# Queensland Organics Strategy

## 2022–2032

A strategy to improve the management of organic materials along the organics supply and consumption chain

Queensland Government

Prepared by: Office of Resource Recovery, Department of Environment and Science



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January 2022

# Minister's foreword

The Queensland Government is committed to reducing waste, increasing recycling and growing jobs in our transition to a circular economy.

Our action includes reintroducing a waste levy, banning a range of single-use plastic items and introducing a container refund scheme. Through the $2.1 billion Recycling and Jobs Fund (Fund) we are investing at record levels to help shift Queensland away from a 'take-make-dispose' approach to using resources more efficiently and keeping them in the economy for as long as possible.

Events over the last couple of years have placed, and will continue to place, unprecedented pressures on our communities, businesses and regions. There has also been a fundamental change in the value we place on having a safe and healthy environment. This includes making more conscious choices about the things we buy, reducing food waste, minimising packaging and using single-use plastics.

Queensland's Waste Management and Resource Recovery Strategy (Waste Strategy) outlines how we can reduce the amount of waste that is produced and improve recycling and recovery efforts, so that as little waste as possible ends up in landfill. Improving how we manage organic materials is one of the foundation measures identified in the Waste Strategy.

We all generate organic material as part of our everyday lives. Whether it is green waste from the garden, food waste from our kitchens, restaurants, cafes and food processing businesses, biosolids from our wastewater treatment and organic material from agriculture, it all adds up. In 2018–19, 42.9 million tonnes of organic material were generated in Australia which presents significant opportunity to improve how we manage this.

Organic waste is one of the main types of waste sent to landfill and makes up around half of what Queenslanders throw away in their rubbish bin each week. When it breaks down in a typical landfill it releases methane, a greenhouse gas with an estimated global warming potential of between 28 and 36 times that of carbon dioxide.

The Queensland Organics Strategy 2022–2032 (Organics Strategy) outlines the actions we will take over the next decade to avoid the generation of organic waste in the first place and improve the end-use management of the material that can't be avoided. The Fund provides a ten year commitment to support the transformation needed to maximise the value we draw from organic material, allowing for sustained growth and job creation in the organics reprocessing industry across the state.

The Organics Strategy will also help us contribute to the end-of-decade national commitment of halving food waste and the amount of organic waste going to landfill.

Now is the time to re-think how we view organic 'waste' and we all have a part to play.

Together, we can transform organic material into a valuable resource that helps build economic recovery, provides opportunities for new markets, creates jobs for Queenslanders, reduces emissions and protects our unique environment.

Meaghan Scanlon MP
Minister for the Environment and the Great Barrier Reef
Minister for Science and Youth Affairs

# Stakeholder's Advisory Group acknowledgement

The Queensland Organics Stakeholder Advisory Group (Advisory Group) was established to work alongside the Queensland Government in developing a Queensland Organics Strategy. The groups' membership (Appendix 1) includes peak bodies representing the agriculture, retail and hospitality, environment, community, resource recovery and local government sectors, as well as utilities and food rescue businesses. The Queensland Government thanks those representatives who have generously given their time and expertise to help shape this Organics Strategy and its supporting Organics Action Plan.

Members of the Advisory Group have provided independent advice to government in relation to:

- impacts that the policy settings and actions proposed will have on the sectors they represent
- challenges facing each sector in increasing waste avoidance and diverting organic waste in Queensland
- existing initiatives and the opportunities to value-add to current practices
- opportunities for infrastructure investment and market growth.

The assistance of Advisory Group members, including reviewing draft materials, facilitating meetings and workshops with members and sectors, and their critical insights has been invaluable. Their efforts and time involved in participating in the intensive workshops organised to inform the Organics Action Plan is gratefully appreciated.

The Advisory Group has demonstrated the benefits of a network where there is shared information and responsibility between government, industry, and community. This collaborative approach sets the framework for continued and productive partnerships that will see sustainable long-term delivery of the Organics Action Plan and targets in this Organics Strategy.

# Contents

# Fast facts


The total estimated greenhouse gas savings from recycling organic waste in Queensland in 2018–19 was 564,708 tonnes of carbon dioxide. This is equivalent to planting 844,096 trees or taking 130,392 cars off the road each year.

In 2020, more than one in three Australians experienced food insecurity, significantly increased as a result of the COVID-19 pandemic increasing the demand for food relief.

Australian households spend between $2,000–$2,500 per year on food that is wasted.

Food and garden organic material makes up approximately 50% of the contents of an average household's general waste bin.

In Queensland, approximately 1.8 million tonnes of food waste was generated in 2016–17, with a third of this coming from households.

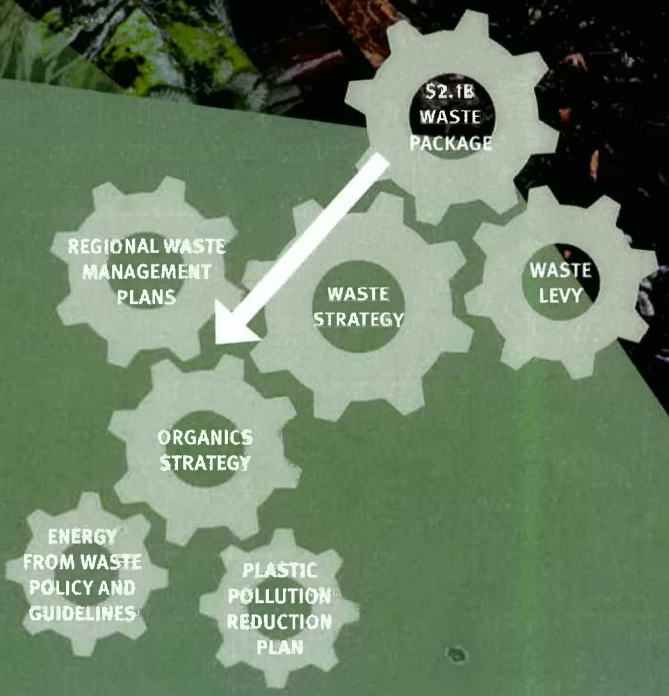
In 2018–19, the Australian organics recycling industry created over 4,800 direct jobs and contributed $724 million in industry 'value add' to the Australian economy.

One tonne of composted garden organics can sequester approximately 0.5 tonnes of Co2e ($CO_2$ equivalent) when applied to the land.

Creating healthy soils through the application of composted organics helps reduce water, fertiliser and pesticide use and nutrient leaching, while protecting aquatic environments.

# Introduction

The *Queensland Organics Strategy 2022–2032* (the Organics Strategy) reflects the priorities of Queensland's *Waste Management and Resource Recovery Strategy* (Waste Strategy). It also considers community, business and industry concern about the amount of organic material that is generated and disposed to landfill, as well as the social, economic, and environmental impacts that this waste creates.




The establishment of the $2.1 billion Recycling and Jobs Fund demonstrates the Queensland Government's long-term commitment to driving significant waste reforms in Queensland. This includes support for activities identified in this Organics Strategy that reduce the generation of organic wastes, such as food waste, increase the diversion of materials from landfill, and facilitate the economic and market opportunities presented through improved value-adding and enhanced recovery, reprocessing and recycling. The Queensland Government is also supporting Regional Organisations of Councils to develop Regional Waste Management Plans. These plans will identify regional behaviour change and infrastructure needs and priorities for co-investment by all levels of government and industry.

Implementing the Organics Strategy will strengthen and transform the organics supply chain across Queensland, accelerate job growth and invest resources in the circular economy. Key actions will help to retain the value of materials in the economy for as long as possible. Together with other policy settings including the waste levy, Queensland will have the certainty needed for critical infrastructure investment decisions, particularly in regional areas, and the opportunity to create new or expanded economic and market developments.

The steps we take now to improve organics management will also directly support the commitment to a carbon positive and sustainable Brisbane 2032 Olympic and Paralympic Games. With a clear target to achieve zero net emissions by 2050 and an interim emissions reductions target of at least 30 per cent below 2005 levels by 2030, the Queensland Government recognises the important role that this Organics Strategy will play in supporting these targets. Considerable investment will be required by all levels of government and the private sector to get us to where we want to be. We will continue to work with key stakeholders to implement the actions to ensure effective long-term and sustainable change.

# The problem and opportunities

Organic matter contributes significantly to the waste stream. There are potential adverse environmental, social, and economic impacts associated with poor management and disposal of organic waste, including:

- a loss of value when materials are sent to landfill that could otherwise be processed, creating economic value and jobs
- contribution to greenhouse gas emissions
- odour impacts from sites
- contamination of waterways.

Although organic waste is often seen as a naturally produced waste, when disposed of to landfill it breaks down anaerobically and releases methane. Methane is a greenhouse gas with a global warming potential around 28 times that of carbon dioxide over a 100-year period.

Far from being a waste, organic materials are a valuable resource that can be used for a variety of purposes, including:

- reducing food insecurity
- production of animal feed to meet the demands of a growing population,
- the manufacture of compost to improve soil structure, carbon content and moisture retention
- as a feedstock for the biomanufacturing and biotechnologies sectors to create bioproducts, bioenergy and biofuels.

Improving the management of organic materials will deliver major social, environmental and economic benefits for our communities.

With more than one in five Australians experiencing food insecurity in 2018–19, there is an urgent need to improve and increase the diversion of edible food to people in need. The COVID-19 pandemic has seen food rescue organisations reporting a significant increase in requests for support. In 2019, 15 per cent of Australians experiencing food insecurity were seeking food relief at least once a week. In 2020, this has more than doubled to 31 per cent.

In 2020, the Queensland Government provided over $900,000 to six organisations through the Food Rescue Grant Program, for infrastructure, equipment and operational costs to divert additional food from landfill and redistribute it to Queenslanders in need. This will help to rescue the equivalent of 3.3 million meals over the lifetime of the program.

The indirect impacts associated with organic waste include the loss of the resources used to create it. This includes farming efforts, production costs, land, water and nutrients, as well as energy and fuel for the transportation and supply of the product.

An estimated 50 percent of a household's general waste bin is made up of organic material. While the majority is garden organics, the Fight Food Waste Cooperative Research Centre estimates that the food waste component adds up to an average of $965 per person, per year. Most food waste is avoidable, and there are clear actions that every Queenslander can take to reduce these costs for households.

The Australian Organics Recycling Association (AORA) report, *The Economic Contribution of the Australian Organics Recycling Industry*, released in March 2020 identified that in 2018–19, the Australian organics recycling industry created over 4,800 direct jobs with around one job being supported for every 1,550 tonnes of organic material that was recycled. It also found that the organic recycling industry contributed $724 million in industry value add to the Australian economy.

During 2018–19, Queensland recycled 1.18 million tonnes of organic material and supported over 720 Queensland jobs. With this Organics Strategy setting the framework to significantly increase our recycling industry, the potential for job and economic growth is an opportunity that can be realised across the state.

**The size of the problem**

Organic material is one of the main wastes sent to landfill across Australia.

In 2016–17, Australia generated significant volumes of organic waste, with almost a quarter being food waste.

Table 1: Volumes of organic waste generated and disposed of to landfill across Australia (National Waste Report 2020, National Food Waste Baseline).

| | Waste generated (Tonnes) | Disposed to landfill (Tonnes) | Disposed to landfill (Percent) |
|---|---|---|---|
| **All organic waste** | 42.9 million | 6.87 million | 16.01 % |
| **Food waste** | 7.3 million | 3.2 million | 43.84 % |

Agricultural organic waste such as livestock manure and bagasse are managed onsite and used as a resource to improve soil nutrients and health. Similarly, other organic waste streams could be reused in line with the waste and resource management hierarchy to deliver multiple benefits.

The National Food Waste Strategy Feasibility Study revised the Australian food waste baseline to 7.6 million tonnes generated nationally.

# What is organic waste?

## Organic waste

Organic waste is a broad category of waste derived from material that was once living, excluding petroleum-based materials. This includes food (domestic and commercial), garden, biosolids, food processing wastes and agricultural by-products.

While the Organics Strategy covers the spectrum of organics, the organic waste stream can be categorised into 'core organic' wastes, which are often disposed to landfill, and 'non-core' wastes, which are a by-product of another process and often sustainably managed and utilised on-site, including in agricultural systems.

In the *National Waste Report 2018*, the data recorded for organic waste covered:

- core organic waste—domestic and commercial food wastes, garden organics and timber
- non-core organic agriculture waste—including manure, sugarcane bagasse, cotton gin trash
- non-core organic fisheries waste—including bycatch, offal, shells
- organic wastes reported within the hazardous waste material category—biosolids, grease trap sludge and waste from abattoirs and tanneries.

## Food waste

Food waste is a significant component of the organic waste stream, and targets have been set specifically to address it.

The *National Food Waste Strategy* adopts a broad and inclusive definition of 'food waste' that covers:

- 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 is thrown away. This includes edible food, the parts of the 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.

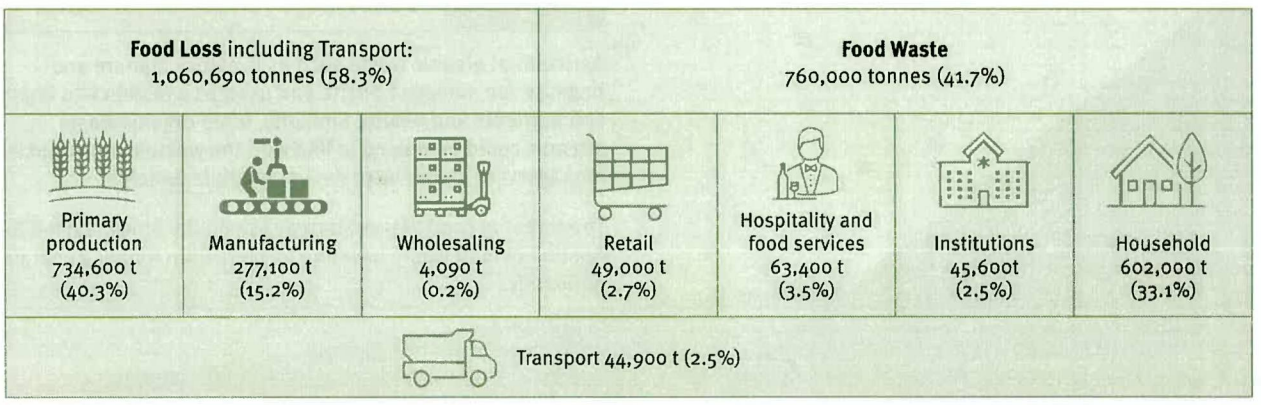
This definition excludes food that is produced or manufactured in Australia which is exported and becomes waste in another country. It also acknowledges that there are opportunities across the entire fresh and processed food systems to achieve improved environmental, economic, and social outcomes.

The loss of edible food and inedible food parts at the point of retail or consumer use is typically considered 'food waste'. Food that is lost along the production and supply chain before reaching the retail stage is generally referred to as 'food loss'.

Although the Organics Strategy scope covers all organic waste streams, a number of actions are targeted to food waste generated from retail businesses through to households. This waste is often avoidable, generates cumulative emissions, water, and cost impacts from across the entire supply chain, and the majority of food waste is currently disposed of to landfill in Queensland. Furthermore, successful programs to avoid food waste reduce the impost on organics processing infrastructure thereby reducing the amount required to build and operate organics processing infrastructure. Preventing food waste can also deliver major savings to households and businesses.

Figure 1: Food waste production and supply chain.

*Data source: Arcadis for the Australian Government (2019), National Food Waste Baseline: Final Assessment Report.*



# Queensland's Organics Strategy

## *Our vision—Achieving social, economic, and environmental benefits by harnessing the value from organic materials to the greatest possible extent.*

The Waste Strategy has a vision for Queensland to become a zero-waste society by transitioning to a circular economy where the value of waste is retained in the economy for as long as possible.

The improved management of organic waste is a priority action area due to the significant contribution of organic waste to the waste stream, and the social, economic, and environmental benefits from improved management.

The Organics Strategy sets the framework for managing organic materials in Queensland and helping to drive the transition to a circular economy. It identifies actions and provides greater policy and investment certainty to industry. In doing so, it will support greater investment and job creation in Queensland.

As a first priority, the Organics Strategy supports the avoidance of organic waste. Where organic waste cannot be avoided its transformation into higher order, value-add products, and the growth of the organics recycling industry in Queensland is preferred over energy-from-waste and landfill.

The Organics Strategy identifies priority actions from avoidance through to improved end-use management. The actions support the Queensland Government's national commitments to implement the *National Food Waste Strategy* target to halve food waste by 2030 and implement actions in the *National Waste Policy Action Plan* to halve the amount of organic waste going to landfill by 2030.

The Queensland Government is committed to driving significant changes for this valuable resource in Queensland. Over the next 10 years the $2.1 billion Recycling and Jobs Fund will **provide the necessary funding to support increased household recycling, help build new resource recovery infrastructure and create more jobs, including in the improved management of organic materials under this Organics Strategy.**

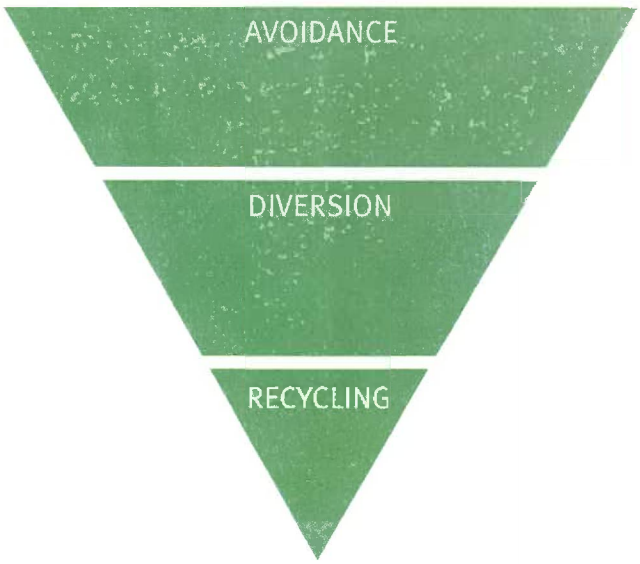
## *Key objectives for Queensland*

By 2030, Queensland will:

1. halve the amount of food waste generated
2. divert 80 per cent of the organic material generated from landfill
3. achieve a minimum organics recycling rate of 70 per cent.

These three key objectives will position Queensland to achieve the targets that have been set at a national and state level for organics.

The waste and resource management hierarchy guides the Organics Strategy and how the objectives will be achieved—through actions that avoid the generation of organic waste, actions that divert organic material being disposed to landfill, and actions that improve the recycling of organic material.



These objectives will be achieved through:

| | |
|---|---|
| **AVOIDANCE** | • developing and promoting educational materials to households, businesses, institutions, and events to reduce food waste<br>• continuing regular research to understand food waste behaviours and segments in Queensland<br>• commencing education for future generations<br>• researching food waste hotspots and solutions collaborating directly with industry to create sector action plans<br>• finding end-markets for produce of all shapes and sizes<br>• increasing food rescue capacity and connections<br>• providing tailored advice to businesses of all sizes |
| **LANDFILL DIVERSION** | • assessing the feasibility of a landfill disposal ban for organic waste streams<br>• reviewing and implementing household solutions that are fit-for-purpose<br>• making the inputs clear for new household kerbside services<br>• providing segregated organics collection services at government events<br>• implementing new collection options for businesses and institutions |
| **RECYCLING** | • developing partnerships to better understand end-market needs<br>• share data to understand investment requirements<br>• ensuring long-term planning of regional waste infrastructure needs<br>• increasing market demand<br>• reviewing regulatory barriers to manage risks with market expansion<br>• aligning data collection and reporting<br>• developing new and updated infrastructure to increase processing capacity<br>• providing clarity and confidence to end-markets<br>• ensuring we are delivering best practice operations in Queensland. |

The outcomes of the Organics Strategy aim to:

- reduce organic waste generation, food loss, food waste and associated resource losses in food production and transport to consumers
- improve food security through increased and effective redistribution of food to Queenslanders in need
- assist businesses and households to reduce costs through organic waste avoidance
- produce high-value end-use products and markets
- increase organic processing capacity
- increase economic opportunity, infrastructure, investment and employment through end-use product and market development and services for organic recycling
- improve soil structure and health, promoting food production and food nutrient quality
- reduce reliance on artificial fertilisers and improved water quality and aquatic environments
- reduce greenhouse gas emissions and climate change impacts.

# Queensland targets

By 2030, Queensland will:

1. halve the amount of food waste generated
2. divert 80 per cent of the organic material generated from landfill
3. achieve a minimum organics recycling rate of 70 per cent.

These objectives were derived directly from targets that have already been committed to at national and state levels.

## National waste targets

### *National Food Waste Strategy* target

**Align with the national target to halve the amount of food waste generated collectively across Queensland.**

The *National Food Waste Strategy* sets a 50 per cent reduction target by 2030 against 2016–17 baseline figures, by promoting food waste avoidance measures.

Table 2. Estimated Queensland figures of food loss and waste (National Food Waste Baseline Final Assessment Report 2019)

| Sector | Primary production | Manufacturing | Wholesale | Retail | Hospitality | Institutions | Households |
|---|---|---|---|---|---|---|---|
| Total food waste (tonnes) | 734,600 | 277,100 | 4,090 | 49,000 | 63,400 | 45,600 | 602,000 |

In the short-term, this Organics Strategy prioritises food waste produced from retail through to consumer sources. This waste has accrued emission, water and cost impacts from across the entire supply chain and is currently often disposed to landfill in Queensland.

### *National Waste Policy Action Plan* target

**Align with the national target to halve the amount of organic waste sent to landfill by 2030.**

The *National Waste Policy Action Plan* sets a 50 per cent reduction to landfill target for organic waste by 2030 in order to implement the 2018 *National Waste Policy*.

Halving organic waste sent to landfill in Australia, would achieve 2.7 million tonnes less of organic waste to landfill every year.

## Queensland waste targets

### *Waste Strategy* interim targets

**15 per cent reduction in household waste**

The Waste Strategy's household municipal solid waste (MSW) waste reduction target is calculated per-capita. With food and garden waste contributing approximately 50 per cent of an average household's general waste bin, actions reducing food waste, and diverting food and garden organic waste from landfill will contributes toward achieving the target.

Table 3. Queensland waste reduction targets for households (per capita) (Waste Strategy)

| Stream | Baseline (2018) | Target 2025 | Target 2030 |
|---|---|---|---|
| MSW | 0.54t | 10% | 15% |

### 80 per cent of waste is recovered and does not go to landfill

In 2017–18, more than 50 per cent of Queensland's waste was sent to landfill. The Waste Strategy targets reflect overall diversion rates for all material diverted from landfill, and actions specifically diverting organic material will contribute to this target.

Table 4. Queensland waste diversion from landfill targets (recovery rate as a percentage of total waste generated) (Waste Strategy)

| Stream | Baseline (2018) | Target 2025 | Target 2030 |
|---|---|---|---|
| MSW | 32.4% | 55% | 70% |
| C&I | 47.3% | 65% | 80% |
| C&D | 50.9% | 75% | 85% |
| Overall | 45.4% | 65% | 80% |

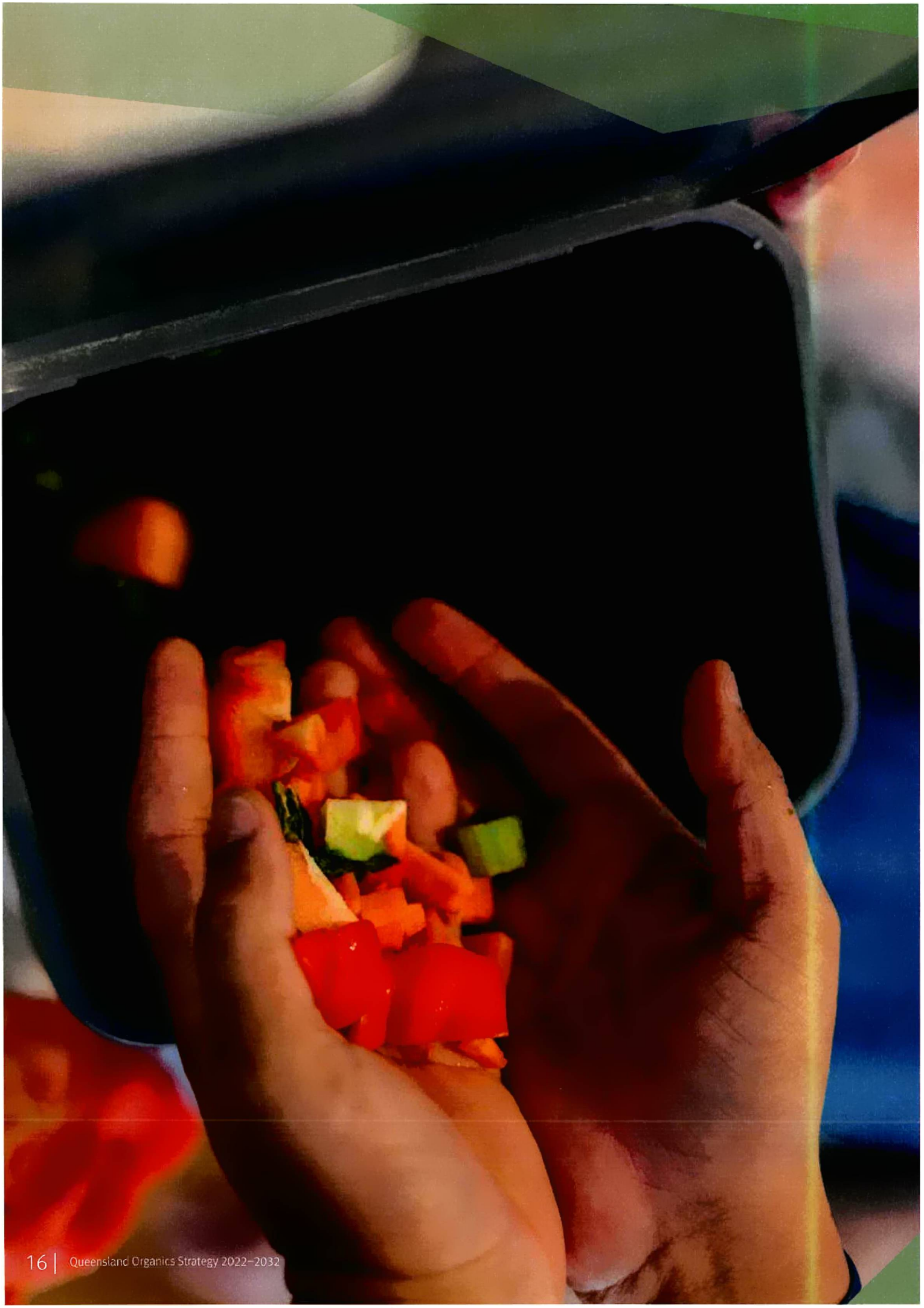
### 65 per cent recycling rates across all waste types

The recycling rate will be calculated as a percentage of total waste generated. Although the overall interim recycling rate target for Queensland is 65 per cent, an ambitious 70 per cent recycling rate objective has been set to recognise the national industry targets of a 95 per cent recycling rate for organics. It is estimated that achieving a 70 per cent recycling rate for organic waste would result in an additional 597 full time employees in the organics recycling industry across Queensland.

The percentages in the following table relate to waste that is reported as recycled or reused and excludes materials from which energy is recovered. Recovering fuels or energy from waste may be suitable for waste that cannot be recycled.

Table 5. Queensland recycling rates (as a percentage of total waste generated) (Waste Strategy)

| Stream | Baseline (2018) | Target 2025 | Target 2030 |
|---|---|---|---|
| MSW | 31.1% | 50% | 60% |
| C&I | 46.5% | 55% | 60% |
| C&D | 50.9% | 75% | 80% |
| Overall | 44.9% | 60% | 65% |



# Core principles

The Organics Strategy aligns with the strategic priorities set out in the Waste Strategy. The strategic priorities are identified to help drive a fundamental shift in the way waste and materials are managed in Queensland and support the transition to a zero-waste society.

STRATEGIC PRIORITY 1

### Reduce the impact of waste on the environment and communities

By ensuring organic waste is avoided and reused to the greatest potential reduces disposal to landfill and a reduction in greenhouse gas emissions. A healthy environment supports our economy and contributes to our general health and wellbeing, now and for future generations.

STRATEGIC PRIORITY 2

### Transition to a circular economy for waste

Transitioning to a circular economy encourages the community, business and industry to manage organic material in order to retain its value in the economy for as long as possible, ultimately transitioning to a zero-waste society. Value can be gained from material otherwise destined for landfill where there are increased options for avoidance, reuse, recycling and recovery of resources.

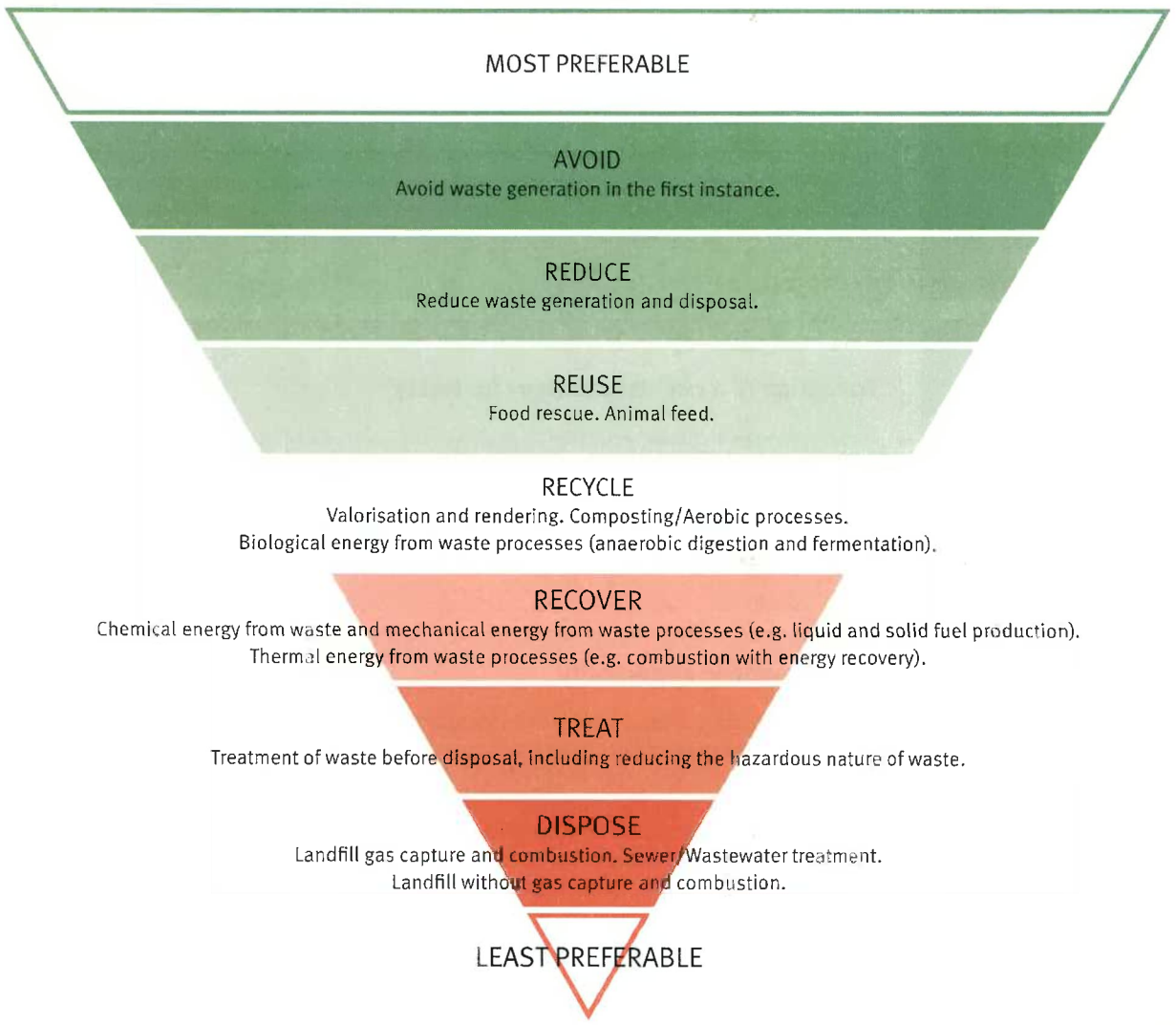
STRATEGIC PRIORITY 3

### Build economic opportunity

Organic materials provide opportunity to identify new and higher-value products and commercial opportunities for Queensland businesses and industry. The organic resource recovery sector is an important contributor to the Queensland economy already. However, there is further potential to grow this and other sectors to ensure Queensland becomes competitive for organic processing and develops viable markets. Building economic opportunity creates new jobs, provides upskilling opportunities for the workforce, builds infrastructure capacity and markets in regional areas, and contributes to sustainable and long-term growth in Queensland.

The Organics Strategy is guided by the waste and resource management hierarchy as required by Queensland's *Waste Reduction and Recycling Act 2011*. The hierarchy highlights that waste should be avoided and reduced as first priority, after which options for reuse and recycling should be explored.

Figure 2: Waste and resource management hierarchy

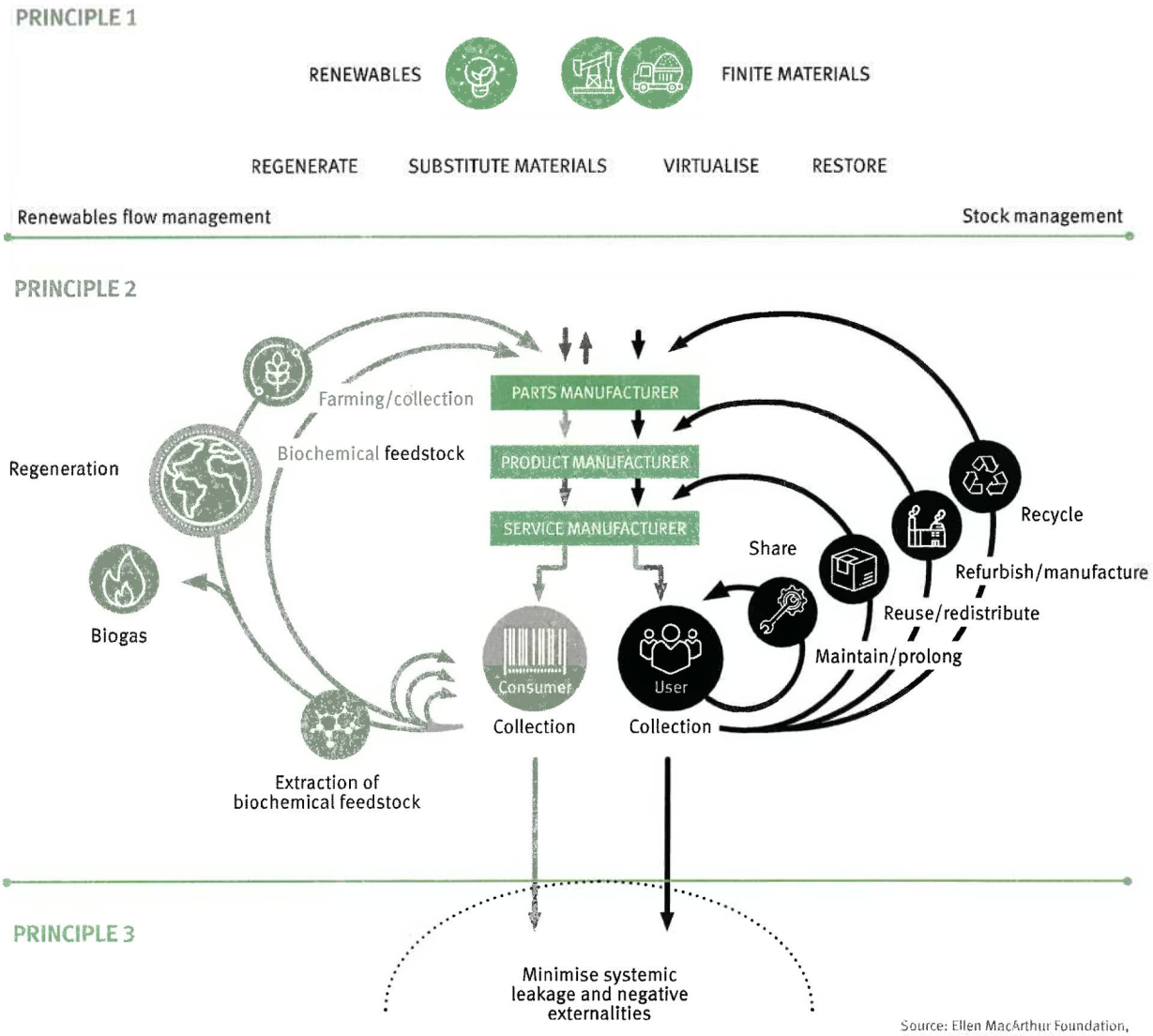


Actions that avoid, reduce, reuse and recycle materials align with the circular economy approach to prevent, capture and use waste at its highest value. A circular economy is based on the principles of designing out waste, keeping products and materials in use, and regenerating natural systems.

Globally, governments and businesses are moving towards a circular economy model. Adopting circular economy principles presents opportunities for industry and government to alter the way a substantive part of the economy operates, while creating jobs, growth and improved environmental sustainability.

Shifting away from the linear 'take-make-use-dispose' model will deliver benefits through reduced waste and improved resource efficiency, create new economies, and building long-term market, environmental and economic resilience.

Figure 3: Circular economy principals.




Source: Ellen MacArthur Foundation, www.ellenmacarthurfoundation.org

# Roles and responsibilities

The actions are identified for delivery in partnership, between local, state and federal governments, working with industry, businesses, and the community, to ensure organic material is being managed in a coordinated and integrated manner.

The Queensland Government acknowledges that it will play an important role in encouraging, facilitating and enabling improved organics management across the state, and is committed to ensuring that the policy and regulatory settings support this improved management.

# Themes

Four themes were identified through targeted consultation and engagement with stakeholders during development of the draft Organics Strategy. Strong action under each theme is required for the Organics Strategy's vision to be realised.

Actions addressing these themes are outlined in this strategy, however individual actions are grouped by the three key objectives of this Organics Strategy (Avoidance, Diversion, or Recycling) providing clear identification of the outcome and in line with the waste and resource management hierarchy rather than by theme.

## Education and behaviour change

A comprehensive and coordinated education program is important to drive awareness, knowledge and behaviour change for improved organic material management across all sectors.

An education program needs to address the waste management hierarchy to promote avoidance behaviours in the first instance. It will also be vital in helping businesses and consumers to understand organic waste collection services so that they can help minimise contamination and support the development of new high-quality markets and products.

Realising the value of organic material and understanding the impacts of and benefits that each sector can contribute, (from at-home or community composting initiatives to clean stream feedstocks through kerbside collection services), is critical to ensuring the success of the Organics Strategy.

Action 2.13 of the *National Waste Policy Action Plan* seeks national alignment of community education efforts to reduce food waste maximising impact and reducing confusion. Consistent education campaigns have had a proven impact on food waste behaviours in other jurisdictions, with *Love Food Hate Waste* in the United Kingdom recording that 76 per cent of people who had seen one of their campaigns stating that they did something different as a result of the campaign.

## Infrastructure and services

AORA released the Australian Organics Recycling Industry Capacity Assessment: 2020–21 which identified that Queensland does not currently have the capacity to meet a 70 per cent organic material recycling rate.

The Queensland Waste and Resource Recovery Infrastructure Report further identified that five of the eight Queensland regions have insufficient, or potentially insufficient, organic waste processing capacity to meet waste and resource recovery infrastructure needs from 2020 to 2050.

Therefore, strategically located infrastructure and services are required to increase Queensland's capacity to collect and process organic material, capitalise on integrated solutions, and produce high-value products where they can be used. With state and local governments, industry and community working collaboratively, the infrastructure and service needs can be delivered. For example, ensuring site locations and activities have considered suitable land zoning with adequate services (power, sewerage, water, and internet connectivity) and other infrastructure for current and future innovative technologies to maximise the benefits of organic recycling.

## Market and product development

Consistent policy and regulation, partnerships and collaboration, and a sound knowledge platform, will drive innovation, investment, information sharing and the uptake of new opportunities in Queensland. Product design and end markets are needed to ensure the benefits of avoidance and recycling of organic waste are realised, and to ensure that organic waste is not stockpiled or disposed to landfill.

Research to develop new and innovative products is required to identify solutions to existing organic loss and waste challenges. As an example, beer products are being developed using recovered yeast from stale bread.

Effective markets require partnerships between waste generators and processors to ensure products meet end-user specifications and deliver the highest value products in line with the waste hierarchy.

## Data, regulation and enforcement

Clear policy direction and legislative frameworks with reasonable regulation and enforcement will be required to provide certainty, and consistency for industries to promote investment in Queensland. Effective, accessible data and regional waste management and infrastructure planning will assist in identifying opportunities for regional specific needs for organics recycling markets and products.

A transparent and educational approach delivered through collaborations seeking to:

- provide appropriate land planning and environmental regulations suitable for organics recycling activities
- encourage best practice processes
- improve processing technologies
- align infrastructure and regulation that supports and delivers fit-for-purpose products.

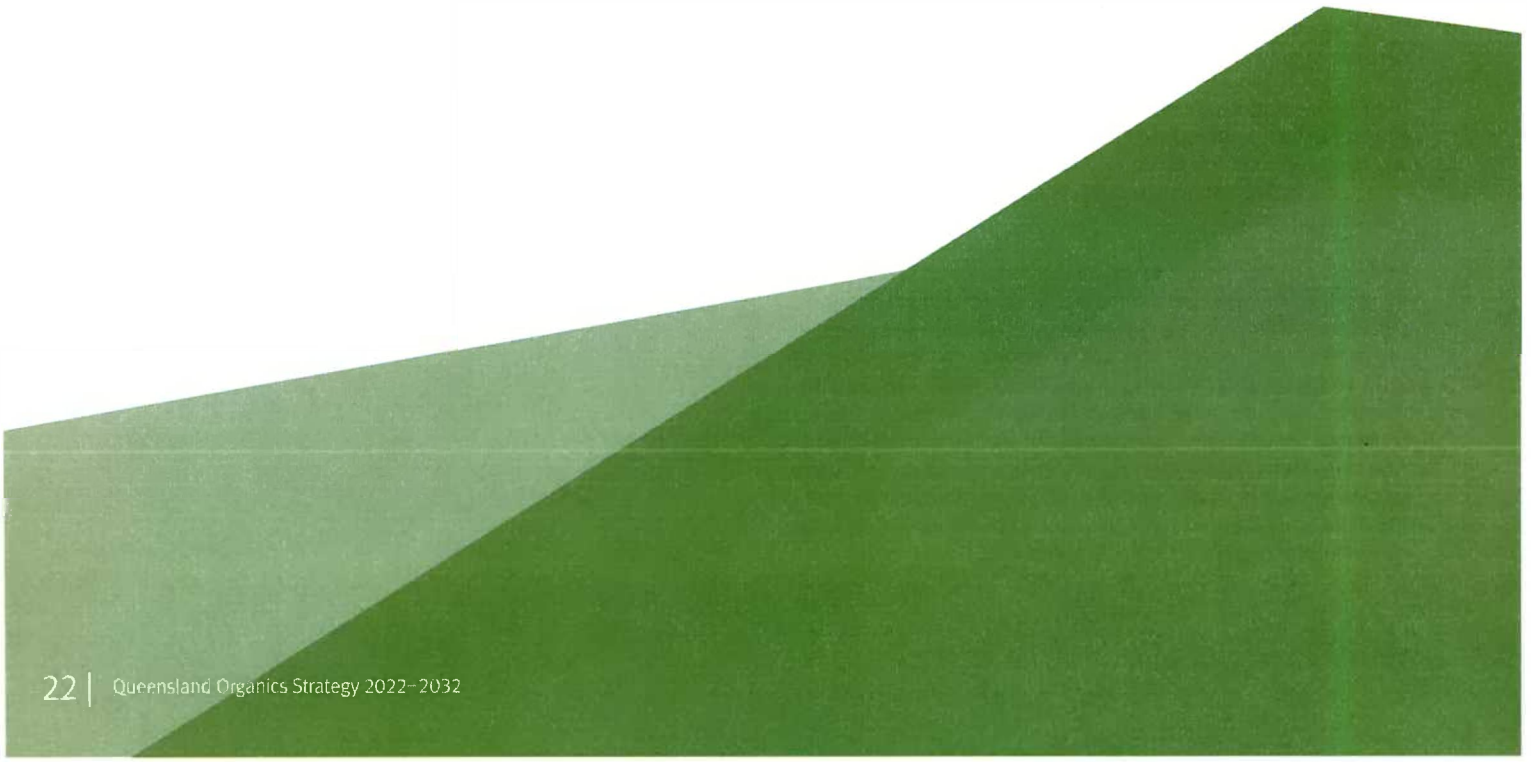
# Compostable packaging and products

Compostable packaging and products present significant challenges to improving the management of organic material. As the Queensland organics recycling industry matures, solutions and processes are expected to develop introducing source separation processes, technological processes or closed systems which could accept compostable products.

Compostable packaging and products are largely being used to replace many single-use items. These compostable single-use items may be more appropriately replaced with a reusable product.

The presence of compostable products and the inability to differentiate compostable products certified to the Australian Standards and non-compostable items present significant contamination risks. Additionally, the rate of decomposition for compostable packaging and associated materials (such as substitutes for single use plastic cutlery) is often markedly different than it is for organic food or organic waste. This potentially results in a need to process these materials separately from other organic materials.

The Queensland Government doesn't promote the inclusion of compostable packaging and products through organics collection systems. However, we continue to work with the Commonwealth and other jurisdictions to appropriately consider the role of and address issues with compostable packaging and products.



# Actions for delivery—Avoidance

| OBJECTIVE | HALVE THE AMOUNT OF FOOD WASTE GENERATED |
|---|---|
| **Scope** | **Avoid the generation of food waste from households** |
| | **Actions** |
| **A1** | **Develop and promote educational messaging based on research**<br>The Queensland Government will develop and actively promote household education and awareness tools to empower Queenslanders to practice food waste avoidance behaviours.<br>These materials will be based on research, including findings from the Fight Food Waste Cooperative Research Centre (CRC).<br>Membership in the *Love Food Hate Waste* network will ensure that Queensland is supporting national action to align community education efforts to reduce food waste, ultimately maximising impact and reducing confusion. A range of digital mediums will be used to raise awareness of these education tools and support behaviour change.<br>The Queensland Government will also work with local governments to develop education and behaviour change toolkits that can be implemented by local governments across Queensland. |
| **A2** | **Understand food waste behaviours and segments in Queensland**<br>The Queensland Government supports the Fight Food Waste CRC project and other research to design effective interventions to reduce household food waste.<br>The Queensland Government will continue to monitor commonly wasted food groups and food waste behaviours in Queensland to ensure educational materials address key issues. |
| **A3** | **Commence education for future generations**<br>Sustainability is a cross curriculum priority in the Australian Curriculum and concepts of waste management are developed through key subjects. The Queensland Government will continue to apply research findings to the development of food waste education resources for use in Queensland schools. |

| OBJECTIVE | HALVE THE AMOUNT OF FOOD WASTE GENERATED |
|---|---|
| Scope | **Avoid the generation of food loss and waste from:**<br>• **primary production**<br>• **manufacturing**<br>• **wholesaling**<br>• **retail**<br>• **hospitality and food services**<br>• **institutions.** |
| | **Actions** |
| **A4** | **Research food waste hotspots and solutions**<br>The Queensland Government will continue to work with research agencies such as the Fight Food Waste CRC to engage with industry and consumers to reduce food loss and waste across the supply chain.<br>The Queensland Government is supporting the Fight Food Waste CRC:<br>• project to undertake whole-of-supply chain mapping to identify and prioritising food waste hotspots in the meat value chain and support stakeholders across the chain to trial and embed solutions reducing food loss and waste<br>• SME Solutions Centre to identify valuable products in food and agricultural waste streams and transform them into new commercial opportunities.<br>The Queensland Government will continue to support research opportunities across the supply chain including the role that retail, and hospitality produce specifications have on the generation of food waste. |
| **A5** | **Collaborate directly with industry to create sector action plans**<br>The Queensland Government will support Stop Food Waste Australia to develop a sector action plan for horticulture.<br>Horticulture is Queensland's second largest primary industry, and grows approximately one-third of the nation's produce. This makes us well-placed to use this expertise to lead the development of this action plan.<br>This work will complement the work already being undertaken by Stop Food Waste Australia and other jurisdictions in developing action plans for other sectors and ensure that we are collaborating and using shared resources effectively. |
| **A6** | **Find solutions for produce of all shapes and sizes**<br>Build on existing work to explore options to update produce specifications and consumer acceptance of imperfect produce. Further identify and develop markets where product appearance is irrelevant. |
| **A7** | **Increase food rescue capacity**<br>In 2021, the Queensland Government provided $905,622 in grant funding to six food rescue organisations for infrastructure, equipment, and operational costs to increase their collection and distribution capacity and divert additional high-quality surplus food from landfill and redistribute it to Queenslanders in need.<br>The Queensland Government will review the outcomes of the grant program to identify options and opportunities for further food waste avoidance. |
| **A8** | **Increase connections between food rescue, businesses and recipients**<br>The Queensland Government will continue to explore opportunities to better connect businesses with food rescue organisations to continue to increase the diversion of surplus edible food.<br>This may include the promotion of platforms to better connect businesses with food rescue organisations and supporting the Fight Food Waste CRC and Stop Food Waste Australia to identify financial instruments that could encourage greater participation in food donation programs. |
| **A9** | **Provide advice to businesses of all sizes**<br>Small to medium businesses in Queensland can register with the free Chamber of Commerce & Industry Queensland ecoBiz program to help them save money and increase efficiencies with tailored advice on how to save on their waste, energy and water bills.<br>Businesses who grow, make, and sell our food can sign up to the Australian Food Pact to make a multi-year commitment to develop solutions to make our food system more sustainable, resilient and circular. Stop Food Waste Australia will work with participating organisations to develop tailored plans which help them achieve their food waste goals. |
| **A10** | **Roll-out food waste avoidance educational materials for businesses and institutions**<br>*Love Food Hate Waste* materials developed for businesses and institutions will allow for consistent messaging to be provided to Queenslanders in different settings, to maximise the overall effectiveness of these educational materials and enable these facilities to demonstrate food waste avoidance behaviours and encourage their customers to reduce food waste. |
| **A11** | **Lead by example at government sponsored events**<br>Queensland Government and local governments to promote *Love Food Hate Waste* food waste avoidance messaging and implement these behaviours and actions at relevant government sponsored events. |

# Actions for delivery—Landfill diversion

| OBJECTIVE | 80 PER CENT OF THE ORGANIC MATERIAL GENERATED IS DIVERTED FROM LANDFILL |
|---|---|
| Scope | Diverting household organic material from landfill |
| | Actions |
| D1 | **Review solutions fit-for-purpose**<br>Local governments to conduct a business case to identify the best fit-for-purpose option to improve household organic waste management in their local government area.<br>This may be an organics kerbside service for households for:<br>• Food Organics (FO)<br>• Vegetable Organics (VO)<br>• Garden Organics (GO)<br>• Food Organics and Garden Organics (FOGO).<br>Or small-scale solutions to process organics, such as:<br>• aggregating organics through mechanisms such as community composting hubs<br>• encouraging home-based approaches for organics processing, including composting, worm farms, bokashi etc.<br>Queensland Government will provide support to inform this decision through:<br>• the Resource and Waste Collection Options Tool to compare potential household waste and recycling collections systems against current systems to develop options for detailed analysis<br>• the findings from the Queensland Government funded trials, including the $770,000 FOGO Kerbside Collection Trials 2021-22 in Townsville, Rockhampton and Lockyer Valley local government areas<br>• the findings from Queensland Government-supported research into onsite processing and collection options for multi-unit dwellings (MUDs)<br>• development of case studies of organic waste management options for households. |
| D2 | **Implement new household collection options which are consistent from the start**<br>Local governments to use the findings of their business case to implement solutions to improve household organic waste management in their local government areas.<br>The Queensland Government will provide support throughout the life of the Organics Strategy to ensure that all councils are provided an opportunity to better manage this material in a way that is fit-for-purpose for their communities. Queensland Government support will require local governments to:<br>• implement education and behaviour change messaging to minimise contamination<br>• for consistency, implement bin lid colour harmonisation to avoid household and collection confusion where kerbside collections are provided<br>• understand and enforce contamination levels to provide confidence to end-markets<br>• incorporate sufficient data collection and auditing processes to monitor uptake and contamination.<br>Local governments are also encouraged to support longer-term supply contracts to provide the organics recycling industry with certainty for investment. |
| D3 | **Make the inputs clear**<br>Develop, implement and align household education and behaviour change tools in partnership with local government and industry to minimise contamination across all household kerbside bins, to maximise organic material being captured in the organics bin and minimise contamination. |

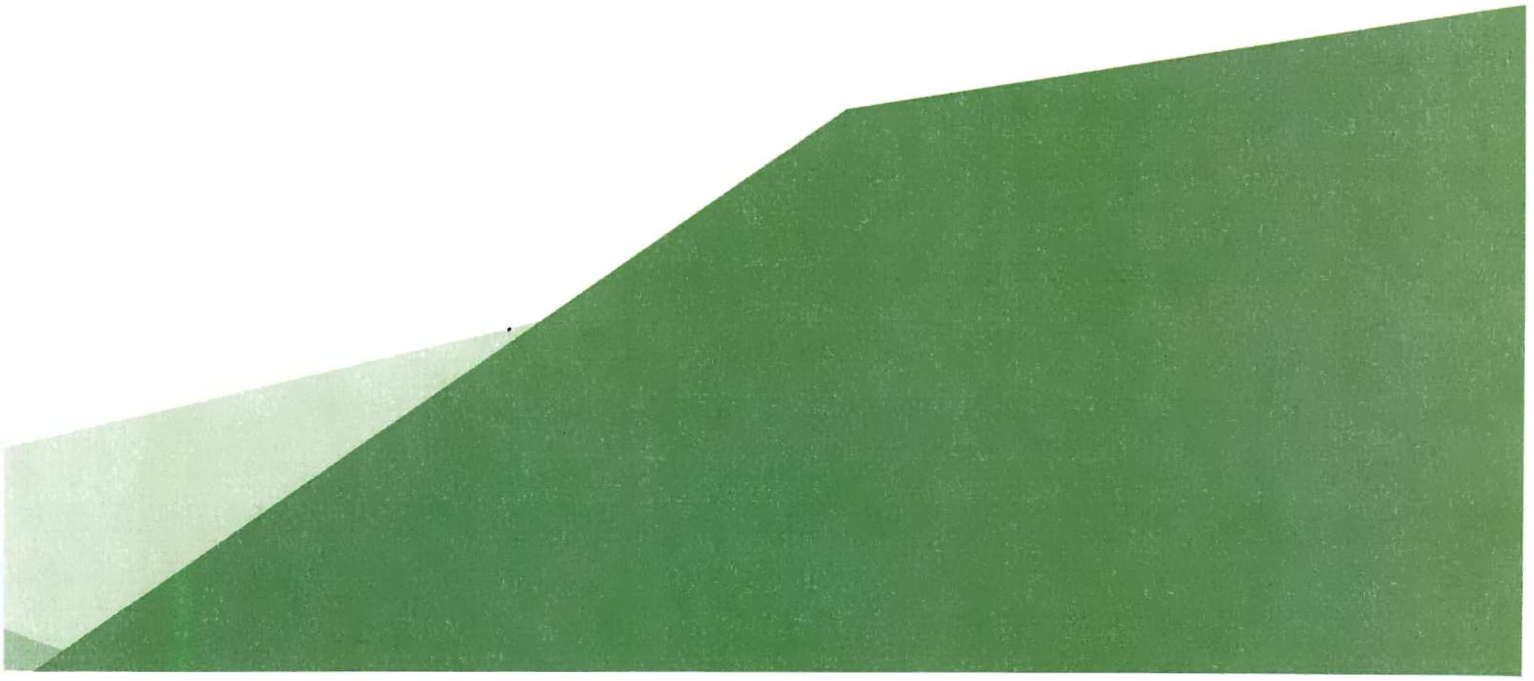
| OBJECTIVE | 80 PER CENT OF THE ORGANIC MATERIAL GENERATED IS DIVERTED FROM LANDFILL |
|---|---|
| **Scope** | **Avoid and divert remaining organic material from landfill** |
| | **Actions** |
| D4 | **Lead by example at government-run events**<br>Where processing facilities exist, Queensland Government and local government to provide a segregated organics collection systems at government-run events. |
| D5 | **Implement new collection options**<br>Business and institutions to explore options to divert their remaining organics from landfill. This may include:<br>• collecting source separated organic waste through a separate service<br>• contributing to local composting hubs depending on the quantity and composition of their waste streams<br>• facilitating onsite organic waste processing.<br>The Queensland Government will continue to explore options to support sectors to collect and process their waste. In 2021, the Queensland Government provided grants of up to $2,500 for Queensland schools to purchase equipment to deliver organics avoidance and resource recovery projects. |
| D6 | **Set a clear end goal**<br>As part of a broader project assessing options and the feasibility of landfill disposal bans, include an assessment of options for banning organics from landfill. |

CASE STUDY

The Organic Waste Smart Schools Program (the Program) offered Queensland State Schools the opportunity to apply for funding for infrastructure and equipment for organic waste and resource recovery projects that contributed to the Program objectives:

- improve organic waste outcomes in Queensland schools
- improve understanding of organic waste reduction concepts in Queensland schools.

One North Queensland school has an existing agricultural plot to grow tropical crops. Students and teachers are already aware of the value of compost but send any spoil or green waste offsite for composting for it to be returned. Funding allowed for large composting bays to be established on-site eliminating the need for transport and giving the school complete control over the input into the compost, which they then use on their food crops.



# Actions for delivery—Recycling

| OBJECTIVE | ACHIEVE A MINIMUM 70 PER CENT RECYCLING RATE FOR ORGANICS |
|---|---|
| Scope | Develop partnerships to understand end market needs |
| | **Actions** |
| R1 | **Understand consumer needs**<br>Develop key partnerships between the organics recycling industry and end users that enable feedstock production to create products that meet specifications and market demand. |
| **Scope** | **Inform new investment** |
| | **Actions** |
| R2 | **Share current data to inform investment needs**<br>Support the development and use of a central knowledge hub for organic material resources for Queensland.<br>This hub should provide static guidance on organic waste recycling and use, as well as interactive elements to help inform business and investment decisions by:<br>• displaying flows of organic and timber waste across Queensland<br>• display current infrastructure capacity across Queensland regions<br>• quantify the benefit of using compost on land<br>• promote opportunities to connect stakeholders to allow for material exchange to match supply and demand.<br>The Queensland Government will explore options to support research and development opportunities through this hub to test novel and innovative recycled products. |
| R3 | **Build for the future**<br>Local governments review planning instruments against Regional Waste Management Plans to ensure that they support solutions that help increase their region's current and future capacity to process organics waste. |
| **Scope** | **Develop and support new infrastructure** |
| R4 | **Increase processing capacity**<br>Queensland Government, local governments, and industry to coordinate investment to support new and upgraded integrated infrastructure solutions to increase processing capacity and improve the quality, safety, and consistency of recycled organic material.<br>This infrastructure should be strategically coordinated to:<br>• leverage existing opportunities under the national Food Waste for Healthy Soils fund<br>• collaborate with councils to create economies of scale and meet multiple infrastructure needs, including mobile infrastructure to suit location and feedstock composition<br>• co-locate organics recovery with other industries such as food processing or agriculture to combine organics streams and produce higher-value products<br>• be in regions identified as having insufficient processing capacity in the Queensland Waste and Resource Recovery Infrastructure Report<br>• support the expansion of valorisation infrastructure to collect and transform inedible by-products into valuable new products<br>• support the bioenergy and biochemical industries to increase their processing capacity in Queensland, including putrescible organic waste streams, while ensuring environmental and social impacts are mitigated appropriately<br>• ensure it is suited to the location, based on considerations around feedstock and proximity to markets and sensitive receiving environments.<br>The planning for this infrastructure should commence in the short-term to allow larger-scale infrastructure to be built in the medium-term. All infrastructure plans that use food waste as a feedstock should be developed against the target of halving the generation of food waste by 2030. |

| Scope | Increase market demand |
|---|---|
| | **Actions** |
| R5 | **Buy back products**<br>Use government purchasing power at state and local levels to increase the uptake of high-quality, recycled organic waste content in government projects to help transform the supply market. |
| R6 | **Support local businesses**<br>Encourage Queensland businesses to adopt and publish sustainable procurement policies that include the use of recycled organic waste content. |
| R7 | **Leverage the carbon market**<br>Monitor implementation and uptake of emissions reduction fund methodologies in Queensland to help inform the prioritisation and development of new methodologies nationally. |
| **Scope** | **Ensure clear quality controls** |
| | **Actions** |
| R8 | **Manage risks with market expansion**<br>Queensland Government to review the policy and regulatory frameworks to reduce regulatory barriers and ensure they:<br>• provide for the use of emerging technology for processing organics<br>• provide clear guidance to inform the expansion of organics collection services in Queensland<br>• support the expansion of viable and sustainable markets for products and outputs arising from the recovery of organics streams<br>• facilitate the development of biomanufacturing, bioenergy and biochemical processing.<br>The outcome of this review will need to provide clear guidance to the community and industry while ensuring adequate risk management and high-quality end products. |
| R9 | **Align data collection and reporting**<br>Queensland Government, local governments, and industry to explore how to better align data collection and reporting systems across state and local government to national classifications and definitions to improve sharing of information.<br>This will not only ensure effective compliance operations but can be used to evaluate program effectiveness and inform future decision making. |
| R10 | **Provide clarity and confidence to end-markets**<br>Support the national review of the Australian Standard for Composting (AS4454) in 2022 to ensure thresholds and contaminant testing is current and helps improve processing to provide fit-for-purpose outputs.<br>Support consideration of updated national and industry specifications for organic waste products to improve industry and customer certainty. |
| R11 | **Ensure we are delivering best practice**<br>The Queensland Government will implement the best practice environmental management guideline and model operating conditions for composting to ensure transparency and consistency for industry. |
| **Scope** | **Monitor implementation** |
| | **Actions** |
| M1 | **Continue engagement throughout the Organics Strategy**<br>Develop a stakeholder engagement and communications plan to define stakeholders, strategies, and mechanisms to deliver the Organics Strategy actions. |


Tilly!

# Next steps

This Organics Strategy provides the overarching framework and actions for improved management of organic material in Queensland.

A supporting Organics Action plan has been developed with key stakeholder partners to ensure actions are coordinated, achievable, sequenced and funded.

This Organics Strategy is just one of several actions and programs to improve waste avoidance, recycling performance and management under the Waste Strategy. Implementing this Organics Strategy is within the context of the full suite of programs, projects, activities, and reviews underway and those that are scheduled to occur. Initiatives that have already been delivered include *Respecting Country, A sustainable waste strategy for First Nations communities*, which will help strengthen and re-frame the relationship with Aboriginal and Torres Strait Islander Queenslanders.

# Measuring our progress

The implementation of actions under this Organics Strategy and its action plan will be monitored, evaluated and reviewed to assess progress against the set targets and allow for adjustment prior to 2030 if required.

The Waste Strategy and supporting legislation is subject to regular reviews to measure the performance against the objectives and ensuring it remains appropriate to achieving the outcomes and continues to set achievable targets. This Organics Strategy will be reviewed in line with the Waste Strategy, every three years.

The Organics Action Plan reviews provide opportunities to adjust actions and delivery as required as concurrent related work progresses. An example of this is the Regional Waste Management Plans, which are being developed with the Region of Councils and will identify specific needs for each region. The Action Plan can also be adjusted to incorporate the planning requirements for the Queensland 2032 Olympics and Paralympic Games, and requirements arising from COVID-19 impacts on supply chains and workforces.

# Drivers for action

## Global

On 25 September 2015, Australia was one of 193 United Nation members to adopt the United Nations Sustainable Development Goals (UN SDGs). The UN SDGs are the blueprint to achieving a more sustainable future.

SDG 12 marks global action on reducing food waste by ensuring sustainable consumption and production patterns. There are 11 targets contributing to SDG 12, with SDG 12.3 directly addressing food waste and loss.

**UN SDG 12.3**

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.

Countries are working to implement initiatives to reduce food waste and loss across the production and supply chain to support this target. Action to better use organic materials also has the potential to support other UN SDGs, including:

- **SDG 2:** end hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- **SDG 8:** promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all.
- **SDG 9:** build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.
- **SDG 13:** take urgent action to combat climate change and its impact.

# National

The *National Food Waste Strategy* requires a 50 per cent reduction in food waste by 2030 by every Australian state and territory to align with UN SDG 12.3.

In 2018, the Fight Food Waste CRC commenced with a $30 million grant from the then federal Department of Industry, Innovation and Science CRC Program.

The Fight Food Waste CRC aims to unite science and industry to:

- reduce food waste throughout the supply chain
- transform unavoidable waste into innovative products
- engage with industry and consumers to deliver behavioural change.

Further national action being undertaken to specifically address food waste include:

- release of the national food waste baseline to monitor and track progress toward the national target
- the revised national food waste baseline set for Australia at 7.6 million tonnes of food waste generated annually across all sectors
- the establishment of Stop Food Waste Australia in 2021, with funding support from federal, Queensland and other state governments, industry and the food rescue sector
- diverting more food to the food rescue sector
- support for education campaigns
- research and technological improvements to improve agricultural efficiency and innovation, waste treatment infrastructure, and ways to create value from food waste.

Strategy 12 of the 2018 *National Waste Policy* signals the need to reduce organic waste, including garden and food waste, by avoiding their generation and supporting diversion away from landfill into soils and other uses, supported by appropriate infrastructure.

The *National Waste Policy* was supported by the *National Waste Policy Action Plan 2019* which set national targets, including to:

- reduce total waste generated in Australia by 10 per cent per person by 2030
- achieve an 80 per cent average resource recovery rate by 2030
- significantly increase the use of recycled content by government and industry
- halve the amount of organic waste sent to landfill by 2030
- make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

**Target for 2030**

By halving organic waste to landfill, 3.3 million tonnes less organic waste would go to landfill every year in Australia.

The *National Waste Report 2020* identified a two per cent reduction in the estimated organics waste disposed to landfill across Australia in 2018-19, compared to the 2016-17 figures.

The *National Soil Strategy* sets how Australia will value, manage and improve its soil for the next 20 years. These actions will ensure that soil continues to contribute to agricultural productivity, environmental sustainability, and economic growth.

A $67 million Food Waste for Healthy Soil Fund was established by the Commonwealth Department of Agriculture, Water and the Environment to support the diversion of household and commercial FO and GO from landfill to soil via the expansion of existing FOGO processing infrastructure and capacity. To leverage this funding and support Queensland programs, the Queensland Government is investing up to $11 million for the Queensland Food Waste for Healthy Soils Program.

# Queensland

The Waste Strategy, released in July 2019, provides the framework for Queensland to become a zero-waste society, where waste is avoided, reused and recycled to the greatest possible extent, using the principles of a circular economy to retain the value of material for as long as possible. The Waste Strategy sets long-term targets for improved recycling and resource recovery rates by 2050.

**Waste Strategy targets for 2050**

- 25% reduction in household waste
- 90% of waste is recovered and does not go to landfill
- 75% recycling rates across all waste types

The Queensland Government has already supported actions to reduce generation of organic waste and divert organic material from landfill including:

**Research, development and education**

- Providing seed funding to the Centre for Recycling of Organic Waste and Nutrients (CROWN) to promote research, training, and extension capabilities in segregating, collecting, processing, and utilising organic waste materials and imbedded nutrients.
- Supporting the Centre for Organic Research and Education (CORE) to:
  - develop the *Guidelines for Establishing and Operating an Urban Agriculture Enterprise in Queensland*
  - deliver the annual International Compost Awareness Week and National Organics Week campaigns since 2015
- Supporting partnerships in the delivery of commercial food and organic waste collection and composting trials with the City of Gold Coast and Clubs Queensland.

**Queensland Resource Recovery Industries**

- Supporting the move to a circular economy through the development of the *Queensland Resource Recovery Industries 10-Year Roadmap and Action Plan* which sets a framework to accelerate this transition and develop Queensland's resource recovery industries.
- Delivering the Resource Recovery Industry Development Program to fund projects and initiatives that divert waste from landfill, reduce stockpiling and create jobs.

**Queensland Biofutures expansion**

- Releasing the *Queensland Biofutures 10-Year Roadmap and Action Plan*, which includes:
  - setting the pathway to establish Queensland as a world leading sustainable biomanufacturing and biotechnology region
  - the Queensland Government working with research institutions and across sectors, including the agriculture and waste industries, to develop a strong biofutures sector to attract international investment and create regional, high-value and knowledge-intensive jobs
  - the $5 million Queensland Waste to Biofutures Fund that provides support for the development of Queensland-based pilot and demonstration or commercially scalable projects that use conventional waste streams or biomass to produce bioenergy, biofuels and high value bioproducts
  - $1 million investment towards a business case to establish Queensland's first Future Food BioHub in Mackay, for advanced biomanufacturing creating plant-based alternatives that are healthy, sustainable and generate local employment
  - delivery of a Queensland biomass data and mapping dashboard
    - delivered in partnership with the Australian Biomass for Bioenergy Assessment, the biomass data and mapping tool provides a snapshot of data on forestry, cropping, urban waste, intensive livestock, food processing and horticulture
    - the dashboard enables better links between biomass suppliers and end users to retain the value from organic material destined for landfill or other low value uses.

## Queensland's zero net emissions future

The Queensland Government has already supported actions to reduce the generation of organic waste and divert organic material from landfill by:

- setting climate targets to reduce emissions and create jobs:
  - Achieving zero net emissions by 2050
  - An interim target to reduce emissions by at least 30 per cent below 2005 levels by 2030
  - 50 per cent of Queensland's energy generation coming from renewable sources by 2030
- creating the Climate Action Plan and Queensland Climate Adaption Strategy to ensure Queensland meets its targets and is ready to harness the opportunities and manage the risks from a changing climate
- invested over $6 billion in climate action since 2015, including a $2 billion Queensland Renewable Energy and Hydrogen Jobs Fund from 2021
- funding has supported sectoral and regional initiatives that help to reduce emissions and value organic resources, including innovative circular economy initiatives.

Examples include providing seed funding for the Australian-first Circular Economy Lab, the $1.9 million Communities in Transition Pilot Program, and our partnership with the Chamber of Commerce and Industry to support small and medium enterprises.

## Agriculture and food industry development

- Releasing a future-focused Agribusiness and Food Strategy which:
  - positions the agribusiness and food sector to emerge from COVID-19 and establish a strong foundation for the future
  - anticipates future changes in the way we grow, produce, harvest, distribute and consume food, fibre, fuel, and other primary products. The strategy identifies opportunities to boost productivity, develop new value-added and globally competitive products for expanding markets, support rural communities, and jobs within the regions and businesses across the value chain.
- Releasing the *Queensland Agriculture and Food Research, Development and Extension 10-Year Roadmap and Action Plan* (RD&E Action Plan) which includes:
  - setting the vision for Queensland's internationally recognised agriculture and food research, development and extension to underpin a productive, profitable and sustainable sector
  - supporting the existing sector to grow and develop new business, the RD&E Action Plan highlights the importance of exploring research, development and extension opportunities related to agriculture and food waste minimisation and utilisation
  - the Queensland Government undertakes research and development, commercialisation and investment attraction in digital technologies and management systems. This is to retain quality and minimise waste, including remote sensing, blockchain, packaging, storage, and innovative processing methods and novel products that use timber and agricultural by-products
  - value-adding opportunities for agricultural and food by-products, waste and surplus production due to its continuing to be a major focus for Queensland to grow the value of the sector.
- Establishing partnerships with research corporations, industry and government:
  - to fund circular economy projects, including trials in Goondiwindi for cotton textile waste returned to crops to improve soil health
  - develop a textile waste action plan to address the growing challenge of textile waste being disposed to landfill.

# Queensland's Organics Strategy Summary

## Our vision

Achieving social, economic and environmental benefits by harnessing the value from organic materials to the greatest possible extent.

## Objectives

By 2030:

- halve the amount of food waste generated
- 80 per cent of the organic material generated is diverted from landfill
- achieve a minimum 70 per cent recycling rate for organics.

## Outcomes

By 2030:

- reduce organic waste generation, food loss, food waste and associated resource losses in food production and transport to consumers
- improved food security through increased and effective redistribution of food to Queenslanders in need
- reduced costs for businesses and households through organic waste avoidance
- production of high-value end-use products and markets
- increased organic processing capacity
- increased economic opportunity, infrastructure, investment and employment through end-use product and market development and services for organic recycling
- improved soil structure and health, promoting food production and food nutrient quality
- reduced reliance on artificial fertilisers and improved water quality and aquatic environments
- reduced greenhouse gas emissions and climate change impacts.

## Action themes

- Education and behaviour change
- Infrastructure and services
- Product and market development
- Data, regulation and enforcement

## Action plan

Identifies further details of sequencing, timing and dependencies of actions.

## Ongoing monitoring and evaluation

Monitoring and evaluation will be ongoing with regular reviews conducted in consultation with stakeholders to allow for adjustment if and when required over the next ten years to ensure targets, objectives and outcomes are being achieved.

# Glossary

**Bagasse**—fibrous waste remaining when sugarcane stalks are crushed to extract juice.

**Biosolids**—organic solids derived from biological wastewater treatment processes that are in a state where they can be used as nutrients and soil conditioning agents, as a source of energy or for some other use. Sewage treatment plants are the main source of biosolids in Queensland.

**Circular economy**—an alternative to the traditional 'linear' economy based on the 'take-make-use-dispose system', in which products and materials keep circulating within the economy at their highest value for as long as possible, through reuse, recycling, remanufacturing, delivering products as services and sharing.

**Commercial and industrial waste (C&I)**—produced by business and commerce, and includes waste from schools, restaurants, offices, retail and wholesale businesses, and manufacturing industries.

**Construction and demolition waste (C&D)**—includes waste generated from building, repairing, altering or demolishing infrastructure for roads, bridges, tunnels, sewerage, water, electricity, telecommunications, airports, docks or rail.

**Compost**—a product created by the breakdown of organic matter by bacteria and other mico-organisms into a nutrient-rich natural fertiliser.

**Compost hub**—a central location where community members can compost their waste, for example, a community garden.

**Compostable products**—products that meet Australian Standard 4,736 or Australian Standard 5,810, or products made entirely out of materials that will disintegrate into natural elements within a home or commercial composting environment as specified by the relevant Australian Standard.

**Contamination**—any material found in a bin that is not accepted by an organic processing facility.

**Core waste**—waste generally managed by the waste and resource recovery sector, comprising solid non—hazardous waste and hazardous waste including liquids. It is generated in the municipal, construction and demolition, and commercial and industrial sectors, and includes biosolids but generally excludes primary production.

**Cotton gin trash**—a by-product created in the cotton ginning process.

**Disposal**—the process of getting rid of wastes by landfilling or incineration without energy recovery. It is the least acceptable option under the waste management and resource recovery hierarchy.

**Energy recovery**—involves the conversion of waste materials into useable heat, electricity or fuel through processes such as combustion, gasification, pyrolisation and anaerobic digestion.

**FO**—food organics collection.

**Food hub**—food producers or another organisation which aggregates, distributes and markets food products directly to the consumer.

**FOGO**—food organics and garden organics collection.

**Garden waste**—includes grass clippings, tree, bush and shrub trimmings, branches and other similar material resulting from domestic or commercial gardening, landscaping or maintenance activities.

**GO**—garden organics collection.

**Kerbside collection**—the collection of household waste left at the kerbside for collection by local government collection services.

**Municipal solid waste (MSW)**—waste generated by households and waste collected by or for a local government. It includes waste generated from street sweepings, public rubbish bins, maintaining a public place and collection of large items from domestic premises by a kerbside collection service.

**Organic processing**—involves the recovery of putrescible wastes through activities such as anaerobic digestion, mulching, composting or vermiculture.

**Putrescible**—solid waste which contains organic matter capable of being decomposed micro-organisms.

**Recycling**—is the process of extracting materials found in waste and converting them into useful products.

**Recovered material**—waste that has been diverted from landfill, including material that has been recycled, reprocessed or stockpiled for future use.

**Recovery rate**—the proportion of a waste stream that is recovered.

**VO**—vegetable organics collection.

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# Appendix 1—Queensland Organics Stakeholder Advisory Group members

## Queensland Organics Stakeholder Advisory Group members

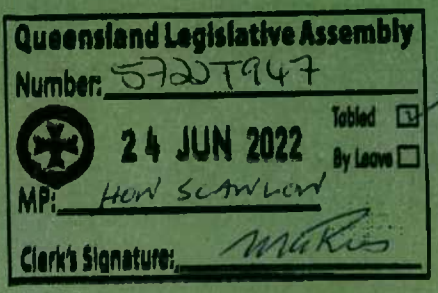
Members meet regularly to promote organics management action within their sector and collaborate with representatives from other sectors.

### Peak bodies

- Australian Council of Recycling
- Australian Organic Recyclers Association
- Australian Packaging Covenant Organisation
- Boomerang Alliance
- Local Government Association of Queensland
- National Retail Association
- Queensland Farmers' Federation
- Waste Management & Resource Recovery Association Australia
- Waste Recycling Industry Association Queensland.

### Key business members

- Foodbank Queensland
- Urban Utilities
- OzHarvest.


Queensland Legislative Assembly
Number: 572T947
24 JUN 2022
Tabled
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MP: Hon SCANLON
Clerk's Signature:

#32402