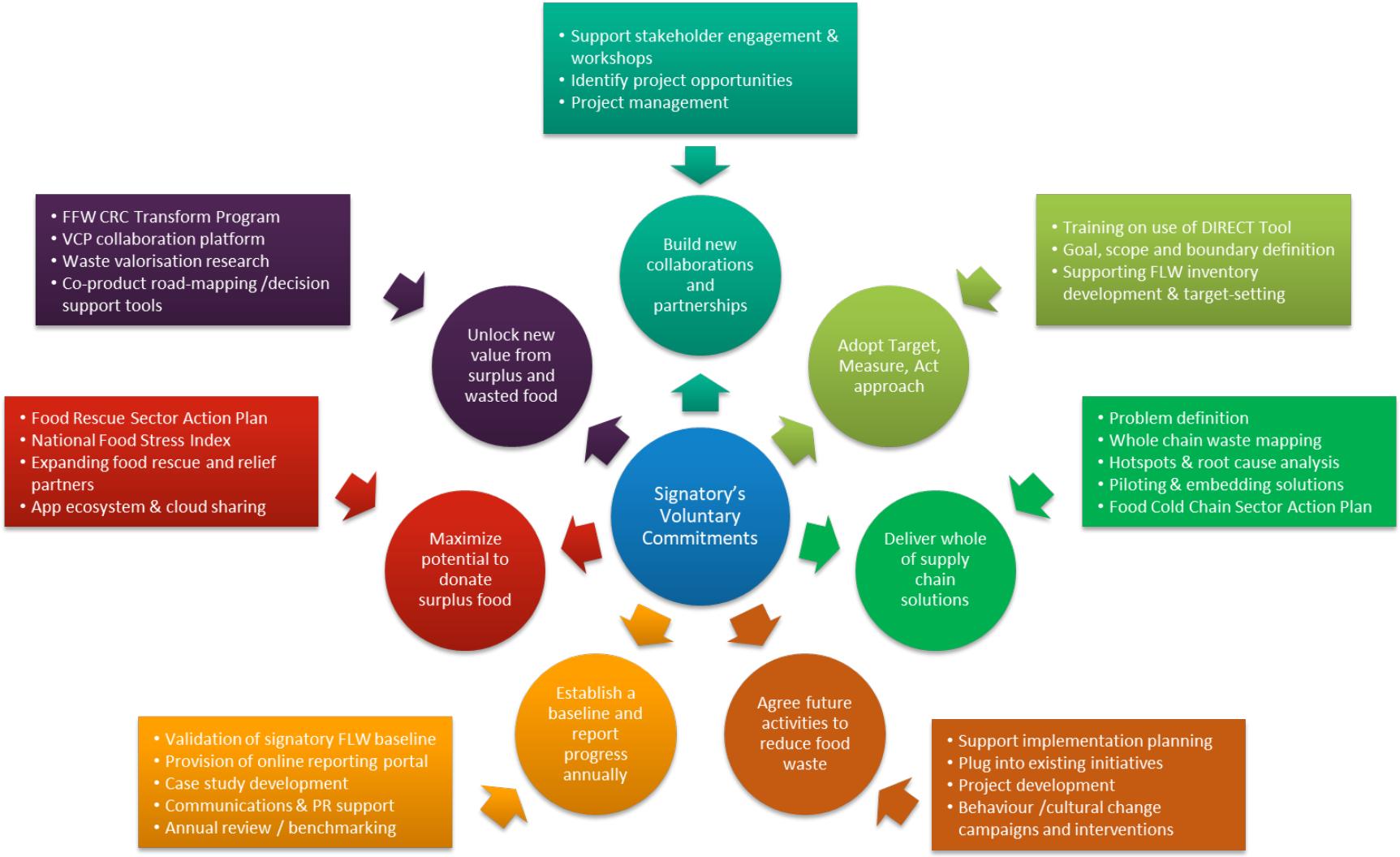
Figure 10 below illustrates the 'give and take' of the voluntary commitment program, drawing on the illustrative examples of signatory's commitments and the support that organisations joining the voluntary commitment program can expect to receive.

Table 3: Examples of the type of support available to organisations joining the voluntary commitment program

Stages in the voluntary commitment process	Examples of support available to organisations joining the voluntary commitment program
Engagement and recruitment	• Face-to-face briefings and presentations through peak industry bodies, or directly to prospective signatory's operational teams and senior decision-makers • Supporting individual business case development (where required) • Provision of recruitment pack, template commitment letters and press releases, etc.
Key account management	• A designated focal point of contact with the VCP delivery team, conduit to delivery team expertise and specialist external expertise if required • Scheduling of regular meetings, helps to coordinate internal teams and projects where required • Highlights potential research projects and piloting activities of interest to signatory • Manages reviews, approvals and signatory feedback on implementation plans, VCP projects and pilots, research reports, press releases, annual progress reports, case studies, etc.
Implementation planning	• Provision of implementation plan template and briefings on how to start and complete the process • Support and facilitate internal and external stakeholder engagement and help to identify signatory priorities, existing activities and pre-competitive collaboration opportunities (e.g. through workshops and webinars) • Help to identify existing external initiatives (e.g. industry and State-based initiatives, Love Food, Hate Waste campaign) that could be incorporated into signatory's implementation plans • Help to identify initial range of projects and activities (and their likely impact) that form the basis for the implementation plan and that contribute to the national target to halve food waste by 2030 • Finalising content, securing approval and agreement and communicating the plan to signatory teams
Quantification, baselining and target-setting	• Expert support in scoping, boundary and goal setting, selecting the most appropriate accounting and reporting principles and methodologies for each signatory, calculating and building a food loss and waste (FLW) inventory, dealing with imperfect data, uncertainty and assumptions, reporting and performance review • Access and use of the Fight Food Waste CRC's DIRECT Tool to support quantification of food loss and waste, development of an inventory of food loss and waste and identifying solutions to food waste

Stages in the voluntary commitment process	Examples of support available to organisations joining the voluntary commitment program
Program and project management	• A dedicated program and project management team to help deliver collaborative projects under the VCP; and larger / more complex programs of work instigated by signatory organisations • Project and program monitoring, evaluation and reporting
Expert support	• Expert support will be available from within the delivery team in the following areas / topics: o New product development and innovation, product category reviews o Packaging technology, systems and innovation o Agricultural science and technology and agronomy o Food science, safety and technology o Value chain waste mapping and lean manufacturing, including hotspots and root cause analysis o Data gathering, analytics and visualisation o Waste valorisation research and co-product development and road-mapping/decision-support tools o Consumer insight, behavioural science and testing/scaling of behavioural interventions with signatories o Technical research and technology appraisal o Stakeholder engagement, workshop planning and facilitation • Additional specialist expertise can also be drafted in to support signatories where the impact of a project or initiative justifies this
Reporting	• Independent review of individual signatory FLW reporting • Assistance with compiling your annual progress report to the governance entity overseeing the delivery of the NFWS Roadmap (NOTE: an online reporting portal may be available to signatories via the DIRECT Tool).
Tools, guidance and resource development	• Leading or supporting the develop of best practice guidance (e.g. food labelling, food cold chain compliance); tools and resources (e.g. decision trees, checklists, packaging innovation databases, food waste impact calculators, product and supermarket surveys)
Communications, campaigns and events	• Licensing of Love Food, Hate Waste / Guardians of Grub campaigns (consumer and business-facing) • PR and communications support; and use of VCP branding and materials • Seminars, signatory workshops and brainstorming sessions, annual signatories conference to share learning

Figure 10: the 'give and take' of the voluntary commitment program, with illustrative examples of potential signatory's commitments and the support that organisations joining the voluntary commitment program can expect to receive



4. Delivering the voluntary commitment program: guidance and recommendations for a future governance and delivery entity

The following sections offer guidance and recommendation to a future governance and delivery entity charged with delivering the activities and initiatives included in the National Food Waste Strategy Roadmap (published in March 2020), including the voluntary commitment program proposed in this paper.

Subject to funding being available to implement the voluntary commitment program, the development of the program should follow a process that reflects international best practice drawn from the experience of over 20 countries and codified as part of the EU REFRESH Project as shown in **Figure 11** below. Whilst **Figure 13** below provides an indicative development and launch timeline for the voluntary commitment program, subject to implementation funding being made available.

The following sections cover the governance requirements for the voluntary commitment program, critical success factors, underpinning operating principles, target companies and organisations, the likely phasing of the voluntary commitment program from 2020-2030 and initial thinking on target setting and the use of a balanced scorecard approach.

Source: EU REFRESH: *Building Partnerships, Driving Change – A voluntary approach to cutting food waste* (2019)

Figure 11: Five key steps to developing a voluntary commitment program to reduce food waste, with process step checklists and milestones (EU REFRESH Project 2019)

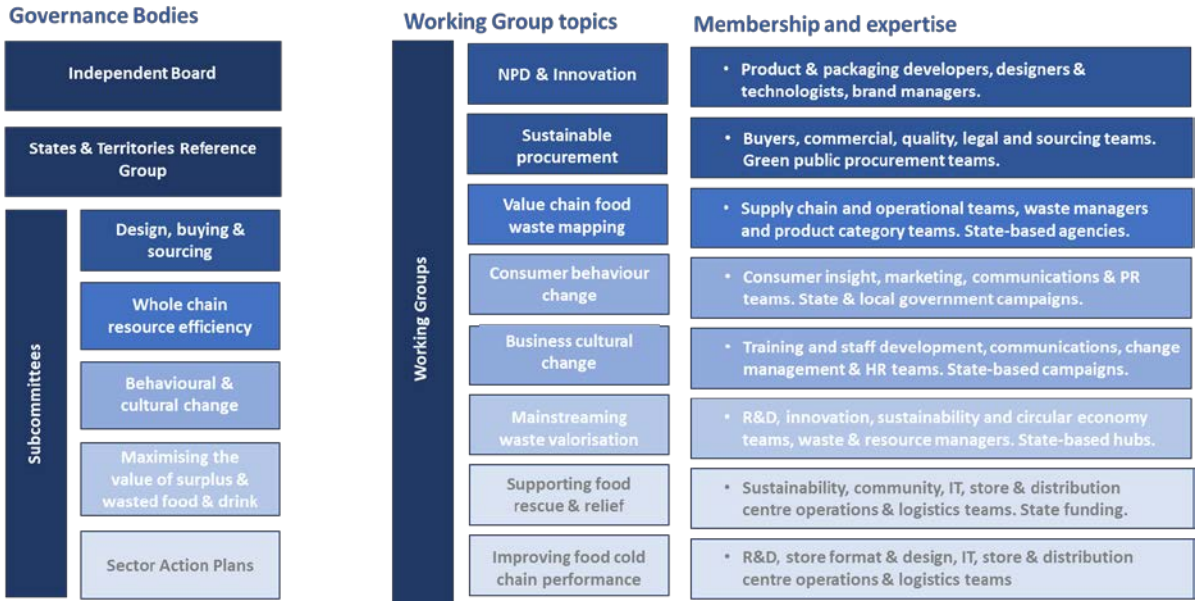
4.1 Independent lead organisation and governance model and structure

In most existing examples of voluntary commitments, the governance model and structure reflect in some way both the sources and composition of funding. It is common to have an

independent board or steering committee that provides direction and / or guidance to those running the voluntary commitment program. Usually this board or steering committee is made up of 7-10 members. Whilst focussed sub-committees or working groups help to coordinate and deliver different workstreams within the voluntary commitment framework. Subcommittee or working group chairs would usually have a seat on the independent board or steering committee to communicate progress and receive feedback and direction.

Figure 12 below provides an illustrative example of the governance structure for a voluntary commitment program, including the role of the governance entity and that of experts representing signatory organisations.

Figure 12: illustrative example of the governance structure for a voluntary commitment program



It is widely recognised that strong leadership and effective management by the independent third party charged with delivery is the central critical success factor in any voluntary commitment program. And in cases where a strong coordination function is required to deliver the collective impact of the voluntary commitment and / or a quick decision-making process is required, a model with one lead organisation, independent of government and business is generally considered more appropriate[12],[13],[14].

[12] Cristina Osoro and Kate Bygrave (2016): Inventory and evaluation of effectiveness of existing approaches to voluntary alliances – EU REFRESH. This assessment and evaluation included 18 voluntary alliances, commitments and agreements.

[13] Piras, S., et al (2018). 'Unfair Trading Practice Regulation and Voluntary Agreements targeting food waste: A policy assessment in select EU Member States', EU Horizon 2020, D3.2 REFRESH. https://eu-refresh.org/sites/default/files/REFRESH_D3.2_UTPs%20and%20VAs%20targeting%20food%20waste_07.2018.pdf

[14] Food and Agriculture Organization of the United Nations, Think.Eat.Save Guidance, 2014.

Figure 13: indicative development and launch timeline for a voluntary commitment program to reduce food waste (subject to implementation funding)

Key: VCP = Voluntary Commitment Program; MERI = Monitoring, Evaluation, Reporting and Indicators Framework

The role of an independent third party is crucial in managing the voluntary commitment program, notably to:

- Service the governance structure – e.g. plan, set-up, facilitate, record and chase actions from meetings, workshops and conferences.
- Engage, recruit and manage relationships with signatory organisations.
- Support programs of work and specific projects with signatories and their value chain partners.
- Collect, analyse, manage and ensure the security of signatory's confidential data and information, and that enough progress is being made against the targets and objectives of the voluntary commitment.
- Liaise with other relevant organisations – for example, the Fight Food Waste CRC, Food Innovation Australia Limited (FIAL), the Australian Institute of Packaging (AIP), CSIRO, APCO, other CRCs and Industry Growth Centres, RDAs for profit, peak industry bodies, etc.
- Coordinate internal and external communications.

In existing voluntary commitment programs, this third-party lead organisation can be a company, a university, research institution or another independent organisation. The neutral stance of the lead organisation is a fundamental marker of trust with signatory organisations in different parts of the food value chain, ensuring unbiased consideration of their different perspectives and concerns, the setting of collective objectives and targets and agreeing the means to deliver them. Having an unbiased, independent third party running the voluntary commitment program also helps to garner trust amongst signatories as the voluntary commitment is shaped and delivered; and provides assurance to those signatories sharing commercial confidential information, such as sales data, information on product innovation or key supply partners; or existing and future organisational strategy.

4.2 Critical success factors

Based on a review of the voluntary commitment programs in over 20 other countries[15] and our experience of successfully delivering voluntary commitments elsewhere, the critical success factors required to develop, operate and manage a voluntary commitment program in Australia are as follows:

- **A clearly defined timeframe, target and membership**: e.g. as per experience with the UK's Courtauld Commitment, the Taskforce Circular Economy in Food (Netherlands), Norway's

[15] This international review was based on three studies by the following organisations: EU REFRESH Project (2016 and 2019 respectively): *Inventory and evaluation of effectiveness of existing approaches – Determine context and success factors of voluntary alliances* and *Voluntary agreements as a collaborative solution for food waste reduction*; and Sarah May (October 2018): *Investigating international models for reducing food waste*; and well as personal communications with WRAP and Zero Waste Scotland (UK), REFED (USA) and Food Waste Reunited (The Netherlands).

Food Waste Agreement and Charter (Norway), the Retail Action Group (Ireland) and the Food Loss and Waste Champions (USA).

- **An independent, third party lead organisation**: seen as neutral, trusted and able to build trust amongst signatories. Providing strong leadership/management, capable of agile decision-making and able to ensure they all key stakeholder groups are included and able to shape important discussions around the activities and initiatives required to deliver the voluntary commitment program.
- **Strong government support; and financial support from government and signatories over time**: with good links to policy and strategy, sufficient funding to build confidence and provide longevity.
- **Set-out clear operational priorities and governance; and build agreement around them**: providing a clear sense of direction and being clear about what needs to be done by who and when, combined with an inclusive and responsive governance structure.
- **An effective monitoring, evaluation, reporting and indicators (MERI) framework that allows for reporting of progress**: aggregated public reporting of progress and impact, supported by individual case studies. Can evolve to individual signatory reporting at some stage when the voluntary commitment is more established and there is an appetite to do so.
- **Establish a pre-competitive environment that allows food value chain actors and others to work together**: balancing the need for collective problem solving with individual signatory approaches to delivering any solutions identified, allowing for differentiation in the market.
- **Provides a confidential space for open discussions**: creating a safe space for signatories to openly share challenges and discuss how to address them in order to achieve food waste reductions.
- **Underpinned by roadmaps, which are a powerful way to provide confidence and direction to signatories and prioritise delivery**: developing an implementation roadmap with a clear trajectory, interim milestones and targets provides a solid structure for signatories to work against.

4.3 Underpinning operating principles

The following are proposed as the underpinning principles for the development and delivery of the voluntary commitment program:

- Take a **whole chain approach** to maximise impact
- **Play in the pre-competitive space** to drive collaboration and compliance with competition and anti-trust laws
- Adopt the **Target, Measure, Act** approach, in line with international best practice
- **Move food and food waste up the food recovery hierarchy**

- **Maintain focus**: use hotspots analysis and whole food chain resource efficiency tools to prioritise action in high impact/high waste/high value product categories
- **Make it as easy as possible** to engage with and participate in the program
- Encourage the **sharing** of proven practice and learning
- Be **open-minded** about the future.

4.4 Target companies and organisations

In line with international best practice, the first phase of the voluntary commitment program (2020-2023) should focus on recruiting the Top 4 Australia food retailers and wholesalers (e.g. Woolworths, Coles, ALDI and Metcash/IGA) and some of the largest hospitality and food service companies in Australia (e.g. Sodexo, Unilever, Nestle, Compass) and their 10 largest supply partners (e.g. Goodman Fielder, Lion, Fonterra, Simplot, George Weston Foods, Coca Cola and Nestle).

This approach mirrors the approach taken in most other countries and reflects the importance of securing major retailers and hospitality and food service companies as the most significant influencers and drivers of change in both the upstream food value chain (supply partners) and downstream value chain (businesses that rely on catering partners and suppliers and consumers), whether they be eating and drinking at home, at work or in bars, restaurants and hotels.

In addition to directly engaging with individual agri-food sector companies, the support of peak industry bodies, like the National Farmers Federation, the Australian Food and Grocery Council and the National Retail Association will be critically important, as they provide an opportunity to engage with and recruit their sub-sector bodies or members via relevant committees to participate in the voluntary commitment program.

The support and participation of relevant state-based departments and agencies and local government at an early stage will also facilitate on-the-ground coordination and delivery of work programs under the voluntary commitment framework, including local and regional activation of behaviour change campaigns, food innovation and transformation hubs, etc.

A fuller list of target companies and organisations would be developed by the governance entity responsible for the voluntary commitment program once they are appointed and operational.

4.5 Phasing of the voluntary commitment

It will be necessary for the voluntary commitment program to be delivered under a series of 3-4 year operating plans, in part to recognise the need to secure ongoing implementation funding from different sources; and, in part, to reflect the need to adapt the delivery program as a result of changing circumstances and priorities; or to fill gaps in implementation activity; or to amplify and build on successful initiatives. In the first instance, a four-year operating

plan is suggested to provide the confidence to those involved that the voluntary commitment program can be sufficiently resourced and funded to deliver Australia's target to deliver a halving of food waste by 2030 (see **Section 6** below for more information on ensuring the voluntary commitment program is sufficiently resourced and funded over time).

4.6 Target setting framework and the use of a balanced scorecard approach

Whilst the primacy of the halving food waste by 2030 target remains in place, discussions with the National Steering Committee for the National Food Waste Strategy, State and Territory Governments and Local Governments suggest that any target setting framework needs to take account of the existing investments, actions and initiatives of stakeholders, whilst at the same time maintaining delivery momentum and shifting the focus to those activities and initiatives that prevent food waste, reuse food waste or create opportunities for new high value co-products from surplus food and food waste – i.e. those things in the food recovery hierarchy that count towards the delivery of the target. A balanced scorecard approach has been recommended as the way to balance all of these needs.

An example of a balanced scorecard approach, developed during a workshop on target setting and governance in September 2019, is provided in **Table 4** below. Please note that the content of the Balanced Scorecard contained within the table represents a synthesis of all the ideas put forward at the workshop and represents the range of views on the level of ambition against each target from the workshop participants. The balanced scorecard approach will be refined in due course to reflect stakeholder feedback as part of FIAL's work on a MERI framework for the National Food Waste Strategy.

It should also be noted that a balanced scorecard approach could be used to set targets and objectives to reduce food loss and waste at different stages in the food value chain.

Table 4: illustrative example of a balanced scorecard approach to target setting based on targets and objectives being set for each of the levels of the food recovery hierarchy.

		Target	*Baseline*	2022	**2030**
Prevention	1.1	Prevent the generation of Food Waste across the supply chain	N/A	10%	50%/35%
	1.2	Reduce food waste in primary production, including fisheries and aquaculture		10%	50%/25%
	1.3	Reduce food waste in manufacturing			
	1.4	Reduce 'per' household food waste		5%/10%	35%
	1.5	All States and Territory's implement consumer education plans			
	1.6	Revise agricultural standards/processing standards			
	1.7	Determine value of waste in manufacturing			
	1.8	Reduce food loss through cold chain efficiency		25%	
	1.9	Revise cosmetic quality standards for fruit and vegetables		20%	
Reuse	2.1	Food Rescue	48	30%/3-4 fold	80%/10 fold
	2.2	Secondary reseller			
	2.3	Biomaterials - High valorisation		5%	25%
	2.4	Increase utilisation of manufacturing waste streams		30%	
	2.5	Increase food waste to animal feed	3934	30%	
	2.6	Higher valorisation of on farm/ post-harvest biomass		5%	
	2.7	Regional valorisation hubs (food processing)		20%	
Recycling	3.1	Food waste to accredited compost facility	992	40%	90%
	3.2	Increase valorisation of waste streams			10% in volume, 20% in value
	3.3	Increase consumer access to FOGO		50%	90%
Recovery	5.1	Increase use of organics in AD		20%	
	5.2	Increase provision of collection systems to households		50%	
Disposal	7.1	Reduce food waste to landfill	3070	10%	
	7.2	Ban food waste to land fill	3070	40%	100%

5. Ensuring long-term funding

Ensuring the long-term financing and financial stability of any voluntary commitment is critical to its longevity and impact, providing confidence of all those involved that it presents a worthwhile investment of their time and resources and is laying the foundations for long-term change.

In other countries, different funding compositions exist, which can come in the form of donations, grants or governmental funding agreements, can be 100% private sector, 100% public sector, charitable foundation or donor funding or a mix of all of these funding streams. In most cases, seed and some on-going government funding is required to help establish a voluntary commitment program and provide others with the confidence to invest in it over time.

In the medium to long term (4 to 10 years) those responsible for leading the voluntary commitment program should seek to secure diversified funding for it, so it is not dependent on the will of the government or a few actors or signatories.

From experience elsewhere (e.g. the Courtauld Commitment in the UK, The Sustainability Consortium in the USA and the UN Environment Transforming Tourism Project in Asia, Africa and Latin America), the ideal medium-term funding composition is a mix of private and public funding to ensure success whilst maintaining neutrality. Once a voluntary commitment is established, it is often easier to ask signatory organisations to contribute to the costs, once they have seen the value from their participation in the program. This also helps them to feel a greater sense of ownership in the voluntary commitment – but large financial contributors to the voluntary commitment should not have biased representation in it or be in a position to block progress against agreed objectives and targets.

6. Measuring progress and impact

Once collective targets and objectives have been agreed between signatory organisations, government stakeholders and the independent third party running the voluntary commitment program, a clear MERI framework needs to be put in place. This will help to track the impact of signatory actions over time and ensure that agreed targets and objectives will be met or exceeded; or identify where further action is required.

Most early stage voluntary commitment programs tend to use a mix of (mostly) quantitative targets and objectives, with some more qualitative measures, where data does not yet exist or is not sufficiently robust or granular at the launch of the program. This is particularly the case with existing voluntary commitments relating to the reduction of food loss and waste, where many signatory organisations have not gone through a process of quantifying the food loss and waste present in their own operations – or, at a later stage, in their value chains.

It is worth noting that, in some cases, as the quality, granularity and coverage of food loss and waste data improves total waste volumes and composition can go up before the concerted action of signatories delivers the traction to reduce food loss and waste.

Regardless of these individual signatory data challenges, the starting point for an Australian voluntary commitment program would be to use the national food loss and waste baseline developed by Arcadis[16] as the baseline for the voluntary commitment, until such time as better data is available.

Once signatories to the voluntary commitment have quantified their food loss and waste in line with the requirements and guidance provided in the Food Loss and Waste Accounting and Reporting Standard[17], then this data can be used as the baseline. The Standard provides sufficient flexibility in implementation for those signatories seeking to quantify and report their food loss and waste but starting the process at different points on the quantification and data gathering journey. The scope of signatory reporting would be agreed collectively by the signatories to the voluntary commitment and would include consideration of the following:

- The timeframe over which the quantification process took place and for reporting (in existing voluntary commitments this is typically done for the previous full calendar year or financial year, with retrospective reporting – e.g. reporting in April 2021 for the calendar year 2020).
- The material(s) to be included in the accounting and reporting process (e.g. edible and / or inedible fractions of food waste).
- The end destinations for food loss and waste (e.g. proportion or quantity of total organisational or value chain food loss and waste by destination – e.g. surplus food sent to food rescue, surplus food or food waste sent to animal feed, food waste sent for composting or to anaerobic digestion).

[16] Arcadis – *National Food Waste Baseline – Final Assessment Report* (29 March 2019).

[17] WRI FLW Protocol - *Food Loss and Waste Accounting and Reporting Standard Version 1* (2016).

- The boundary that will be covered in the organisation's food loss and waste inventory (e.g. all farms and horticultural sites, all food processing/manufacturing sites, all retail stores and distribution centre sites, all restaurants or hotels involved in domestic production and consumption[18]).

It would then be up to the independent third-party entity managing the voluntary commitment program to publicly report the **collective impact** of signatory actions based on individual signatory data submissions. For example, the entity could report the following on an annual basis:

- Revised baseline data for the voluntary commitment based on new signatory data and new external data sources (e.g. FFW CRC Food Waste Index and DIRECT Tool, proposed National Food Waste Strategy Feasibility Study);
- Annual food loss and waste savings from all signatory activities – to start with, probably expressed simply in metric tonnes and, if possible, the resulting economic and avoided greenhouse gas emissions (CO_2e emissions);
- Tonnes of food waste diverted from landfill by destination (e.g. tonnes of surplus food collected and utilised by food rescue organisations (maybe expressed as meals provided), tonnes of food sent to animal feed or to composting or anaerobic digestion facilities);
- Added value derived from waste valorisation activities (e.g. income from new co-products derived for food waste streams);
- Number of meals donated to food rescue and relief organisations (and maybe at a later stage the social return on investment associated with this); and
- Individual case studies from signatory organisations and innovation showcases.

Figure 14 below summarises the three main models for voluntary commitment reporting currently in existence and makes recommendations for reporting and metrics under the proposed Australian voluntary commitment program.

[18] **NOTE**: it may not be possible for some signatories to separate out the food they produce for the domestic Australian market versus food they export to other markets.

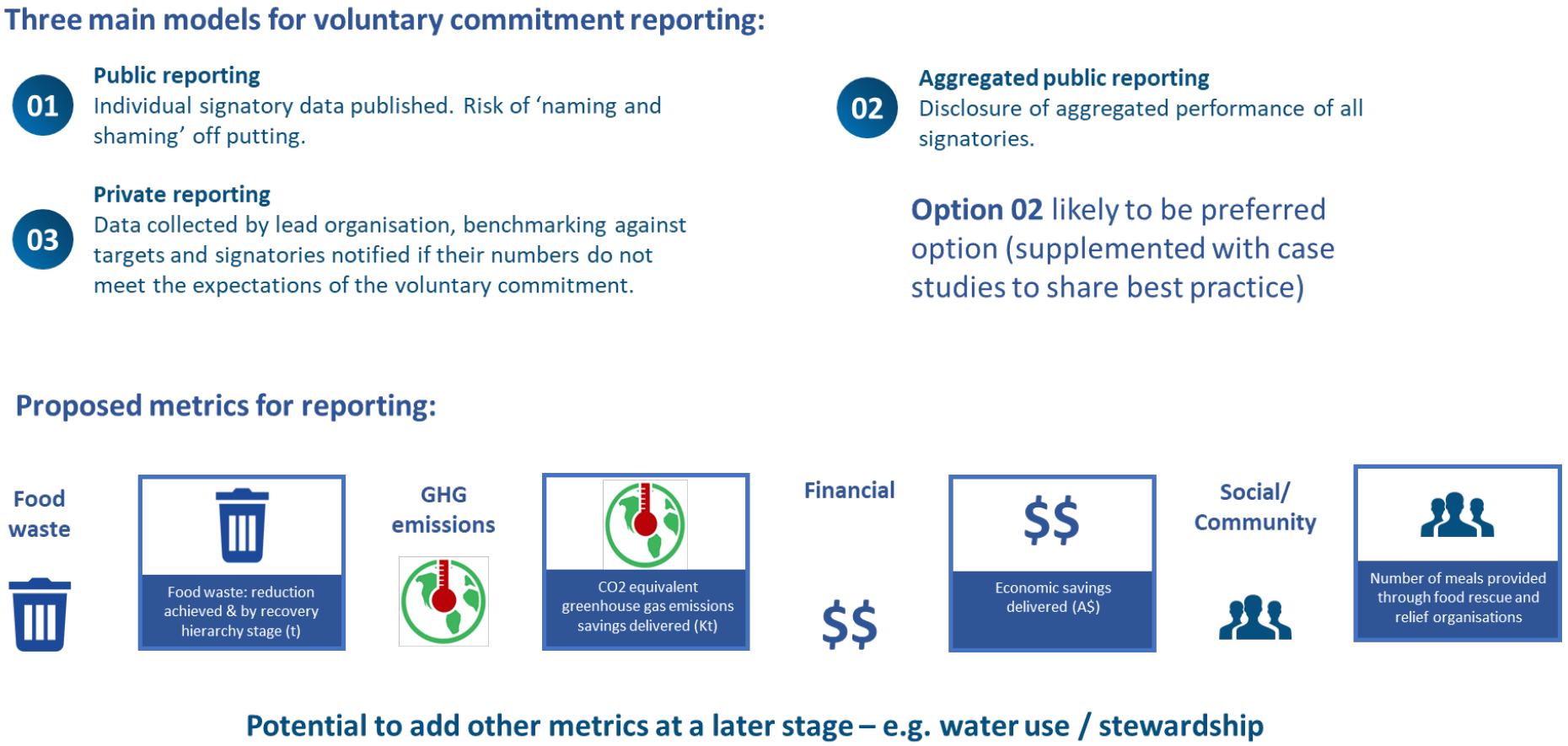


Figure 14: the three main models for voluntary commitment reporting and proposed metrics for reporting

7. Summary and recommendations

The **level and nature of available funding** has a significant impact on the effectiveness, lifetime and success of any voluntary commitment program. **In the majority of cases significant government seed funding has been required** to provide the confidence and credibility necessary to engage and recruit prospective signatory companies/organisations.

Signatories will need to commit their own expertise, resources and funding to make the changes required to reduce food waste in their own operations and value chains. At a later stage, once the voluntary commitment has delivered a return on this investment and provided heightened visibility, the entity leading the voluntary commitment should seek a mix of public and private funding, as this is considered optimal to longer-term success.

The role of an independent third party is crucial in managing a voluntary commitment program, notably to lead signatory recruitment, manage programs of work, support the delivery of signatories implementation plans, ensure the protection of confidential data, and to ensure the delivery of targets, impact and the annual reporting process.

Voluntary commitments should establish **ambitious yet realistic targets**, achievable by their signatories, and **robustness and transparency of data and reporting** should be forefront to ensure the credibility of signatory's initiatives and the program as a whole.

Authors:

- Mark Barthel, Special Advisor, FIAL
- Carolyn Cameron, General Manager – Food Sustainability, FIAL
- Sam Oakden, Manager – Food Sustainability, FIAL

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Annex A: The National Food Waste Strategy and the policy context for reducing food waste in Australia

A1. The policy context and framework for reducing food waste in Australia

As part of the responsible global community, the Australian government signed-up to the UN's Sustainable Development Goals (SDGs). In November 2017, it published a National Food Waste Strategy, committing to halve food loss and waste by 2030, going beyond SDG Target 12.3 below:

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

The Strategy also helps give effect to Australia's obligations under the United Nations Framework Convention on Climate Change to reduce greenhouse gas emissions, primarily through a reduction in emissions that are generated from producing food that is subsequently wasted. This includes emissions in primary production, energy use in processing, distribution, manufacturing and refrigerant gas leakage in cold storage; and through diversion of food waste from landfill, where it decomposes creating methane[19].

Since the publication of the Strategy, Australia's National Waste Policy (2018) has also been published and sets five principles to advance a circular economy[20] in Australia.

These principles support the concept of a food recovery hierarchy that prioritises action on waste prevention, reuse and resource recovery above other forms of waste management e.g. sending waste to landfill and energy from waste; and the importance of providing clear information to consumers to allow them to make informed decisions about the products they buy, store, use, reuse, recycle or dispose of.

And more recently, the National Waste Policy Action Plan 2019 has been published, which further reinforces the principles of the food recovery hierarchy and sets a target to reduce the amount of organic waste going to landfill by half.

A2. Food waste definitions

Clarity around how food waste is defined under the National Food Waste Strategy is also important, as it has an impact on the volume of waste reduction required and, therefore, on our collective ability to deliver the halving food waste target. The Strategy defines food waste as:

[19] The most commonly used refrigerant gases used in supermarkets is R404A, a gas with a global warming potential (GWP) of 3,922 – i.e. every tonne of R404A emitted is equivalent to 3,922 tonnes of carbon dioxide emissions. Whilst methane generated by the decay of food waste in landfill has a GWP of 21.

[20] A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems (Ellen MacArthur Foundation, 2019).

- Solid or liquid food that is intended for human consumption and is generated across the entire supply and consumption chain
- Food that does not reach the consumer or reaches the consumer but thrown away. This includes edible food, the parts of food that can be consumed but are disposed of, and inedible food, the parts of food that are not consumed because they are either unable to be consumed or are considered undesirable (such as seeds, bones, coffee grounds, skins, or peels)
- Food that is imported into, and disposed of, in Australia
- Food that is produced or manufactured for export but does not leave Australia.

This definition excludes food that is produced or manufactured in Australia and is exported and may become waste in another country.

This is a broad territorial definition of what does and does not constitute food waste. It is also important to note that the Strategy adopts 'food waste' as an inclusive term to address both food loss and food waste, so, as it stands, the 50% reduction target applies to food loss in the pre-retail value chain and food waste in the retail and hospitality and food service sectors and in Australian homes.

A3. Surplus food and food waste destinations – what counts towards the target?

Guidance produced by the international coalition, Champions 12.3, on how to interpret UN SDG Target 12.3 is generally accepted as international best practice and has been adopted by most countries and major food businesses that have committed to tackling food waste. **Figure 15** below, is drawn from the Champions 12.3 guidance and shows the limited range of destinations for surplus food and food waste that count towards the delivery of UN SDG Target 12.3; and therefore, by implication, the Australian Government's target to halve food waste by 2030. This makes it clear that the focus in delivering the target needs to be on preventing food waste, redistributing surplus, safe food to people and animals and the creation of high value co-products from surplus food and food waste streams. However, it should be noted that composting food waste; or processing it using anaerobic digestion to create renewable energy, heat and soil improver, are still valuable activities that can reduce greenhouse gas emissions and improve soil health, at the same time as moving food waste up the food recovery hierarchy.

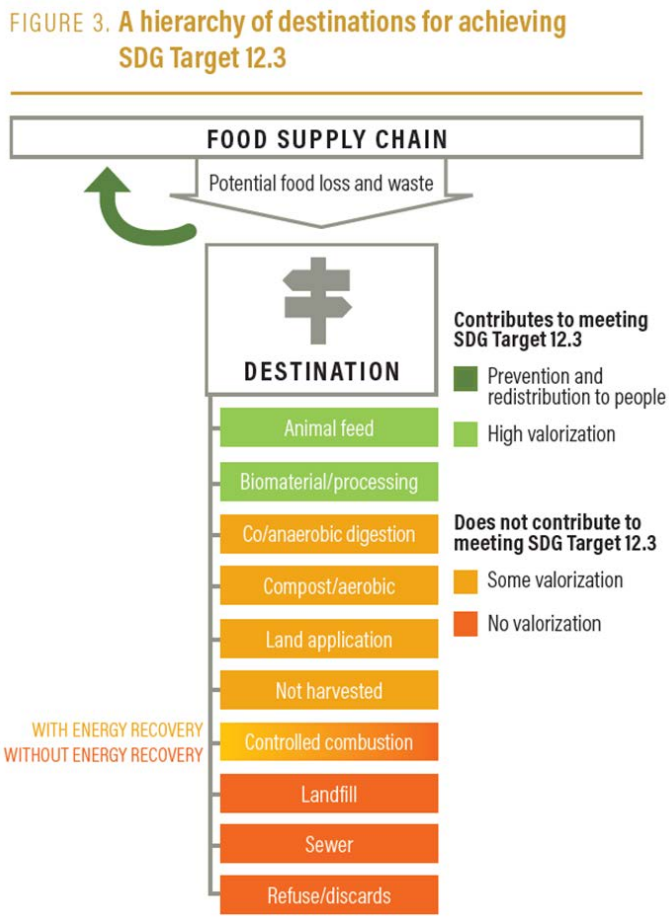

Figure 15**:** surplus food and food waste destinations that contribute to the delivery of UN SDG Target 12.3 (colour-coded in green), from Champions 12.3: Guidance on interpreting Sustainable Development Goal Target 12.3 (September 2017)