Melon Industry Sector Action Plan for Food Waste Reduction 2024

Summary

End Food Waste Australia is leading the development of Sector Action Plans as a key tool to reduce food waste through collaboration across the supply chain.

This Plan was compiled as a End Food Waste Cooperative Research Centre research project led by Central Queensland University, with valuable input from the melon industry. For further acknowledgement, see the inside back cover.

Foreword

Melons Australia is committed to supporting our industry's involvement in Australia achieving its goal to halve food waste by 2030 in accordance with the United Nations Sustainable Development goal 12.3.

This comes with a recognition that this requires the commitment of all commodities and all supply chain actors. We are very pleased to be at the forefront of the horticulture industry, taking tangible steps to contribute to the national target and we are proud to have played an important role in the development of the Australian Melon Industry food waste action plan.

Melons are grown in all states on mainland Australia as well as the Northern Territory and the industry includes a large and diverse range of stakeholders from seed producers to growers, pickers, packers, transporters, marketers and retailers, all of whom have a role to play in this action plan.

Growing melons for food requires financial, human, and environmental resources that do not realise their optimum return if the food is not consumed, so it's not just the food that is wasted.

We acknowledge that by reducing food waste we create opportunities to improve grower profitability, reduce the environmental footprint of food waste and assist those Australians experiencing food insecurity.

We encourage everyone to familiarise themselves with this plan, support future work programs and to take action however and whenever they can.

Jonathan Davey
Executive Officer
Melons Australia

50%

of Australian Households purchased melons at least once in 2022

2021-22 Australian Horticulture Statistics

This summary report is based on the technical report "Akbar, D., Babacan, H., Marty, M., Nguyen, T., Rahman, A., & Brown, P. (2023). The Melon Industry Sector Food Waste Action Plan Technical Report, End Food Waste Australia

Why address melon food waste?

There is no time to waste when it comes to meeting Australia's goal of halving food waste by 2030.

Australia grows high-quality produce the world wants. Yet, an average of 20% of the melon crop is wasted on farm and more through the supply chain.[1] Reducing food waste has significant impacts and opportunities for industry profitability, for people and the planet.

For industry profitability

242,465 T Australian Melons[2]

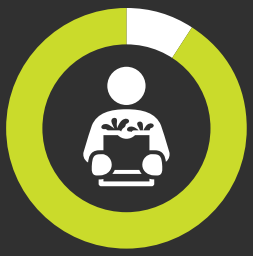
Produced in 2023
Valued at $248.2m

93% to fresh supply
<5.7% are exported
<1.3% are processed

There are opportunities for increased profitability through the use of currently wasted melons.

Reducing food waste means selling more of what you produce, earning you more from what you invest.

Food waste is Australia's $36.6 billion challenge[3] – and opportunity.



91% of consumers prefer to buy from organisations taking steps to reduce food waste.[4]

For people

312kg
per person a year

Australians throw out the equivalent of 312 kg of food per person a year.[5]

Food security

Edible melons that are not sold and are wasted could help provide food for hungry Australians.

1 in 6 adults & 1.2m children go hungry regularly[6]

For the planet

When we waste food, we waste the water, energy and land resources used to grow, make, move and sell that food[7]

1. Downham, R 2022 ABARES
2. 2021–22 Australian Horticulture Statistics
3. FIAL, 2021. National Food Waste Study Feasibility Study.
4. Capgemini, 2022, Why Food Waste is Everybody's Problem. Final-Web-Version-Food-Waste.pdf (capgemini.com)
5. FIAL, 2021. National Food Waste Study Feasibility Study.
6. Foodbank, 2021 Hunger Report.
7. FIAL, 2021. National Food Waste Study Feasibility Study.

How was this Plan developed?

This Melon Industry Food Waste Action Plan was developed with partners across the supply chain, including small and large growers, Melons Australia, Hort Innovation, wholesalers and retailers.

Significant engagement occurred through one-on-one interviews and workshops with our reference panel. The research team also completed a literature review of national and international research on the melon supply chain and food waste reduction strategies.

Insights from the engagement and literature review were triangulated to identify a long list of strategies that were assessed against the following criteria:

- The volume of waste reduction
- Financial feasibility
- Technical feasibility
- Australian food and drink waste recovery hierarchy.

Ten strategies were identified, backed up by targeted actions with clear measures of success.

"melons need to be picked ripe so the time from paddock to consumption is limited"

What have we learned about melon food waste?

We know that there is melon food waste on farm, in packing sheds and at the retail stage. Literature and grower feedback indicates that the problem is in the order of 30% of the crop, however the scale of the problem has not been confirmed.

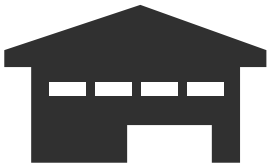
1

In the paddock – where growers ask *"Is it worth picking?"*

This decision is affected by:

- The health and appearance of the fruit – including damage from pests , disease, climate or weather impacts, size and presentation.
- The expected dollar return – supply, demand and price.

2



In the Packing Shed – (esp for Musk Melons) where growers ask *"Is it worth sending?"*

This decision is affected by:

- The condition of the fruit – ripeness, pest/disease damage.
- The appearance of the fruit and how it aligns with the specifications. (eg. size, shape).
- The expected dollar return – supply, demand and price.

3

Markets/Distribution Centre

Where decisions are made based on:

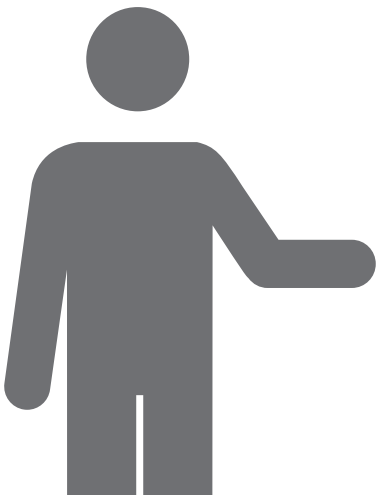
- Whether the fruit aligns with produce specifications.
- Any damage that occurred during transport.
- Ripeness and potential storage/shelf life
- Level of supply.

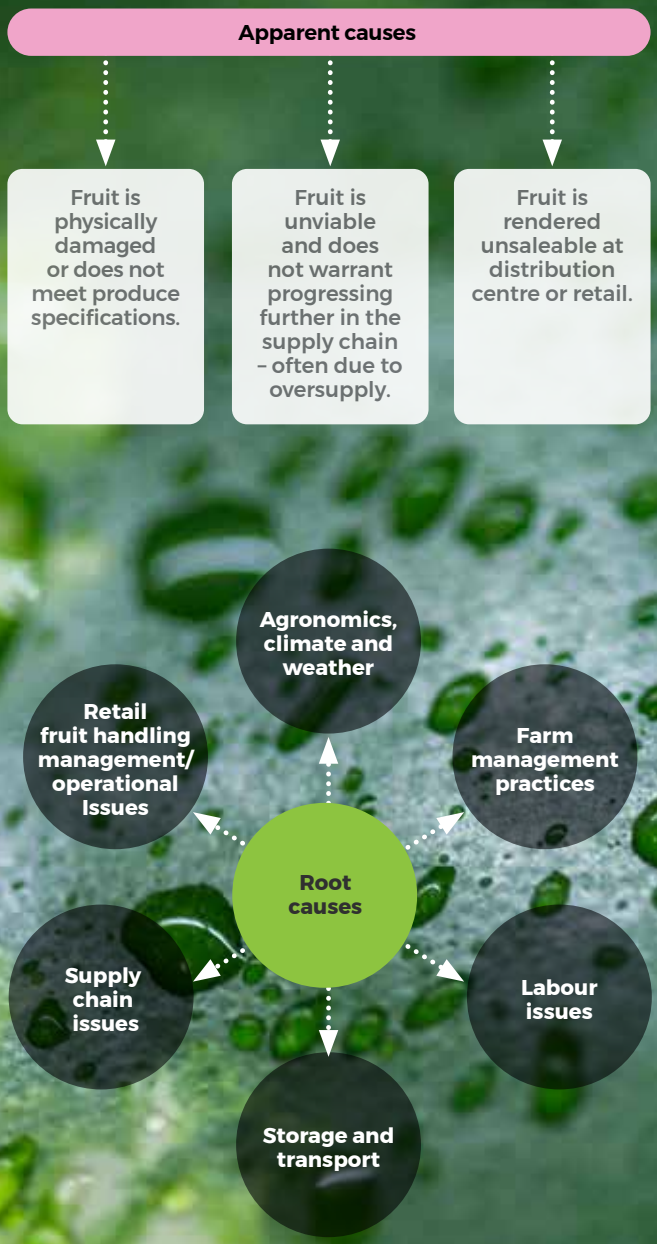
4

Retail

Where fruit that doesn't sell is discarded because of:

- Health regulations/store policies on cut fruit
- Overripe
- Damage.





"To have invested a lot in the crop to not get a return doesn't make sense – we cut our losses and plough it in"

How can we effectively reduce melon food waste?

Reducing melon food waste is a whole of supply chain responsibility. Some strategies focus on specific supply chain stages and can be adopted by individual farmers, or logistics providers or retailers while others require a collaborative approach and engagement with other industries and government.

Enable it
Make it easier to reduce food waste

Support food waste reduction action through:

- Better data
- Better education
- Better policy

Repurpose it
If we can't prevent it, turn the waste into resource

Turn unavoidable waste into:

- New products and profits
- Donate it to food rescue charities to help feed people in the community

Prevent it
Stop waste occurring in the first place

This will result in:

- Less crop left in the paddock
- Making the most of expensive inputs and environmental resources

Photo courtesy Michael Nucifora

Enable it		
Action		**How**
E1	**Develop and encourage the widespread implementation of improved waste data collection and analysis tools to inform business strategies.**	Review waste data collection methods globally, recommend data collection method and encourage usage across supply chain, report industry food waste, measure and evaluate impact of reduction initiatives in biannual report.
E2	**Implement an education campaign and supply chain communication/ coordination activities to support the reduction of melon food waste.**	Develop and promote an educational campaign on melon food waste reduction for the supply chain, collaborate with other horticultural groups for waste reduction techniques, support standards aligned with existing industry certification, showcase food waste champions and initiatives, provide information and training.
E3	**Ensure that policy and regulatory settings support the melon supply chain to reduce food waste.**	Maintain biosecurity vigilance to prevent the spread of pests and diseases, review inter-jurisdictional arrangements, advocate for waste reduction regulation/incentives, identify policies that increase waste and advocate for removal/change.

Repurpose it		
Action		**How**
R1	**Increase the quantity of surplus melons being processed and incorporated into value added products for human consumption.**	Research value adding opportunities, conduct feasibility studies, support expansion of successful initiatives, collate research and trials for innovative melon value-added products, , seek engagement of investors, marketers and growers in value-add initiatives and explore mobile processing plants or regional processing hubs.
R2	**Develop a time and cost effective resource rescue supply chain to increase the quantity of melons utilised by food rescue organisations.**	Address barriers to increasing waste melon deployment to food rescue organisations, Identify regional hubs and partners for melon recovery, recognise contributors to food rescue organizations, engage high-profile champions, advocate for financial incentives.

Prevent It		
Action		**How**
P1	**Improve the alignment between the supply of melons and demand.**	Promote melon consumption to increase domestic demand, explore increased export markets, explore new markets, improve access to market information and understanding of market forces, improve access to market information , explore models that offer greater supply and demand balance.
P2	**Encourage stronger relationships and enhanced communication across the melon supply chain in the interests of reducing food.**	Establish a whole of supply chain steering group, identify and quantify instore waste, review product specifications, develop secondary markets for lower grade melons, identify and address communication and understanding differences between supply chain actors.
P3	**Support best practice production to decrease melon food waste due to agronomic causes and improve consumer trust in the product at market.**	Continue research on pest management, nutrition, and technology to determine ripeness of fruit, support Best Management Practice (BMP) and industry benchmarking, encourage innovation, support research into melon varieties breeding, understand the impacts of climate change and develop risk management strategies, collaborate with the Bureau of Meteorology for weather information.
P4	**Improve the transportation of melons including through the cold food chain to minimise damage and transit time.**	Improve on-farm transport of melons, use real-time load monitoring, implement improved packaging techniques to protect fruit, investigate rail transport, and potential impact of improved road conditions, enhance training and supervision of long distance truck drivers.
P5	**Support the supply of appropriately skilled labour for the Melon industry and the associated supply chain.**	Provide staff training tools for growers and retailers to reduce waste, promote the melon industry as an employment option, support initiatives that facilitate a reliable supply of seasonal workers, encourage investment in automation , advocate for recognition of cost of labour in production costs.

Supply chain waste map

Supply chain

OR

In-field production	In-field harvesting and packing	In farm shed (Musk Melons)
Growing	Harvesting	Cleaning
On farm transfer	Packing	Grading
		Packing

Food waste causes

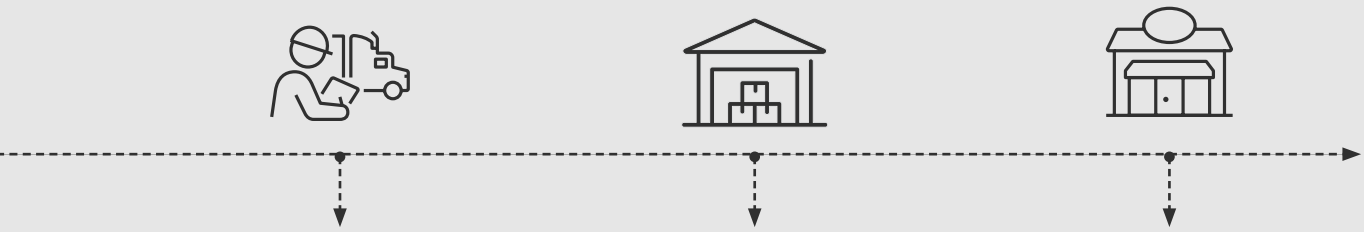
In-field production	In-field harvesting and packing	In farm shed (Musk Melons)
Damaged: pest/disease/weather	**Damaged:** pest/disease/ weather/handling	**Damaged:** pest/disease/weather/ handling/temp control
Crop failure	**Failure to ripen/overripe**	**Does not meet specifications**
Pollination difficulties	**Does not meet specifications**	
	Market issues/oversupply	

Actions

In-field production	In-field harvesting and packing	In farm shed (Musk Melons)
Data Collection	**Data Collection**	**Data Collection**
Education campaign & supply chain communication	**Education campaign & supply chain communication**	**Education campaign & supply chain communication**
Policy and regulatory settings	**Policy and regulatory settings**	**Policy and regulatory settings**
Best practice production	**Increase value-add processing**	**Increase value-add processing**
	Increase food rescue" this occurs three times on this actions level	**Resource rescue**
	Improve supply/demand alignment	**Improve supply/demand alignment**
	Best practice production	**Skilled Labour**

KEY:

- **Enable it** – make it easier
- **Repurpose** – if we can't prevent
- **Prevention** – is the priority



Transport	Market/Warehouse	Retailer
Wholesaling	Quality control	Major supermarkets
Distribution	Storage	Other grocery
	Disribution	Niche markets

Damaged	**Oversupply**	**Oversupply**
Cold chain failure	**Damaged in transport**	**Damaged**
	Does not meet specifications	**Over ripe**
	Quality assessment process	**Does not meet specifications – size, appearance**
		Health regulations/store policies

Data Collection/ traceability/cool chain monitoring	**Data Collection**	**Improve consumer trust and confidence in fresh melons**
Education campaign & supply chain communication	**Education campaign & supply chain communication**	**Data Collection**
Policy and regulatory settings	**Policy and regulatory settings**	**Education campaign & supply chain communication**
Improve transportation	**Increase value-add processing**	**Policy and regulatory settings**
	Resource rescue	**Best practice production**
	Improve supply/demand alignment	
	Improve transportation	

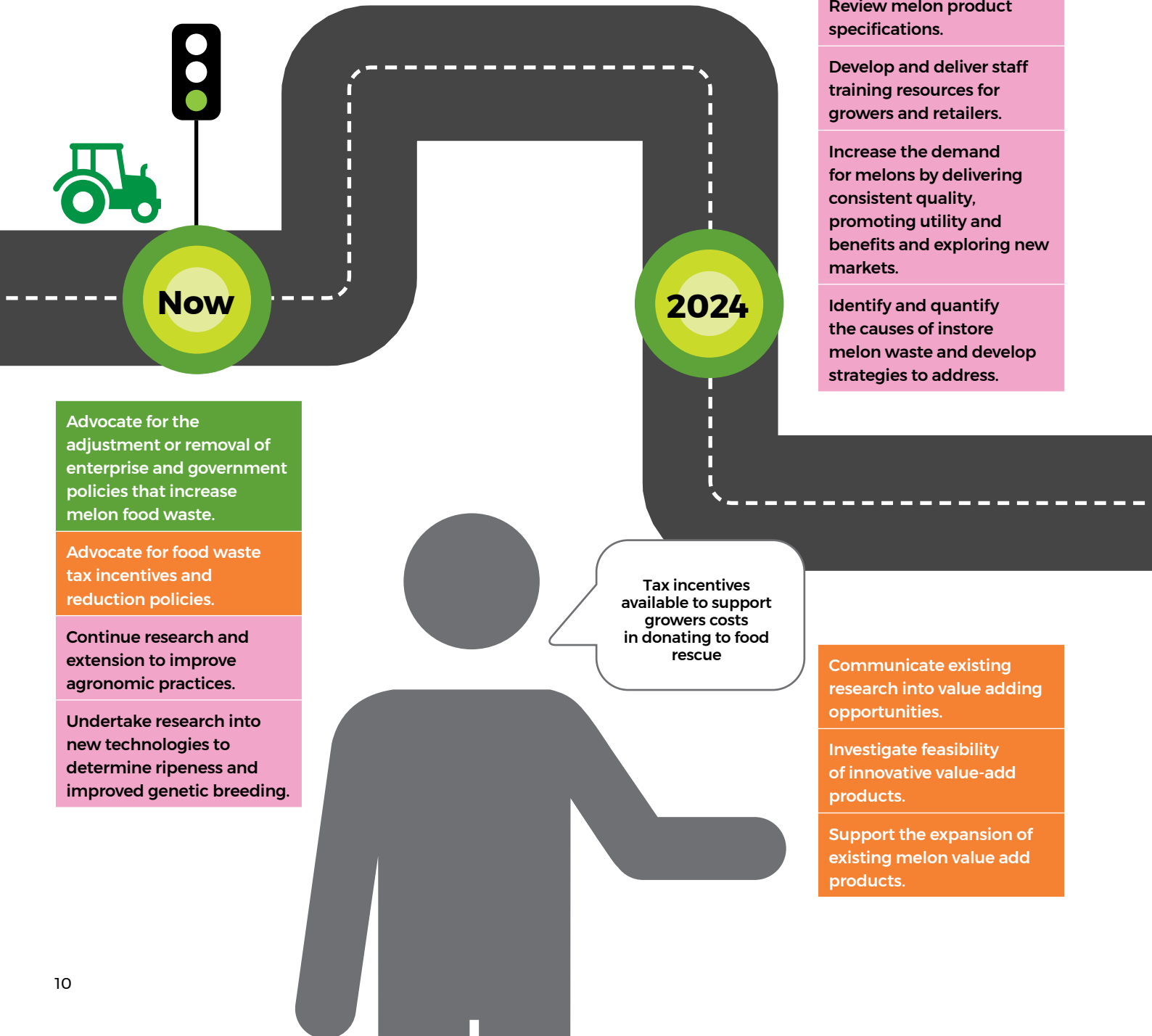
The Roadmap

Key actions with major milestones for melon food waste reduction

Enable it – Make it easier to reduce food waste

Repurpose it – From waste to resource

Prevent it – Stop waste occurring in the first place



Advocate for the adjustment or removal of enterprise and government policies that increase melon food waste.

Advocate for food waste tax incentives and reduction policies.

Continue research and extension to improve agronomic practices.

Undertake research into new technologies to determine ripeness and improved genetic breeding.

Roll out an industry education program and resources re food waste.

Develop Melon industry food waste data collection tools and processes.

Engage all supply chain actors in a campaign to improve consumer trust in fresh melons.

Identify and address barriers to increased donations to food rescue.

Establish a whole of Melon Supply chain steering group to drive the reduction of food waste.

Review melon product specifications.

Develop and deliver staff training resources for growers and retailers.

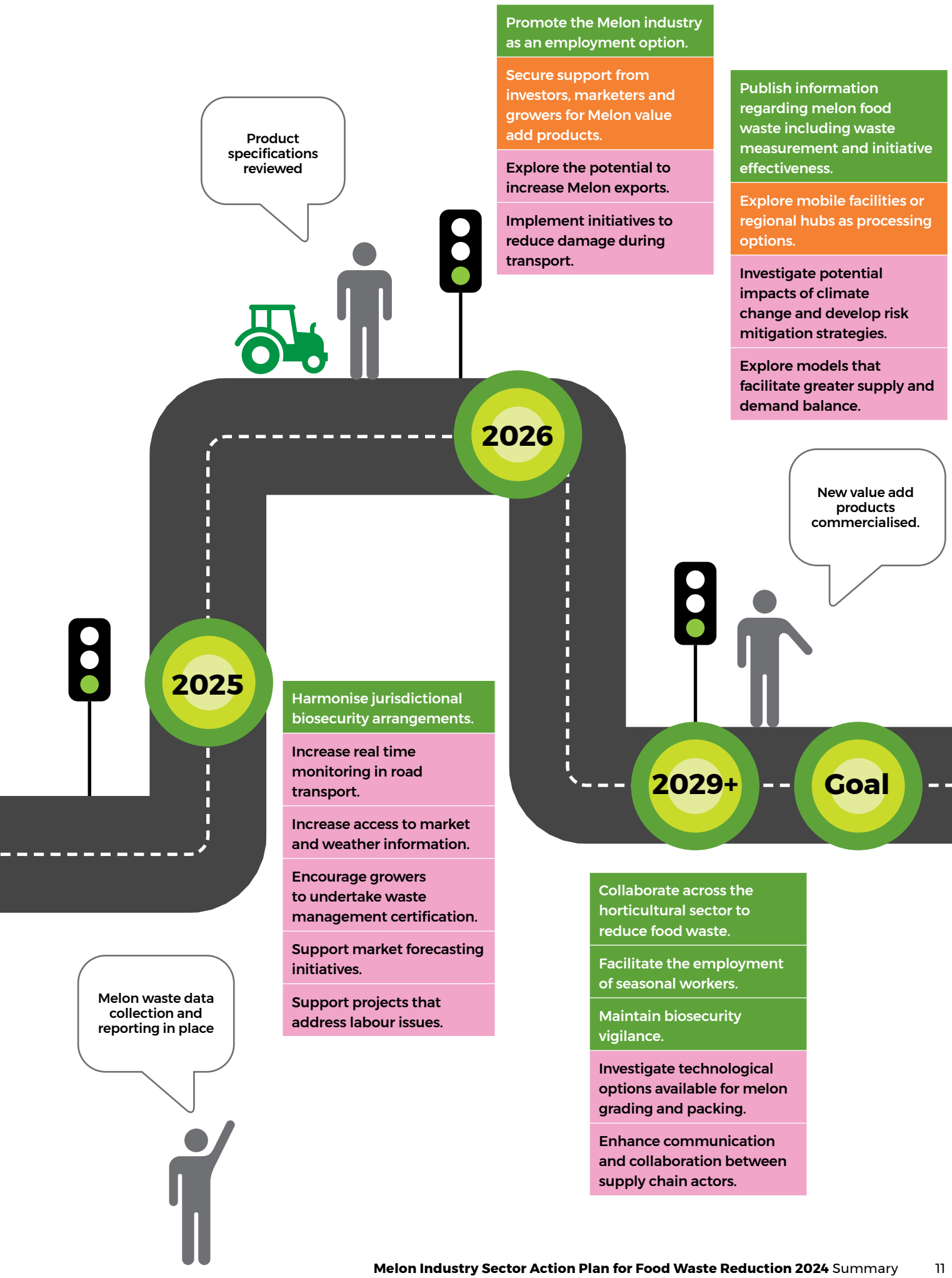
Increase the demand for melons by delivering consistent quality, promoting utility and benefits and exploring new markets.

Identify and quantify the causes of instore melon waste and develop strategies to address.

Communicate existing research into value adding opportunities.

Investigate feasibility of innovative value-add products.

Support the expansion of existing melon value add products.


Product specifications reviewed
Melon waste data collection and reporting in place
2025
2026
2029+
Goal
New value add products commercialised.
Harmonise jurisdictional biosecurity arrangements.
Increase real time monitoring in road transport.
Increase access to market and weather information.
Encourage growers to undertake waste management certification.
Support market forecasting initiatives.
Support projects that address labour issues.
Promote the Melon industry as an employment option.
Secure support from investors, marketers and growers for Melon value add products.
Explore the potential to increase Melon exports.
Implement initiatives to reduce damage during transport.
Publish information regarding melon food waste including waste measurement and initiative effectiveness.
Explore mobile facilities or regional hubs as processing options.
Investigate potential impacts of climate change and develop risk mitigation strategies.
Explore models that facilitate greater supply and demand balance.
Collaborate across the horticultural sector to reduce food waste.
Facilitate the employment of seasonal workers.
Maintain biosecurity vigilance.
Investigate technological options available for melon grading and packing.
Enhance communication and collaboration between supply chain actors.

Taking action now

Be **Proactive**

- Record your food waste “If you can measure it, you can manage it”
- Address issues that impact the quality of your fruit
- Look for value adding opportunities

Participate in industry activity

- Work with the industry to build customer trust by supplying top quality fruit
- Be part of initiatives like benchmarking, trials and pilots

Partner across the supply chain

- Work together to plan ahead for gluts
- Build trusted relationships with supply chain partners to share information
- Collaborate on food rescue initiatives large and small

This initiative is supported by the Queensland Government's Recycling and Jobs Fund

This research has been supported by the End Food Waste Australia Cooperative Research Centre whose activities are funded by the Australian Government's Cooperative Research Centre Program in conjunction with End Food Waste Australia, Central Queensland University, Royal Melbourne Institute of Technology, University of Southern Queensland and Hort Innovation's Melon R & D levy. Foundational funding for the research was provided by the Queensland Government's Recycling and Jobs Fund. We also acknowledge the in-kind support of the project's partners, research and industry participants.

Further information including the Technical Report can be accessed at https://endfoodwaste.com.au/sector-action-plans/