



THE BEST PRACTICE GUIDE FOR
Early Childhood Education
and Care Food Environment

Sustainable Food Practices

MODULE 5



The Best Practice Guide for Early Childhood Education and Care Food Environment

Module 5: Sustainable Food Practices

This Sustainable Food Practices (SFP) module is one of a series within *The Best Practice Guide (BPG) for Early Childhood Education and Care (ECEC) Food Environment, birth to 5 years*. The SFP module provides practical, evidence-informed guidance aligned with the Early Years Learning Framework (EYLF) v2.0 and the National Quality Standard.

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Dr Ros Sambell

Edith Cowan University +61 8 6304 5424
270 Joondalup Drive r.sambell@ecu.edu.au
Joondalup WA 6027

Design & layout: Beckon Designs

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- Where concerns exist about a child's safety, wellbeing, growth, development, swallowing or health, seek timely medical advice per your service escalation procedures. For emergencies, call 000.
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- References to EYLF/NQS are for alignment; state/territory frameworks may use different terms.

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Acknowledgement of Country

We acknowledge and respect Aboriginal and Torres Strait Islander peoples as the traditional custodians of the lands on which this guide was created across Australia, and recognise and respect the significance of their communities, cultures and histories.

Foreword

'Nurturing Healthy Futures Best Practice Guide' – launching September 2026

Early childhood is a powerful window for shaping lifelong relationships with food, health, and community. Early Childhood Education and Care (ECEC) services play an essential role in nurturing these foundations – not only by providing meals, but by creating environments where children feel safe, included, curious, and connected. The 'Nurturing Healthy Futures Best Practice Guide' has been developed to support this vital work.

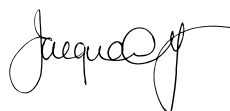
This guide brings together practical, evidence based strategies to help ECEC services reflect and enhance the food environments they offer across metropolitan, regional, and remote communities. Funded by Healthway and delivered by Edith Cowan University, it reflects extensive consultation, research, and collaboration with educators, health professionals, families, and community partners. The result is a resource designed to be both aspirational and achievable – supporting services to embed nourishing, culturally responsive, and sustainable practices in their everyday routines.

The guide is organised into a set of interconnected modules that together form a holistic approach to food provision and learning in ECEC. It provides practical guidance on everyday mealtimes practices, menu planning and meal quality, food safety, and food education, alongside strategies to strengthen partnerships with families and embed best practice into service-wide systems to support consistency, sustainability, and long-term impact.

Together, these modules acknowledge that safe and supportive food environments are not created through single actions, but through everyday choices, relationships, and shared commitments. They recognise the diversity of communities in Australia and the importance of culturally safe, inclusive approaches that honour children's identities and family traditions.

By adopting the practices outlined in this Guide, ECEC services can help build strong foundations for lifelong wellbeing for young children – supporting them to thrive physically, socially, and emotionally.

I hope this resource empowers educators and leaders to continue building safe and supportive food environments where every child feels included and respected, and where everyday food experiences support connection and nourishment. By noticing and responding to children's cues and partnering with families, services can support children's wellbeing as they grow and learn.



Dr Jacqueline McGowan-Jones

Commissioner for Children and Young People (WA)

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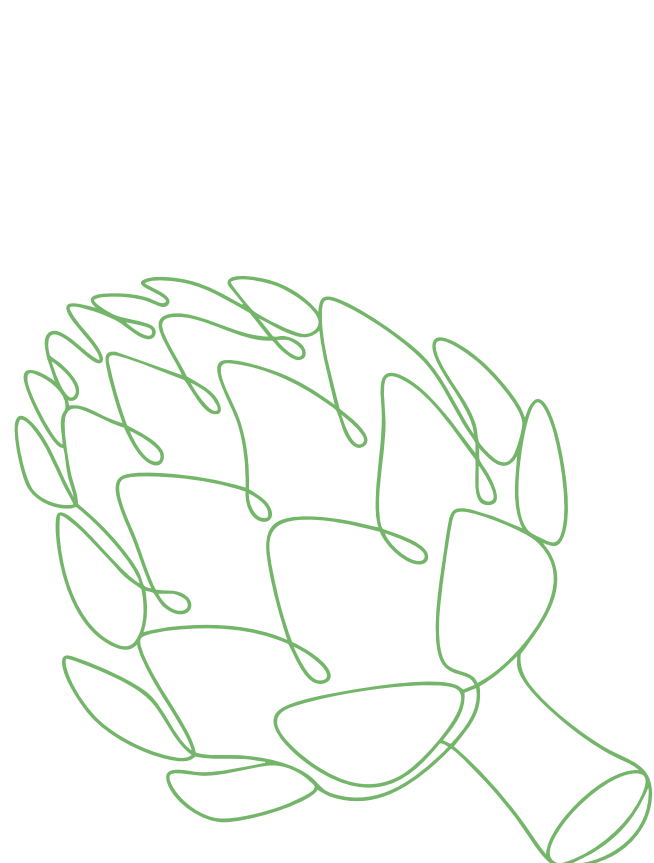
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Background

ECEC food environments are uniquely positioned to support sustainability by implementing practices that can reduce environmental impacts while creating meaningful opportunities for children to experience and explore the interconnections between people, animals, plants, lands and water through food.

The Early Years Learning Framework (EYLF) (Version 2.0) recognises sustainability as an important consideration for children’s learning and development and that educators and children have active roles to play in contributing to more sustainable communities.¹ Through the food provided, mealtimes, and food education, ECEC services can provide meaningful opportunities for children to experience and engage with sustainable food practices.

This Sustainable Food Practices (SFP) module aims to:

- Support ECEC services to embed sustainable food practices that are practical, achievable and aligned with everyday service operations.
- Provide support for ECEC services to reduce the environmental impacts of food through practical strategies such as reducing food waste, considering food sourcing, protecting biodiversity and minimising unnecessary packaging where appropriate.
- Provide practical guidance on applying sustainable food principles within food provision – including whole, minimally processed foods and plant-based foods such as vegetables, where appropriate.
- Encourage sustainable food practices that strengthen connections with local communities and encourage the use of seasonal and locally available foods, where practical.
- Provide guidance on planning, establishing and maintaining food gardens, including consideration of safety, risk assessment and risk management.
- Support educators, cooks and service leaders to create meaningful opportunities for children to engage with sustainability through everyday food experiences, including mealtimes, food education and gardening.

The sections below outline why this guide was developed, how it connects to the Artichoke Model and who it is designed for.

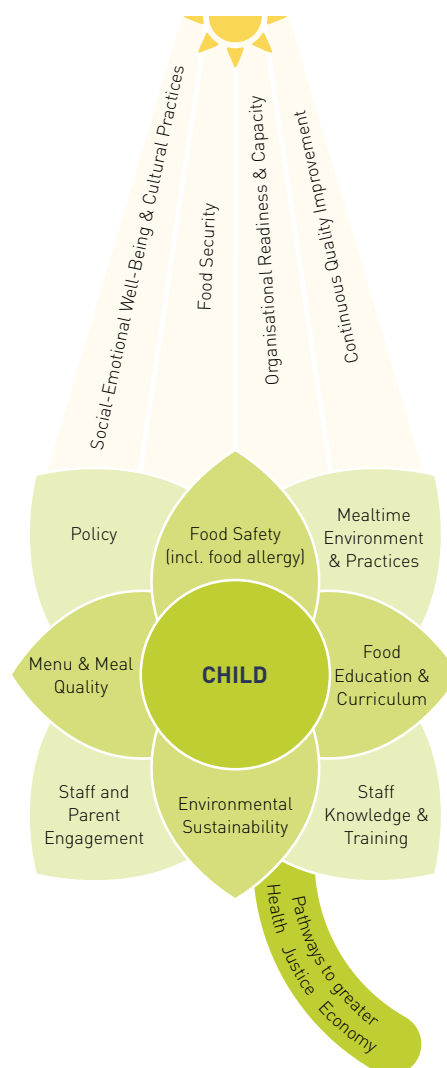
Why this guide was developed

Many Australian children spend significant time attending ECEC settings each week, where the food provided to them, mealtimes, and food-related learning are part of everyday experiences. This creates a unique opportunity for ECEC services to embed sustainable food practices that can contribute to positive outcomes for children, communities and the planet. Small, practical changes implemented across the large number of ECEC services across Australia have the potential to collectively reduce environmental impacts, while providing young children with opportunities to experience and engage with sustainable food practices from an early age.

The SFP module was developed to support cooks, educators, service leaders and approved providers with practical guidance to embed sustainability across ECEC food environments in ways that are achievable within everyday practice. Further information on the principles underpinning sustainable food environments is provided in the Setting the Scene section.

The SFP module sits within the Artichoke Model (Figure 1), which guides the overall structure for this Best Practice Guide.

FIGURE 1: *The Artichoke Model*



What is the Artichoke Model?

The Artichoke Model: ECEC Food Environment Model² is a visual way of looking at the whole food environment in early learning settings.

Like the layers of an artichoke, the model places children's everyday food experiences at ECEC at the centre, with the people, places, systems and routines that shape those experiences being the 'leaves' surrounding and supporting the child. Each 'leaf' represents a key area of the food environment, and together they show how everyday practices, relationships, curriculum, policies and service systems all work together.

Where did it come from?

The Artichoke Model was co-designed in 2024 by members of the National Nutrition Network for Early Childhood Education and Care (NNN-ECEC), drawing on their collective experience as researchers, practitioners and policymakers.² Through collaborative discussion and visual mapping, the group identified the key components of food environments, creating a simple, sector-owned way of mapping the ECEC food environment that feels recognisable to services and usable in day-to-day practice.

What does it include and why?

The Artichoke Model maps **12 connected 'leaves'** across the ECEC food environment, grouped into three layers:

- **What – food provided** (for example: Menu and Meal Quality, Food Safety and Food Allergen Management, Food Education and Curriculum, Environmental Sustainability)
- **How – feeding practices and support** (for example: Mealtime Environment and Practices, Staff Knowledge and Training, Staff and Family Engagement, Policy)
- **Environmental levers – service conditions that shape what's possible** (for example: Social-emotional wellbeing and Cultural Practices, Food Security of the ECEC service, Organisational Readiness and Capacity, Continuous Quality Improvement).

Each leaf includes practical topics and reflection questions that services can use to think about where food and mealtimes already work well, where children might need something different, and what the next small step for improvement could be.

This Best Practice Guide builds on the Artichoke Model. The project team used the 12 'leaves' to scope and streamline key themes and sub-topics, then developed modules that turn the high-level map into practical recommendations, examples and tools for services. Each module zooms in on one or more parts of the Artichoke Model while still keeping sight of the whole service.

What does the Artichoke Model mean for Sustainable Food Practices?

Within the Artichoke Model, Sustainable Food Practices (SFP) sits mainly in the 'What – food provided' layer, alongside Menu and Meal Quality, Food Safety (including food allergy) and Food Education and Curriculum, with strong links to the 'how' and 'environmental levers' leaves. The SFP module draws on several interconnected layers of the Artichoke Model. While the Environmental Sustainability leaf provides the primary focus, the module also recognises the important links between Sustainability, Food Education, and Food Safety. Sustainable food environments are shaped not only by the food that is provided, but also by the opportunities children have to learn about food through everyday experiences, and by ensuring that sustainability initiatives are implemented safely and appropriately. For the SFP module, the Artichoke Model highlights that creating sustainable food environments is an ongoing process of quality improvement rather than a one-off initiative. Organisational commitment, educator and cook knowledge, family and community partnerships and ongoing quality improvement all contribute to strengthening practice over time. This module translates these elements into practical guidance to help ECEC services embed food sustainability and build on their practices over time.

Scope of the Sustainable Food Practices (SFP) module

The SFP module focuses on:

- Embedding sustainability principles into the food environment and everyday practice in ECEC services.
- Planning, purchasing and preparing foods in ways that support sustainable food systems.
- Reducing food waste through food planning, storage, preparation, meal service and waste management practices.
- Creating opportunities for children to learn about food sustainability and where food comes from through everyday experiences, including cooking, gardening, learning experiences, and mealtime conversations, while supporting children's agency and environmental stewardship.
- Supporting environmentally sustainable food practices, including consideration of food sourcing, local and culturally relevant foods, seasonal produce, packaging, resource use and waste reduction. Building partnerships with families and communities to support sustainable food practices and learning.
- Strengthening organisational commitment through leadership, quality improvement and continuous reflection to embed sustainability over time.

This module focuses on services that provide food to children as well as lunchbox services.

What is not included?

This module does not:

- Provide detailed guidance on meeting children's nutritional requirements or menu planning in line with the Australian Dietary Guidelines (these are covered in the Menu and Meal Quality module).
- Provide detailed guidance on responsive feeding, mealtime interactions, or the social, emotional and sensory aspects of mealtimes (these are covered in the Mealtime Environment and Practices module).
- Replace existing legislation, regulations, food safety requirements or service policies.
- Prescribe specific environmental or sustainability accreditation programs or certifications.
- Focus on outside school hours care (OSHC), although some principles may still be useful in those settings.

ECEC staff and services should use this module alongside relevant regulations, service policies and any clinical advice for individual children.

Acknowledgements

This Sustainable Food Practices (SFP) module was developed through a strong, collaborative co-design process. For the purposes of citation and attribution, members of the Best Practice Guide Project Team, the Sustainable Food Practices Working Group and Best Practice Guide Advisory Group, together with those acknowledged under Workshop Development and Facilitation, Meetings Chair, and Additional Consultation, are collectively recognised as the Sustainable Food Practices Consortium. Contributions across the Consortium varied according to individual expertise and involvement and included Conceptualisation, Writing: original draft, and Writing: review and editing, as applicable to each contributor's role.

We sincerely thank the individuals and organisations represented across the Consortium for the breadth and depth of expertise they brought across early learning practice, nutrition and dietetics, public health, government, regulation, peak bodies, training, service delivery, food safety, education, and sustainable food practices. Their generous time, practical insights, and commitment to improving food environments in early learning settings have directly strengthened the relevance, feasibility, and quality of this guidance.

We are especially grateful to the educators, service leaders, cooks, and chefs in early childhood services across Australia who shared their time, everyday experiences, and honest insights during development. Their knowledge grounded this Guide in real practice and reminded us throughout what truly matters at mealtimes.

We acknowledge the National Nutrition Network for Early Childhood Education and Care (NNN-ECEC) for their foundational role in developing the Artichoke Model and for their sustained commitment to improving food environments for young children across Australia.

Sustainable Food Practices Working Group

Our working group, together with additional consultation, brought together cooks with extensive experience in ECEC food environments, a service leader, and experts in nutrition and sustainable food environments, food safety, education, and food allergy management to shape the SFP module, with a particular focus on the needs of regional and remote services.

- **Ms Caterina Benati**
Cook, Nature's Atelier – Child Care & Early Learning (Regional WA)
- **Ms Bek Clancy**
Public Health Nutritionist, Miwatj Health Aboriginal Corporation
- **Ms Lorraine Hingston**
Cook, One Tree Wickham Children's Service (Very remote WA)
- **Dr Rebecca Lindberg**
Public Health Nutrition Researcher, Deakin University (VIC)
- **Dr Ros Sambell**
Chair, National Nutrition Network – Early Childhood Education and Care
- **Ms Leah Stuart-Douglas**
Director, Regional/Remote WA

Best Practice Guide Advisory Group

Our Advisory Group (listed alphabetically) provided high-level guidance and sector insights across early childhood education, health, nutrition, government and community organisations.

- **Professor Lennie Barblett**
Professor of Early Childhood Education, Edith Cowan University, WA
- **Ms Fiona Champion**
Senior Regulatory Officer, Early Childhood, Regulation and Communication, Metro North, North Lakes, Department of Education, Queensland (QLD)
- **Ms Penelope Clark**
Senior Dietitian (Community), Public Health – Improvement, Department of Health, TAS
- **Associate Professor Kathy Cologon**
Associate Director, Children, Families and Communities; Children's Voices Centre, NSW
- **Ms Wendy Cook**
Family Day Care Manager, Busselton Family Resource Centre, The Y, WA
- **Ms Katie Dix**
E-Learning Content and Projects Coordinator, Early Childhood Australia
- **Ms Kirsty Elliott**
CEO, Nutrition Australia QLD
- **Ms Leanne Elliston**
CEO, Nutrition Australia ACT
- **Ms Amanda Ferguson**
Project Manager, Foodcore Nutrition Services, WA

- **Ms Ricky Gelman**
Nutrition Lead, National Nutrition Foundation, Victoria (VIC)
- **Ms Jodie Gray**
Quality Manager, Department of Communities, WA
- **Ms Natalie Gulberti**
Director, Education and Care Regulatory Unit, Department of Communities, WA
- **Dr Karen Krist**
Director Food and Nutrition Policy, Department of Health and Aged Care, Australian Government
- **Associate Professor Deana Leahy**
Associate Professor, School of Education, Culture & Society, Monash University, VIC
- **Ms Ciara O'Flaherty**
Principal Policy Officer, Department of Health, WA
- **Dr Ros Sambell**
Chair, National Nutrition Network – Early Childhood Education and Care
- **Mr Blake Stewart**
Manager, Quality Practice and Programs, Australian Children's Education and Care Quality Authority (ACECQA)
- **Ms Aimee Sullivan**
Senior Grants Development Officer, Healthway, WA
- **Dr Suzanne Tamone**
COO, The Creche & Kindergarten Association Limited, QLD
- **Dr Sandra Vale**
CEO, National Allergy Council
- **Dr Jill Whelan**
Principal Project Officer, Early Years Partnership, Strategy and Partnerships, Department of Communities, WA

Case Studies

The Best Practice Guide Team conducted interviews for the case studies and vignettes with the following ECEC staff, to provide on-the-ground examples of sustainable food practices in different contexts:

- **Shelley Carlin**
Marjorie Mann Lawley Daycare Centre, major cities, WA
- **Ranjitha Prema Vasavan**
Goodstart Endeavour Hills, major cities, VIC
- **Lorraine Hingston**
One Tree Wickham, remote WA
- **Fiona McAuliffe**
Nature's Atelier, inner regional, WA
- **Leah Stuart-Douglas**
Regional/remote WA
- **Joanne Waterhouse**
Margaret Ives Community Children's Centre, major cities, SA
- **Dr Ekta Sharma**
Montessori Minds Childcare and Kindergarten, major cities, VIC

Best Practice Guide Project Team

The Best Practice Guide Team led the evidence review, sector engagement and content development for this resource.

- **Dr Ros Sambell**
Project Lead, Public Health Nutritionist, Edith Cowan University
- **Professor Amanda Devine**
Professor of Public Health and Nutrition, Edith Cowan University
- **Dr Audrey Elford**
Public Health Nutritionist and Postdoctoral Research Fellow, Edith Cowan University
- **Mr Lochie Clark**
Public Health Nutritionist and Senior Research Officer, Edith Cowan University
- **Ms Connie Ihlein**
Nutritionist and Research Officer, Edith Cowan University

Workshop Development and Facilitation, and Meetings Chair

The development of the overall process and associated workshops, as well as the chairing of the Advisory Group meetings and facilitation of Working Group workshops, was completed by **Dr Helen Alexiou** from the Knowledge Brokering Group.

Secretariat

- **Dr Audrey Elford**
Public Health Nutritionist and Postdoctoral Research Fellow, Edith Cowan University

Additional Consultation

- **Mr Henry Tan**
Principal Scientific Officer, Food, Environmental Health Directorate, Public and Aboriginal Health Division, Department of Health, Western Australia
- **Dr Merryn Netting**
Paediatric dietitian and food allergy management expert, National Allergy Council
- **Ms Stacey McKenzie**
Early Childhood Teacher B.Ed (Early Childhood Studies)
- **Ms Asha Rojahn**
Early Childhood Teacher, B.Ed (Early Childhood Studies), GradCert Autism Studies

Who this module is for

The SFP module is for people working in ECEC services for children from birth to five years. It applies across centre-based care and family day care. The module is relevant to services that provide food to children as well as services where families provide some or all of the food. Table 1 suggests how this module can be used by each audience.

TABLE 1: *How this module can be used by each audience*

Intended users	How they can use this module
Cooks, chefs, food coordinators and kitchen assistants	To plan, purchase and prepare food that aligns more closely to sustainability principles, including management of food waste.
Service leaders/directors and educational leaders	To set and resource expectations for sustainable food practices, support time and resources for planning and implementing sustainability initiatives, and inform service policies and procedures related to sustainable food practices.
Educators and room leaders (including relief and casual staff)	To embed sustainable food practices into everyday routines, support children's learning about food and sustainability through mealtimes and learning experiences and contribute to feedback on food experiences and sustainability initiatives.
Family day care educators	To plan and provide food sustainability opportunities for mixed-age groups in a home-based setting and embed food sustainability into everyday learning.
Approved providers and management teams	To support consistent sustainable food practices across services, by embedding sustainability into food-related policies and procedures. To support whole-of-service approaches to sustainable food practices and identify where staff may benefit from further support or training.
Allied health partners (e.g. dietitians, nutritionists, speech pathologists, occupational therapists, physiotherapists)	To align dietary advice and food-related recommendations with the service's sustainable food practices, and use a shared language with cooks, educators and families about sustainable food practices.
Quality and regulatory staff, inclusion support staff and local health promotion officers	To inform assessment and rating observations and guidance, support visits, and develop resources related to sustainable food practices in ECEC.
VET and university educators, RTOs and placement supervisors	To integrate sustainable food practices content into training programs, prepare students for sustainable food practices in ECEC, and support reflective conversations during placements.

This module supports everyday practice in ECEC and does not replace clinical, medical or dietetic advice. ECEC staff and services should follow their service policies and procedures, food safety requirements, and any individual allergy, healthcare or action plans for each child.

How to use this guide

Six sections

The guide is divided into six separate sections covering the following topics:

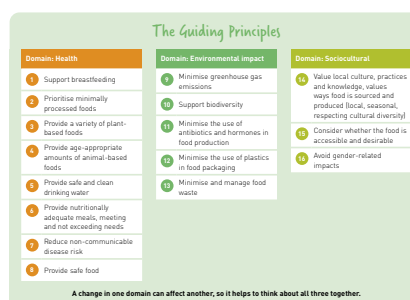
1. Defining Sustainability and the Guiding Principles used in this Guide
2. Plant-based and Minimally Processed Foods
3. Greenhouse Gas Emissions, Biodiversity and Food Packaging
4. Food Waste
5. Local and Seasonal Food
6. Gardens in ECEC Services and Settings

Elements found across sections

Elements	Examples
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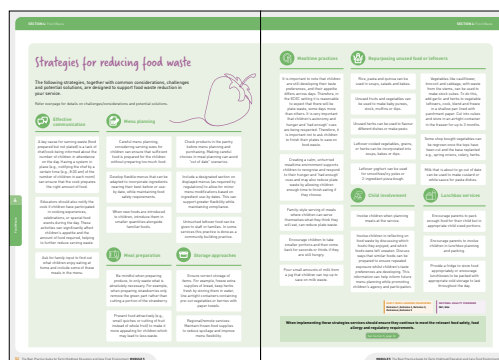
Background information

Supporting background information summarising current evidence and providing context to practical strategies and tools used in the guide.



Practical tools

Practical tools underpinned by evidence and aligning to best practice with suggestions for continuous quality improvement.



Case studies



Links to Early Years Learning Framework and the National Quality Standard

Show the links to the Early Years Learning Framework and National Quality Standard.

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 3

NATIONAL QUALITY STANDARD
QA2, QA5

Setting the scene

How sustainability aligns with ECEC food environments, the NQS and EYLF

Food environments, including those in ECEC settings, play an important role in sustainability by shaping food-related practices and experiences that can contribute to positive outcomes for children, communities and the planet.

Sustainable food practices align with several Quality Areas within the NQS, including Educational Program and Practice (QA1), Children's Health and Safety (QA2), Physical Environment (QA3), Collaborative Partnerships with Families and Communities (QA6), and Governance and Leadership (QA7).¹ Embedding sustainability within food environments can support children's learning and wellbeing, environmentally responsible practices, and provide opportunities to inform a service's Quality Improvement Plan (QIP).

The Early Years Learning Framework (EYLF V2.0) recognises sustainability as an important consideration for children's learning and development. It highlights the interconnections between people, animals, plants, lands and waters, and acknowledges children's capacity to contribute to a fair and sustainable world. Embedding sustainability into ECEC food environments can provide meaningful opportunities to support these concepts in everyday routines.

Sustainability in practice

Sustainability looks different in every service as services operate in different locations and work with different supply chains, budgets, and communities. There is no single version of doing sustainability well, and each service is best placed to determine what is achievable and meaningful within its own context.

Services do not need to implement every sustainable practice at once.

Small, practical changes can make a meaningful contribution over time. Focusing on one area of sustainability and embedding it into everyday practice can be a valuable starting point, with opportunities to build on these practices as capacity and circumstances allow.

Sustainable food practices are not all-or-nothing, and services should recognise and build on the strengths and practices they already have in place.

This module refers to both environmental health and food safety requirements and ECEC regulatory requirements. These frameworks operate alongside each other but have different purposes. Environmental health and food safety requirements primarily address the safe growing, handling, storage, preparation and provision of food.

ECEC regulatory requirements arise under the National Quality Framework and focus on children's health, safety, wellbeing, supervision, educational practice and service operations. In some areas, including gardening, food preparation, composting and food procurement, both frameworks may apply. Services should identify and comply with all requirements relevant to their circumstances. page 74 of this module outlines additional considerations for these requirements.

Considerations for regional, remote, and very remote services

Regional, remote and very remote services may experience unique challenges related to food availability, supply chains, transport, cost, and infrastructure that can influence which sustainable food practices are selected and how they are implemented. Adopting even one manageable practice can be a meaningful step towards creating a more sustainable food environment.

For example, reducing the distance food travels may be more achievable for a metropolitan service with access to local markets and suppliers. In regional and remote communities, sustainable food practices may instead include planning menus around seasonal availability and delivery schedules, storing food carefully to minimise food waste, or growing food on site through vegetable or herb gardens. These are all sustainable food practices in their own right and represent important strengths that services can recognise and build upon.

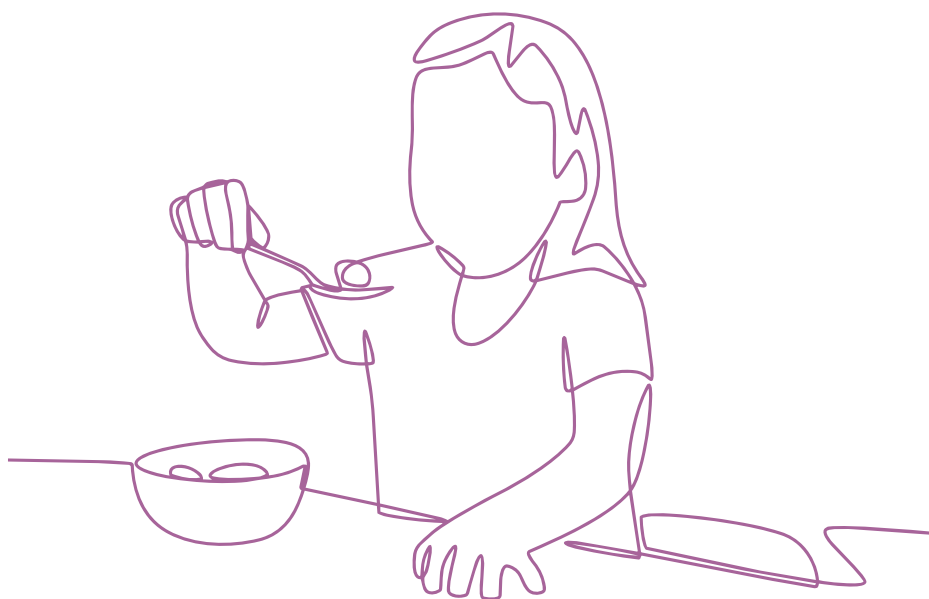
Throughout this section, practical strategies and ideas have been included to reflect the diverse contexts in which ECEC services operate, including regional, remote, and very remote settings. Services are encouraged to adapt the strategies in ways that are meaningful, achievable, and appropriate for their unique circumstances.

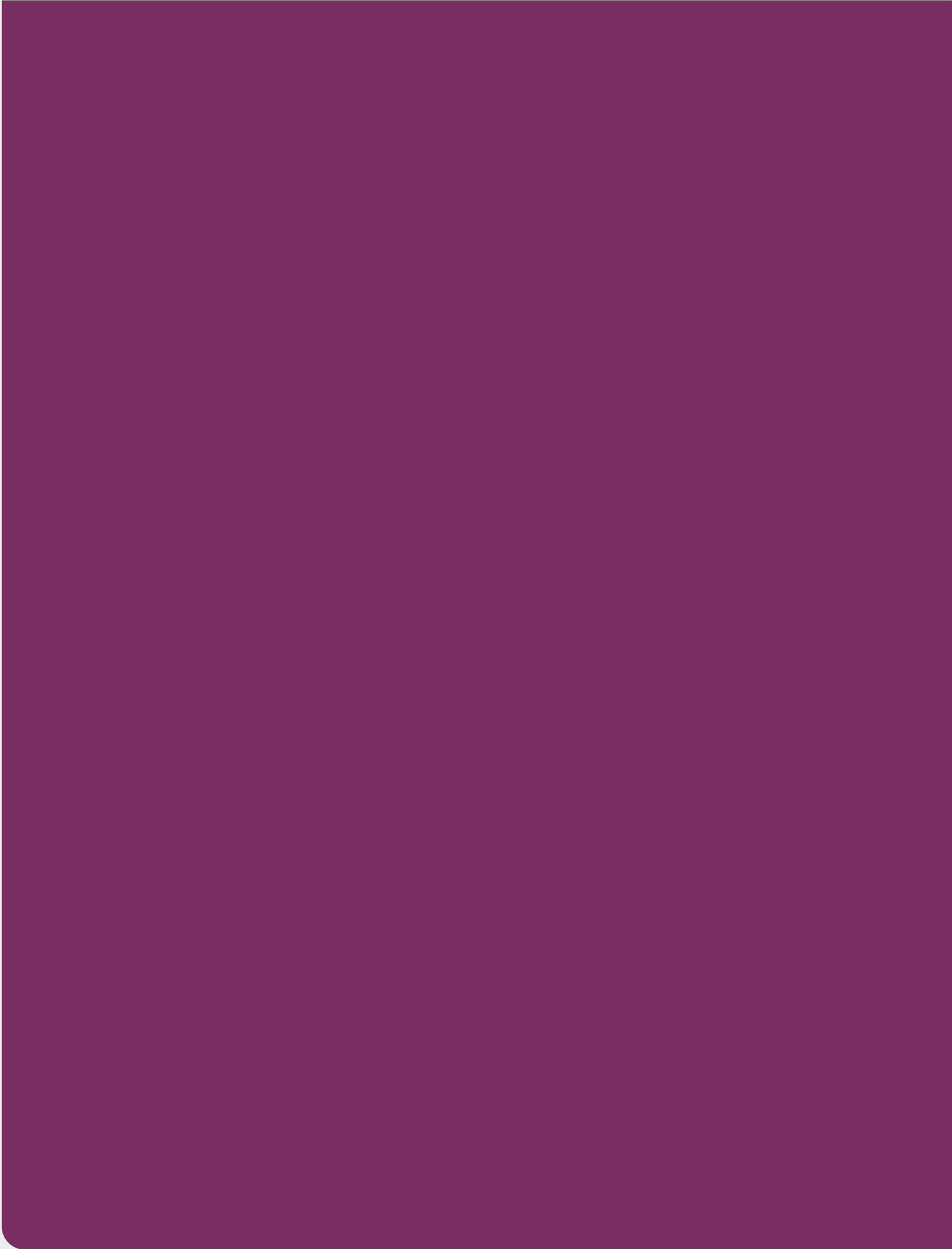
How sustainable food practices links with other modules in this guide

Sustainable food practices can be considered across all aspects of ECEC food environments and aligns closely with the other modules within the Best Practice Guide. Many sustainable food practices naturally overlap with food planning and provision, menu and meal quality, mealtime environments and practices, food education, and continuous quality improvement.

For example, sustainable food practices may influence the foods that are purchased and provided, how food waste is minimised, the mealtime experiences offered to children, and opportunities for children to learn about sustainability and food systems. Sustainability strategies can also support service philosophies and QIPs.

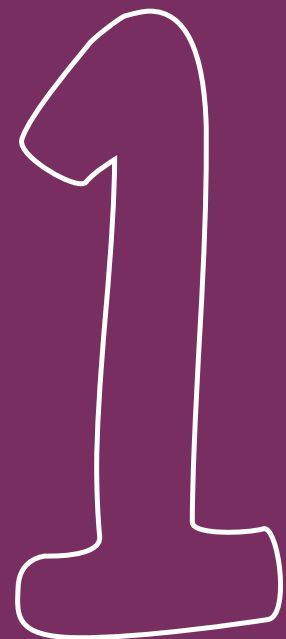
Throughout this module, signposting has been included where relevant to highlight links to other modules.





SECTION 1

Defining Sustainability and the Guiding Principles used in this Guide



Defining sustainability and the guiding principles used in this guide

Food, human health and planetary health are deeply interconnected.³ In 2019, the FAO and WHO brought together international experts to define what a sustainable diet that meets people's nutrition needs looks like.

What the FAO and WHO defined

'Sustainable healthy diets', as defined by FAO and WHO include foods and meals that provide people with the nutrients they need while having a low impact on the environment. They are nutritious, safe, affordable, accessible, equitable and culturally appropriate. Sustainable healthy diets support growth and development, help prevent all forms of malnutrition, reduce the risk of diet-related chronic disease, and help protect biodiversity and the health of the planet. Importantly, all of these dimensions need to be considered together, as focusing on one dimension in isolation can lead to unintended consequences.

In plain terms

Food that gives people the nutrients they need, is safe, is affordable and available, fits their culture, and is produced in a way that does not damage the planet. No one of these can be traded off against the others.

The Guiding Principles

The Sustainable Healthy Diets Guiding Principles³, (referred to as 'The Guiding Principles' hereafter) consists of 16 principles – developed by leading United Nations agencies – across three domains (health, environmental impact, and sociocultural aspects). Together, these principles provide a framework for balanced food decisions that support both human and planetary health.

The Guiding Principles

Domain: Health

- 1 Support breastfeeding
- 2 Prioritise minimally processed foods
- 3 Provide a variety of plant-based foods
- 4 Provide age-appropriate amounts of animal-based foods
- 5 Provide safe and clean drinking water
- 6 Provide nutritionally adequate meals, meeting and not exceeding needs
- 7 Reduce non-communicable disease risk
- 8 Provide safe food

Domain: Environmental impact

- 9 Minimise greenhouse gas emissions
- 10 Support biodiversity
- 11 Minimise the use of antibiotics and hormones in food production
- 12 Minimise the use of plastics in food packaging
- 13 Minimise and manage food waste

Domain: Sociocultural

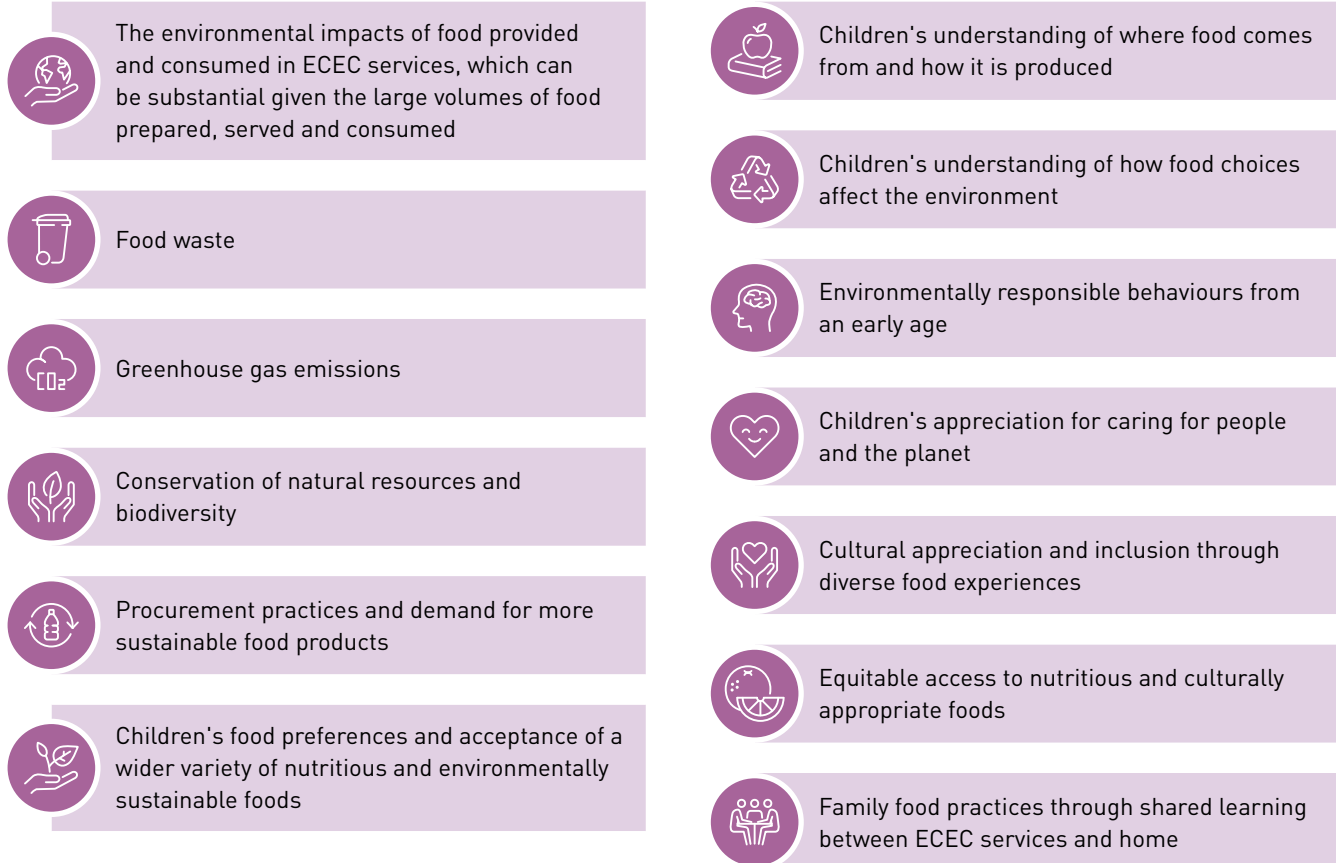
- 14 Value local culture, practices and knowledge, values ways food is sourced and produced (local, seasonal, respecting cultural diversity)
- 15 Consider whether the food is accessible and desirable
- 16 Avoid gender-related impacts

A change in one domain can affect another, so it helps to think about all three together.

Potential impacts of the guiding principles in ECEC

The Guiding Principles contribute to several of the United Nations Sustainable Development Goals, particularly Goal 2 (Zero Hunger), Goal 3 (Good Health and Well-being), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action), and Goal 15 (Life on Land).

Children consume at least 50% of their daily food requirements in ECEC, therefore even small changes to food provision and food education within ECEC settings to be more aligned with the Guiding Principles can have impacts on:



Note: Language used in this section

This section uses the same words as the rest of the Guide. Food is described as nutritious, not healthy. When talking about children it says wellbeing. It talks about children's relationship with food, their participation, and their sense of belonging. The official title of the FAO and WHO framework and its formal definition, which are quoted exactly as published, contain the word "Healthy". After the first mention, this section refers to them simply as the "Guiding Principles".

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 2, Outcome 3,
Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA2, QA3, QA6

The sustainability guiding principles and relevance to ECEC settings

Table 2 provides a summary of the 16 Guiding Principles relating to health, environmental, and sociocultural considerations. It briefly describes each principle, outlines its relevance to ECEC food environments, and provides links to relevant sections within this module and other modules of the Best Practice Guide where practical strategies and further guidance are provided.

Health

List of Guiding Principles within the Health Domain. Principles marked with a star (★) are explored in more detail later in this module).

1 Support breastfeeding	5 Provide safe and clean drinking water
2 Prioritise minimally processed foods ★	6 Provide nutritionally adequate meals, meeting and not exceeding needs
3 Provide a variety of plant-based foods ★	7 Reduce non-communicable disease risk
4 Provide age-appropriate amounts of animal-based foods	8 Provide safe food

TABLE 2: Summary of the Guiding Principles relating to health, environmental, and sociocultural considerations

Principle	Description	Relevance to ECEC
1 Support breastfeeding Initiation of breastfeeding, exclusive breastfeeding until 6 months and continuing until 2 years and beyond combined with appropriate complementary feeding	Many mothers return to paid work before they are ready to stop breastfeeding.^{3,4} Returning to paid work is one of the most commonly cited reasons that mothers stop breastfeeding earlier than they had planned.⁴⁻⁶ Where possible, breastfeeding is recommended as it provides optimal health benefits for infants and is a sustainable feeding option. However, families should be supported to make infant feeding decisions that are appropriate for their individual circumstances.⁷ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 3, page 32	ECEC services can play an important role in supporting working mothers to continue breastfeeding for the first six months and beyond, including up to two years and longer, where desired. NATIONAL QUALITY STANDARD QA2, QA6, QA7

Principle	Description	Relevance to ECEC
2 Prioritise minimally processed foods Whole foods and minimally processed foods and beverages are recommended, whilst limiting highly processed foods	Some food processing can be beneficial in high quality diets, making food available and safer in some situations. However, some forms of processing can lead to high amounts of salt, added sugar, saturated fats and can undermine diet quality when consumed in high amounts.^{3,8} Highly processed foods can also negatively affect planetary health through higher greenhouse gas emissions, greater energy use, and increased packaging and waste.^{9,10} RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Section 2, page 34	ECEC services are well placed to support children's exposure to whole or minimally processed foods as well as building awareness of food processing through a whole-of-service approach. NATIONAL QUALITY STANDARD QA2, QA7
3 Provide a variety of plant-based foods Whole grains, nuts*, seeds legumes, and a variety fruits and vegetables	Diets containing plant-based foods, including fruits, vegetables, nuts, seeds, legumes and wholegrains can have positive human and planetary health outcomes.^{3,11} Research in Australian ECEC services suggests that these foods are often not included often enough on service menus^{12,13} or in lunchboxes brought from home.¹⁴ Whilst there should be no judgement on what is provided in lunchboxes from families, some examples and guidance might be useful. RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 2, page 20 See Section 2, page 27 See Staff and Family Engagement, Section 4, page 51	ECEC services can provide opportunities to increase children's exposure to a variety of plant-based foods and foster curiosity and awareness of these foods across the service. NATIONAL QUALITY STANDARD QA2, QA6, QA7
4 Provide age-appropriate amounts of animal based foods Moderate amounts of eggs, dairy, poultry, fish and small amounts of red meat	The guiding principles outline that diets should be age-appropriate and meet the needs for growth and development of children, paying attention to avoid micronutrient deficiencies.³ A key sustainability principle is the reduction of red meat and an increase of plant-based protein.³ Sustainable diets however emphasises that animal-source foods can be important sources of essential nutrients, especially for young children.¹⁵ Current Australian Dietary Guidelines and related guidance for ECEC recommends red meat to young children as a good source of iron and other nutrients.¹⁶ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 2, page 20 See Staff and Family Engagement, Section 4, page 51 See Quality, Leadership and Governance, Section 1, page 10	Animal-based foods such as eggs, dairy, poultry, fish and some red meat are important sources of nutrients, including protein and iron, which supports young children's growth and development. ECEC services are required to provide nutritionally adequate food to children in line with dietary requirements, which include a variety of animal-based food. NATIONAL QUALITY STANDARD QA2, QA7

Principle	Description	Relevance to ECEC
5 Provide safe and clean drinking water	For exclusively breastfed infants under 6 months of age, no additional fluids are required.⁷ For formula-fed infants, cooled boiled tap water may be used if additional fluids are needed.⁷ From around 6 months of age, cooled boiled tap water can be offered in a cup alongside breastmilk/formula.⁷ After 12 months of age, water and milk/milk alternatives should be the only drinks offered in ECEC settings.^{7,17} RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 2, page 20	Requirement under National Regulations 78, 168. In the ECEC setting, safe drinking water should always be readily available to children. NATIONAL QUALITY STANDARD QA2, QA7
6 Provide nutritionally adequate meals meeting and not exceeding needs	As children consume a substantial proportion of their daily food intake while attending ECEC, services have an important role in supporting nutritionally adequate food and beverage consumption that promote growth, development, learning, and wellbeing.^{7,16,17} RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 2, page 26 See Menu and Meal Quality, Section 4, page 44 See Menu and Meal Quality, Section 5, page 50	Meeting needs is a requirement under National Regulations 78-79, 168. NATIONAL QUALITY STANDARD QA2, QA7
7 Reduce non-communicable disease risk Consistent with dietary guidelines to prevent non-communicable disease	Eating patterns established during early childhood can influence lifelong health.¹⁸ Regularly offering a variety of nutritious foods can help reduce the risk of diet-related non-communicable diseases, including cardiovascular disease later in life.¹⁸ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 1, page 16 See Menu and Meal Quality, Section 2, page 20	Current Australian Dietary Guidelines that underpin recommendations in the MMQ module of the Best Practice Guide focus largely on dietary requirements for non-communicable disease risk reduction. NATIONAL QUALITY STANDARD QA2, QA7
8 Provide safe food – that will not cause foodborne diseases by ensuring food safety risks are adequately managed	Safe food is a fundamental component of the Guiding Principles.³ Young children aged 0–5 are considered vulnerable, and therefore at greater risk of foodborne illness.¹⁹ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Section 6, page 81 See Menu and Meal Quality, Section 8, page 80	Requirement under National regulations 77, 168 which requires health hygiene and safe food practices. ECEC services have an important responsibility when it comes to food safety. NATIONAL QUALITY STANDARD QA2, QA7

Environmental impact

List of Guiding Principles within the Environmental Impact Domain. Principles marked with a star (★) are explored in more detail later in this module).

9 Minimise greenhouse gas emissions

10 Support biodiversity ★

11 Minimise the use of antibiotics and hormones in food production

12 Minimise the use of plastics in food packaging ★

13 Minimise and manage food waste ★

Principle	Description	Relevance to ECEC
9 Minimise greenhouse gas emissions	About a third of greenhouse gas emissions are linked to food.²⁰ Greenhouse gas emissions can be attributed to the types of foods (e.g. fruits and vegetables and plant foods produce the lowest greenhouse gas emissions), but also to the processing and food transport (food miles) and food waste practices.²¹ Therefore, multiple principles discussed in this section are related to greenhouse gas emissions. For example, lowering discretionary products can have significant impacts.²¹ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Food Education, Section 5, page 99 See Section 3, page 40	From an ECEC perspective the opportunity of reducing greenhouse gas emissions lies in menu planning and food procurement, where even small changes, such as considering food miles and purchasing some foods locally, considering the level of processing, choosing producers that support agricultural sustainability and food waste practices can make a substantial difference over time. For food education, children's activities can involve understanding where food comes from, gardening projects, stories and games related to understanding greenhouse gas emissions in a way that is not anxiety provoking for the children. Note: It is acknowledged that some of these components (such as food miles) are not feasible in regional/remote ECEC settings. EARLY YEARS LEARNING FRAMEWORK Outcome 2, Outcome 3, Outcome 4 NATIONAL QUALITY STANDARD QA1, QA2, QA3
10 Support biodiversity	The guiding principles refer to preserving biodiversity, which includes biodiversity of crops, livestock and aquatic resources, with consideration of choosing foods that are not derived from overfishing or overhunting.³ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Menu and Meal Quality, Section 5, page 49 See Section 3, page 40	In ECEC this relates to diverse menus where fruits, vegetables, grains and legumes are rotated, supporting diverse farming systems. It also relates to food education where children can increase their understanding of biodiversity. EARLY YEARS LEARNING FRAMEWORK Outcome 2, Outcome 4 NATIONAL QUALITY STANDARD QA1, QA2, QA3
11 Minimise the use of antibiotics and hormones in food production	The guiding principles recommend the minimisation of the use of antibiotics and hormones in food production.³	The use of antibiotics and hormones in food production is highly regulated in Australia, with regulatory authorities overseeing their use to help ensure that food is safe for consumption.²² EARLY YEARS LEARNING FRAMEWORK Outcome 2, Outcome 4 NATIONAL QUALITY STANDARD QA1, QA2, QA3

Principle	Description	Relevance to ECEC
12 Minimise the use of plastics in food packaging	In some cases, packaging is required to preserve food and ensure food safety, however packaging beyond this can place higher demands on natural resources.^{3,23} RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Section 3, page 44	This principle is relevant in food procurement practices for MMQ and can be embedded into Food Education or centre Quality Improvement Plan. NATIONAL QUALITY STANDARD QA1, QA3
13 Minimise and manage food waste	The sustainable development goals and Australia's national food waste strategy aims to halve food waste by 2030.^{24,40} There are two aspects to food waste: 1. Reducing the amount of food wasted and 2. Food waste management to reduce environmental impacts (e.g., composting/worm farms).^{25,26,27} In addition to this, in services that provide food onsite, there are four types of food waste – inedible food waste (bones, watermelon peels), kitchen preparation waste, serving waste (food that was prepared but never plated) and plate waste (food that was plated but not eaten).²⁵⁻²⁷ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE See Section 4, page 50 See Mealtime Environment and Practices, Section 2, page 20	Addressing food waste in this setting can have impacts at scale. It is estimated a service catering for 200 children typically produces around 1.7 tonnes of food waste annually.²⁸ This can be halved by implementing food waste reduction strategies, which can have substantial impacts. There are specific strategies that ECEC services can implement to reduce and manage. This can also contribute to more efficient budget management by preventing large amounts of purchased food from being thrown away. Recent Australian research suggests that, on average, ECEC services throw away more than one quarter of the food they prepare, with total waste ranging from 9% to 67%. Within this, serving waste (food prepared but not plated) accounted for a higher proportion than plate waste (food left on children's plates).²⁷

Sociocultural

List of Guiding Principles within the Sociocultural Domain. Principles marked with a star (★) are explored in more detail later in this module).

- 14 Value local culture, practices and knowledge, values ways food is sourced and produced (local, seasonal, respecting cultural diversity) ★
- 15 Consider whether the food is accessible and desirable
- 16 Avoid gender-related impacts

Principle	Description	Relevance to ECEC
14 Value local culture, practices and knowledge, values ways food is sourced and produced (local, seasonal, respecting cultural diversity) Cultural diversity of meals – built on respect for culture and culinary practice.	ECEC services purchase large amounts of food and is an important food procurement setting that can have environmental and local economy impacts at scale.²⁹ Purchasing some food from local food producers or community food enterprises can not only have human and environmental health benefits, but also support local food economies, making them more sustainable in the long term.^{30,45} Internationally, local food purchasing is supported through Farm to ECEC programs that interconnect local food procurement, gardening, and food, nutrition & agriculture education for children attending ECEC settings.³⁰ The guiding principles explicitly includes cultural acceptability and respect for food cultures and traditions.³ RELATED GUIDANCE IN THE BEST PRACTICE GUIDE The Best Practice Guide focuses on cultural inclusion throughout, including the consideration of culturally inclusive menus. See Section 5, page 68 See Menu and Meal Quality, Setting the scene, page 13	In Australia, we do not currently have a formal program that supports local food purchasing or farm to ECEC programs. Services may engage in elements of these approaches through purchasing from local producers, community food hubs or growing some food in their service garden. Seasonal purchasing can support food quality and variety, lower transport costs and reduce food costs.^{25,29,31} In addition, there is an educational opportunity for children to explore, experience and learn about local and seasonal foods through the meals they eat, gardening and cooking experiences, play, stories and conversations.^{1,3} The EYLF and NQS emphasise cultural inclusion throughout. In food environments, this includes recognising and valuing diverse cultural food practices by offering culturally appropriate foods, respecting cultural and religious dietary practices, facilitating conversations about food traditions and cultural practices during mealtimes, and avoiding assumptions that one cultural food practice is inherently more acceptable than another.

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 2, Outcome 3,
Outcome 4, Outcome 5

NATIONAL QUALITY STANDARD
QA1, QA6

Principle	Description	Relevance to ECEC
15 Consider whether the food is accessible and desirable	Accessible refers to food that can be physically obtained and is affordable.^{3,32} Desirable refers to eating food that children enjoy, are culturally familiar and socially meaningful.³² RELATED GUIDANCE IN THE BEST PRACTICE GUIDE Accessibility is considered throughout this module on pages 32, 40, 44, 47, 57, and 72. See Menu and Meal Quality, Section 6, page 56 See Menu and Meal Quality, Section 7, page 76 See Mealtimes Environment and Practices, Section 3, page 31	The Guiding principles outline that it must be within the context of what is available, affordable, and desirable for children and families. In the Australian ECEC context, accessibility is important because of the geographical context, where some services may be operating in areas with limited access to fresh, affordable food³³ and therefore fewer choices when it comes to the procurement of sustainable food.
16 Avoid gender-related impacts Especially with regard to time allocation of meal purchasing and preparation	This principle has particular relevance in global contexts where women and girls may take on a greater share of food purchasing and preparation responsibilities.³ More broadly, it highlights the importance of implementing sustainable food practices in ways that are fair, inclusive and responsive to the needs and circumstances of different communities.	In ECEC settings, this principle aligns with the equity and inclusion principles embedded within the NQF and EYLF recognising the importance of implementing sustainable food practices in ways that are fair, inclusive and responsive to the diverse needs of children, families and communities.

NATIONAL QUALITY STANDARD
QA6

Reflective questions



Educators

- How do we make sure conversations about food don't carry assumptions about who does the cooking or shopping at home? When we notice these assumptions coming up, how do we address them without singling anyone out?

SECTION 2

Plant-Based and Minimally Processed Foods

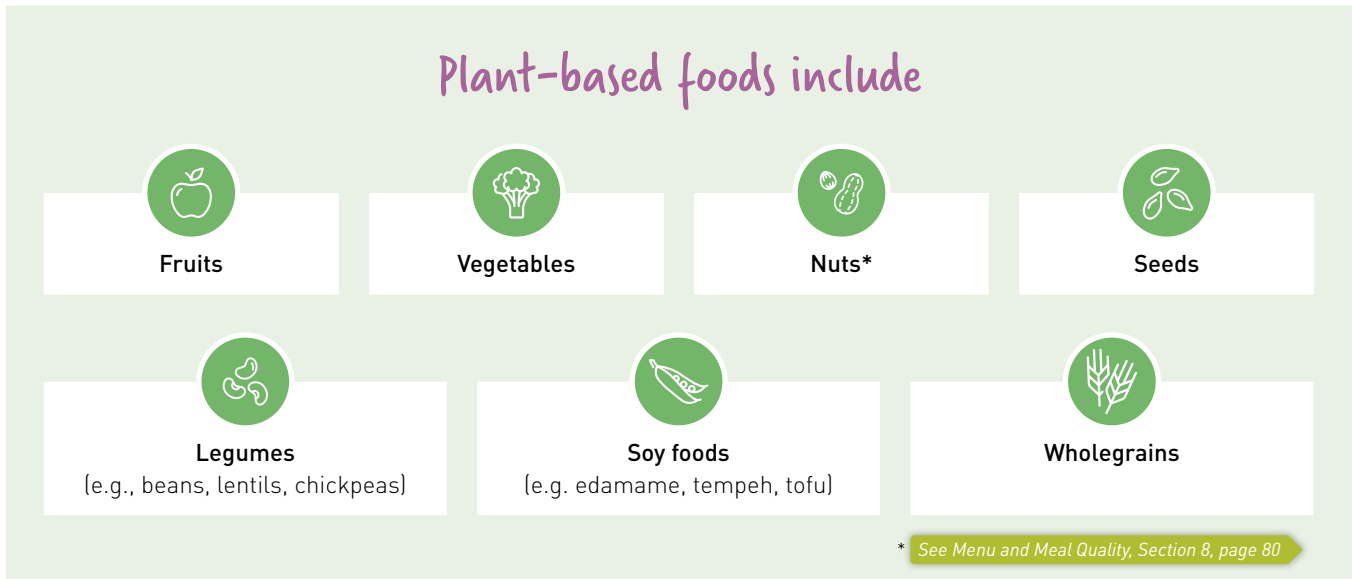




Plant-based foods

Defining plant-based foods

Diets rich in plant-based foods can promote positive human and planetary health outcomes by providing essential nutrients that support wellbeing while having lower environmental impacts.^{3,11}



2

Plant-based and Minimally Processed Foods

Plant-based food and ECEC Services

Research in Australian ECEC services suggests that plant-based foods such as vegetables and legumes are often not included regularly enough on service menus^{12,13} or in lunchboxes brought from home.¹⁴ ECEC services can provide opportunities to increase children's exposure to a variety of plant-based foods and foster curiosity and awareness of these foods across the service.

Key areas for plant-based foods in ECEC are in menu planning, food education, engagement with children and families, and the services policy and procedure document or quality improvement plan. The acceptance of plant-based foods can also be supported through the mealtime environment and feeding practices during mealtimes.

NATIONAL QUALITY STANDARD
QA1, QA2, QA6, QA7

Reflective questions



Service leadership team

- How does our menu planning ensure plant-based foods, like legumes and wholegrains, appear regularly across the menu cycle?
- Does our policy or quality improvement plan clearly define what "minimally processed" means for our service, or is this left to individual interpretation?

Strategies to provide a variety of plant-based foods

The following strategies, together with common considerations, challenges and potential solutions, are designed to support ECEC services to strengthen plant-based food provision through menu planning, food education, and practices that encourage children's acceptance of plant-based foods.

Refer over page for details on challenges/considerations and potential solutions.



Food education

Food based experiences such as children chopping up their own vegetables.

Schedule a food-related excursion, such as a visit to a market or local farm.

Involving children in gardening can encourage acceptance of plant-based food.

[See Food Education, Section 5, page 101](#)

[See Food Education, Section 4, page 93](#)

[See Section 6, page 78](#)

When introducing more legumes to the menu, children can learn about legumes as part of food education – this can include simply talking about the food during the mealtime, or embedding plant-based foods into the curriculum.

Cooking experiences can focus on plant-based foods to increase children's exposure to these foods.



Menu planning

Ensure that plant-based foods are available at every eating occasion.

On days when the main meal served is meat-free, prepare meals with plant-based protein (legumes and beans).

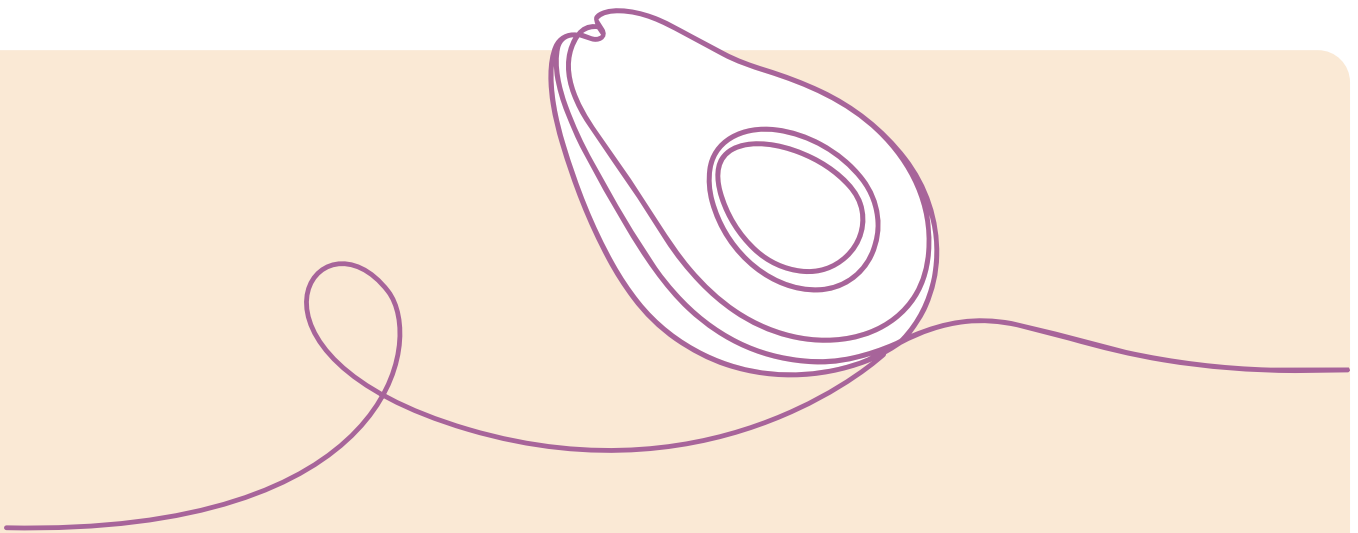
Legumes can be introduced by serving in combination with meat, for example a beef and lentil bolognese.

Plan menus to provide a variety of fruits, vegetables and wholegrains every day – including different types, colours and textures.

Add legumes to dips for morning tea and afternoon tea.

When introducing plant-based protein such as legumes, add familiar flavours and textures along with the legumes to encourage children's acceptance.

Plan morning tea and afternoon tea to contain vegetables, fruits and wholegrains.



Mealtime practices

Educator can model the authentic enjoyment of plant-based food that they like to eat.



Quality improvement plan/policies and procedures

The service policy and procedures and quality improvement plan can ensure an emphasis on plant-based foods, such as fruits and vegetables, on the menu, and throughout the curriculum.

Clear practice statements e.g. 'We serve one meat-free meal per week (rotated across different days) and these meals contain plant-based protein such as legumes/beans'.



Engagement with children and families

Involve children in planning menus with a wide variety of plant-based foods.

When communicating with families about plant-based meals on the menu, simply use the language or name the food e.g., green curry, pumpkin risotto.



Lunchbox services

As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on types of foods that can be included in lunchboxes can be useful.

NATIONAL QUALITY STANDARD
QA1, QA2, QA5, QA6, QA7

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 3: Strategies to provide a variety of plant-based foods in ECEC services^{13,25,27,30,31,34,42}

Strategies	Challenges/considerations	Potential solutions
Food education		
Food based experiences such as children chopping up their own vegetables.	Safety concerns of using knives.	Use child-safe knives.
	Educator-children ratio.	Ensure sufficient supervision and appropriate educator-child ratio during activities requiring child-safe knives.
When introducing more legumes to the menu, children can learn about legumes as part of food education – this can include simply talking about the food during the mealtime, or embedding plant-based foods into the curriculum.	Staff skills, experience and confidence in talking with children about food, delivering Food Education, and cooking activities with children may differ.	The Food Education module outlines a range of educational experiences to support this strategy.
Schedule a food-related excursion, such as a visit to a market or local farm. See Food Education, Section 5, page 101		See Food Education, Section 2, page 25 See Food Education, Section 2, page 63
Cooking experiences can focus on plant-based foods to increase children's exposure to these foods.		
Involving children in gardening can encourage acceptance of plant-based food. See Food Education, Section 4, page 93 See Section 6, page 78	Not all services can provide a garden.	The Gardens Section outlines different sized gardens that services can consider. See Section 6, page 78
Menu planning		
Ensure that plant-based foods are available at every eating occasion.	 For regional/remote services Fresh produce may not always be available.	Dried/tinned legumes/beans can be purchased and are cost effective plant-based additions to menus. Frozen/tinned vegetables can be used in recipes.
Plan menus to provide a variety of fruits, vegetables and wholegrains every day – including different types, colours and textures.	Lack of confidence/skills in preparing plant-based food.	Staff nutrition training and confidence in preparing plant-based food.
Plan morning tea and afternoon tea to contain fruits, vegetables and wholegrains.	Children's taste preferences for plant-based foods.	Repeated exposure (therefore repeated opportunities) can support taste preferences.
On days when the main meal served is meat-free, prepare meals with plant-based protein (legumes and beans).	Concern that plant-based food will be wasted.	Whole-of-service approaches to plant-based foods, which includes increased exposure, mealtime practice, food education and staff family engagement, increases plant-based food intake without increasing food waste.
Add legumes to dips for morning tea and afternoon tea.	Concern about costs.	Plant-based menus, especially using legumes, are cost effective.

Strategies	Challenges/considerations	Potential solutions
Legumes can be introduced by serving in combination with meat, for example a beef and lentil bolognese.	Additional time required for planning and preparing plant-based foods.	Allowing sufficient time for cooks/chefs to plan and prepare plant-based foods. See Menu and Meal Quality, Section 5, page 52
When introducing plant-based protein such as legumes, add familiar flavours and textures along with the legumes to encourage children's acceptance.		
Mealtime practices		
Educator can model the authentic enjoyment of plant-based food that they like to eat.	Educators' food preferences may limit this.	Educators can support food acceptance and preference in young children whilst still honouring their own food preferences. See Mealtime Environment and Practices, Section 3, page 31
Quality improvement plan/policies and procedures		
The service policy and procedures and quality improvement plan can ensure an emphasis on plant-based foods, such as fruits and vegetables, on the menu, and throughout the curriculum.	Policy/procedures may not match ability to source ingredients.	Dried/tinned legumes/beans can be purchased and are cost effective plant-based additions to menus. Frozen/tinned vegetables can be used in recipes.
Clear practice statements e.g. "We serve one meat-free meal per week (rotated across different days) and these meals contain plant-based protein such as legumes/beans".		
Engagement with children and families		
Involve children in planning menus with a wide variety of plant-based foods.		Gather menu feedback from children, educators and families. See Menu and Meal Quality, Section 7, page 76
When communicating with families about plant-based meals on the menu, simply use the language or name the food e.g. green curry, pumpkin risotto.		
Lunchbox services		
As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on types of foods that can be included in lunchboxes can be useful.	Families may not pack plant-based foods in lunchboxes. It is very important not to shame children for lunchbox content. In addition, sending notes back to parents often backfires and is not recommended.	The Staff and Family Engagement module outlines some strategies for useful communication between the service and families. See Staff and Family Engagement, Section 4, page 51

CASE STUDY

Creating lasting change through a Sustainable Food Awareness Week

2

Plant-based and Minimally Processed Foods

SERVICE	Goodstart Endeavour Hills
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, not-for-profit
AGE RANGE	6 weeks to 6 years
NUMBER OF APPROVED PLACES	73
NUMBER OF STAFF	17
REMOTENESS AREA CLASSIFICATION	Major cities

LOCATION

Endeavour Hills, VIC



Background

Goodstart Endeavour Hills participated in a study involving the Deakin University and National Nutrition Foundation's "Sustainable and Nutritious Food Environments in Early Childhood Education and Care: a Toolkit".³⁴ The toolkit was co-designed with the Victorian ECEC sector and informed by the World Health Organization (WHO) and Food and Agriculture Organization (FAO) "Sustainable Healthy Diets Guiding Principles". The toolkit provides practical tips, strategies and links to resources to support services in adapting their everyday practices in line with the guiding principles. Services selected the sustainability practices they wished to implement during a Sustainable Food Awareness Week.

What did you want to do?

The service wanted to focus on two components within the Toolkit:

- Plant-based foods such as fruit and vegetables
- Food waste

As outlined by the Toolkit, they wanted to follow a whole-of-service approach and involve the broader community, such as families and representatives from local schools.

What support did you have?

Support included:

- The Toolkit resource that was sent to them.
- Online access to the "Achievement Program" resources to guide the appropriate amounts of food to serve to children.

What did you do?

Creating a shared vision

The service:

- Worked with staff and children to develop a shared vision for Sustainable Food Awareness Week.
- Coordinated communication with families.

Changes in the kitchen, food provision and waste management

- The service prepared meals using the menu planning guidance amounts but began by serving food in smaller serving bowls.
 - The first serving bowl contained an amount based on staff observations of how much children typically ate and was provided for children to self-serve.
 - A second serving bowl was kept covered and maintained in accordance with food safety and hygiene requirements and made available for children who wanted second helpings.
 - Any remaining food could then be offered to staff, or families who needed an extra meal. In particular, when a family was going through a difficult time or had a sick child at home, leftover food that had been stored and handled in accordance with food safety and hygiene requirements was offered to the family.
- Morning tea and afternoon tea offerings focused on plant-based foods, including a variety of fruits and vegetables.

Mealtime practices supporting child autonomy

- Educators encouraged children to serve themselves an amount they felt they would eat, reassuring them that they could always return for second or third helpings if they were still hungry.
 - Educators checked in with children throughout the meal to support them in recognising their hunger and 'had enough' cues.
- Children were involved in preparing morning and afternoon tea by cutting fruit and vegetables.
- Educators encouraged conversations about the colours, textures and characteristics of the foods being prepared.
- Children were able to self-serve their fruit and vegetables at morning tea and afternoon tea, with additional servings kept covered and available for a period of time in accordance with food safety and hygiene practices.

Child agency and family involvement – meals provided

During the Sustainable Food Awareness Week:

- The service displayed the daily menu alongside pictures of the ingredients and a QR code linking to the recipe.
- Children were invited to add stickers to indicate whether they enjoyed the meal, providing valuable feedback to the cook.
- Families could access the recipes to prepare the meals at home, helping to extend children's food experiences beyond the service.

Food education and mealtime conversations

- Children were engaged in learning about plant-based foods such as fruit and vegetables and where they come from through:
 - Hands-on educational experiences.
 - Conversations while preparing and exploring fruits and vegetables.
- Children were also involved in measuring the amount of plate waste (food scraps) and discussing ways to reduce it.
 - In addition, they removed citrus from food scraps to be able to add the food scraps to the worm farm.
- Through mealtime conversations and the mealtime practices implemented during Sustainable Food Awareness Week:
 - Children recognised that taking only what they needed helped to reduce food waste.
 - Many children expressed pride in listening to their hunger and 'had enough' cues while being mindful of food waste.

Sustainability practices embedded into the information evening

The service's information evening was attended by families and representatives from local schools. During the evening the service:

- Shared information about Sustainable Food Awareness Week.
- Discussed the sustainable food practices they had implemented.
- Shared the Toolkit that supported Sustainable Food Awareness Week.

Families and community members responded positively to the information shared and the service's commitment to sustainability.

Beyond Sustainable Food Awareness Week, which practices became embedded into daily practice?

- Smaller initial servings with opportunities for additional helpings became embedded into mealtime practices.
- Safe management and repurposing of leftover food became part of everyday operations.
- Reduced food waste practices were maintained.
- Child agency in deciding how much to eat and responding to hunger and 'had enough' cues remained a key mealtime practice.
- Food education and sustainability-focused learning experiences continued to be embedded within the curriculum.

The difference it has made

- By improving their food provision and food waste practices, they were able to manage the service's food budget without compromising food quality.
- Food waste was reduced at both the serving and plate waste levels.
- Children developed a greater awareness of environmental sustainability of food, including the importance of reducing and managing food waste.

Top tips

- Start with a shared vision and involve children, educators and cooks from the beginning.
- Focus on being gentle and kind to the environment through everyday sustainable food practices.
- Honour and encourage children's agency and decision-making throughout the process.
- When making changes to sustainability practices, an intensive Awareness Week can be a powerful catalyst for lasting change.
- Small, low-cost changes to everyday practices can make a big difference to sustainability outcomes, including reducing food waste and supporting food budgets.

Prioritise minimally processed foods

Defining food processing and highly processed foods

Sustainable nutritious diets are based on whole, unprocessed or minimally processed foods and limit highly processed foods and drinks.³ Some food processing can play a beneficial role in high-quality diets, making food available, and in some situations safer. However, some forms of processing can lead to high amounts of salt, added sugar, saturated fats, and can undermine diet quality when consumed in high amounts.⁸ Highly processed foods can also negatively affect planetary health through higher greenhouse gas emissions, greater energy use, and increased packaging and waste.^{9,10}

Prioritising minimally processed foods in ECEC services

As part of supporting children's nutritional intake, ECEC services can increase children's exposure to whole, minimally processed foods while reducing their exposure to highly processed foods. This can include building awareness of food processing through a whole-of-service approach. Reducing exposure to highly processed foods and supporting consumption of minimally processed foods is related to meal planning, procurement, quality improvement and food education.^{3,31} Highly processed foods are often discretionary food, which is not recommended to be served in ECEC services.

Food processing

Food processing changes foods from their natural state to make them safer, easier to store, more convenient to eat, or to improve texture or taste properties. Many foods are processed in some way before we eat them. Common examples include washing and cutting vegetables, freezing fruit, pasteurising milk, milling grains, and canning beans. While many processed foods can be part of a nutritious diet, many processed foods contain higher amounts of added sugars, salt, and saturated fat.

The term ultra-processed food (UPF) is increasingly used in nutrition and public health research. While there is no single agreed definition of UPF, they are generally considered to be foods that are commercially produced using industrial processing techniques and ingredients and additives not commonly used in home cooking. Many packaged food and drink items marketed towards young children in Australia are classified as UPF³⁵, however, there are ongoing discussions and research about how UPFs are defined and classified, which can limit the usefulness of the term.

Foods classified as UPFs are not all nutritionally equivalent. For example, some commercial breads may be classified as UPF due to the use of preservatives to increase their shelf life, yet they are included in the Australian Dietary Guidelines, fortified with important nutrients, and are a staple food in many Australians' diets. This highlights an important nuance, and this guide therefore focuses on ways to increase the use of minimally processed foods to increase the amount of nutritious and environmentally sustainable food being provided in ECEC settings.

What knowledge and training do ECEC staff need for prioritising minimally processed foods and limiting highly processed food?

- Cook training in meal planning and preparation – that includes skills in the preparation of meals containing whole food ingredients. This should include training that supports minimally processed morning tea and afternoon tea ideas.
- Service leader knowledge on clear supportive policy to support minimally processed food, and considers the service's position on fundraising and celebrations.
- Knowledge and training on cultural sensitivity and awareness of where food insecurity may influence lunchbox contents.

NATIONAL QUALITY STANDARD
QA2, QA7

What is minimally processed food?

Minimally processed foods are whole foods from the five food groups – fruits, vegetables, whole grains, meat/meat alternatives, and minimally processed dairy products or products that you can generally find in a kitchen. These can include:



Fresh fruit and vegetables



Eggs



Fresh and frozen meat, poultry, fish



Pasteurised milk and plain yoghurt



Wholegrains – oats, brown rice



Beans, lentils, chickpeas

What is processed food?

Whilst minimally processed foods should be prioritised, many foods are processed to improve their safety or shelf life. These foods can still be part of a nutritious diet. These can include:



Tinned vegetables and beans



Tinned fruit



Tinned fish



Cheese (traditional)



Tofu



Flour



Tomato paste



Vegetable oils e.g., olive oil

Highly processed food that should not be offered in ECEC



Soft drinks and sugary beverages



Commercial biscuits or cakes



Highly processed meats or meat alternatives such as hot dogs/sausages, commercially made chicken/plant-based nuggets and processed lunch meats or meat alternatives



Sweets/lollies



Instant noodles/instant soups



Commercial baby biscuits, puffs, melt-in-the-mouth snacks

Strategies for prioritising minimally processed foods and limiting highly processed foods

The following strategies, together with common challenges and potential solutions, are designed to support your service to prioritise minimally processed foods while limiting highly processed foods.

Refer over page for details on challenges/considerations and potential solutions.



Menu planning

Prioritise minimally processed foods when planning menus. Use whole foods from the five food groups.

Consider morning tea and afternoon tea as “mini meals” and therefore opportunities for additional servings of food from the five food groups. It is often at these meal opportunities that highly processed foods are served in ECEC.

Breakfast – in many services breakfast is available but not prepared or planned by the cook/chef. In some services this may lead to the use of highly processed cereals. In services that opt for breakfast cereals, look for minimally processed cereals with a short ingredient list e.g., oats, wheat biscuits, unsweetened shredded wheat, muesli.



Quality improvement plan/policies and procedures

A clear, detailed, actionable policy/procedure statement on level of processing in meals can support the provision of minimally processed food.

Clear statements on celebration food or fundraising food can support reduction of highly processed food in the service.



Lunchbox services

As parents provide lunchboxes, it is not the service's responsibility, however some guidance/ideas on type of foods that can be included in lunchboxes can be useful.



NATIONAL QUALITY STANDARD
QA2, QA6, QA7

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 4: Strategies for prioritising minimally processed foods and limiting highly processed foods^{16,31}

Strategies	Challenges/considerations	Potential solutions
Menu planning		
Prioritise minimally processed foods when planning menus. Use whole foods from the five food groups.	Skills required for preparing meals from scratch.	Meals containing whole foods instead of highly processed options can include easy to prepare recipes such as stews and soups. Cooks completing training in meal planning and preparation can support the skills required to prepare meals from wholefood ingredients. <i>See Menu and Meal Quality, Section 5, page 50</i>
	Additional time required for preparing meals using whole foods.	Provide extra time for menu and meal planning. <i>See Menu and Meal Quality, Section 5, page 50</i> Batch cooking and freezing foods (with food safety measures in place) can save on time.
Consider morning tea and afternoon tea as “mini meals” and therefore opportunities for additional servings of food from the five food groups. It is often at these meal opportunities that highly processed foods are served in ECEC.	Time allocated to cooks for preparing morning tea and afternoon tea may be limited.	Easy-to-prepare options, such as fruits, vegetables sticks, dips, yoghurt or wholegrain toasts with avocado, hummus, and/or cheese are options that are quick to prepare but does not rely on highly processed, packaged foods. Adapt morning and afternoon tea to increase foods from the five food groups. <i>See Menu and Meal Quality, Section 6, page 55</i>
Breakfast – in many services breakfast is available but not prepared or planned by the cook/chef. In some services this may lead to the use of highly processed cereals. In services that opt for breakfast cereals, look for minimally processed cereals with a short ingredient list e.g., oats, wheat biscuits, unsweetened shredded wheat, muesli.	Limited time – especially if educators are caring for children at breakfast time and needing to prepare breakfast.	Quick and easy to prepare options such as whole grain toast with hummus, cheese, boiled eggs, pre-made frittata, yoghurt and muesli, oats, or minimally processed cereals can ensure that breakfasts not planned or prepared by cook can still be nutritious and minimally processed.

Strategies	Challenges/considerations	Potential solutions
	⚠ For regional/remote services Access may be a major issue, particularly in remote areas where there may be lower access to fresh, whole foods and a higher reliance on highly processed and packaged foods due to shelf stability.	Preserving food when they are available/in season. Education of kitchen staff and children (and families) into self-sufficiency is beneficial for remote communities and adds to improved health outcomes rather than overreliance on high processed food. A view of “whose job/everyone’s job” to preserve and store food can also help to avoid cook/chef burnout.
	Space can be an issue – e.g. freezer space.	Options for whole foods can include frozen or tinned versions.
	Inconsistency of supply for example order certain foods and they are not delivered.	Develop flexible menus that can be adapted. Coordination with food suppliers may be needed.
Quality improvement plan/policies and procedures		
A clear, detailed, actionable policy/procedure statement on level of processing in meals can support the provision of minimally processed food.		
Clear statements on celebration food or fundraising food can support reduction of highly processed food in the service.		
Lunchbox services		
As parents provide lunchboxes, it is not the service’s responsibility, however some guidance/ideas on type of foods that can be included in lunchboxes can be useful.	It may also be that a child from a food insecure home or family situation that limits preparation of fresh food could have higher amounts of highly processed/packaged food in their lunch box and it is important not to shame these children or their families.	The Staff and Family Engagement module outlines some strategies of useful communication between the service and families around lunchboxes.
	It is very important not to shame children for lunchbox content. In addition, sending notes back to parents is not recommended.	See Staff and Family Engagement, Section 4, page 51
	Some children may have a strong need for consistency and familiarity with foods due to individual sensory needs, neurodivergence or other feeding considerations. For these children, processed or packaged foods may play an important role in providing predictable and familiar food options.	The Mealtime Environment and Practice module outlines what an inclusive approach to mealtimes look like in practice, including responding to individual sensory needs. See Mealtime Environment and Practices, Setting the scene, page 12

SECTION 3

Greenhouse Gas Emissions, Biodiversity and Food Packaging



Greenhouse gas emissions, biodiversity and food packaging

This section groups three of the environmental impacts of the guiding principles together – greenhouse gas emissions and biodiversity.

Defining the principles

Greenhouse gas emissions

About a third of global greenhouse gas emissions are linked to food.²⁰ Greenhouse gas emissions can be attributed to the types of foods (e.g. fruits and vegetables and plant foods produce the lowest greenhouse gas emissions), but also to the processing, food transport (food miles) and food waste practices.²¹ Therefore, multiple principles discussed in the SFP module are related to reducing greenhouse gas emissions. For example, lowering highly processed, packaged products and reducing food waste can have significant impacts on reducing greenhouse gas emissions.²¹

Many of the principles in this SFP module contribute to reducing greenhouse gas emissions. Rather than addressing greenhouse gas emissions as a separate principle, these strategies are embedded throughout the module.

Biodiversity

The guiding principles refer to preserving biodiversity, which includes biodiversity of crops, livestock and aquatic resources, with consideration of choosing foods that are not derived from overfishing or overhunting.³

Biodiversity in ECEC services

In the ECEC context, supporting biodiversity applies to meal planning, food procurement and food education.

Reflective questions



Service leadership team

- *How do we weigh environmental factors, such as food miles, packaging and biodiversity in purchasing decisions? When cost, convenience and environmental impact conflict, how do we decide what takes priority?*

Strategies to support biodiversity

The following strategies, together with common challenges and potential solutions, are designed to support biodiversity in ECEC services.

Refer overpage for details on challenges/considerations and potential solutions.



Menu planning

Focus on whole cuts of meat, poultry and fish in place of highly processed meats (e.g., sausages, nuggets, deli meats).

Where possible, plan diverse menus where fruits, vegetables, grains and legumes are rotated – this can support diverse farming systems.

When making slices or muffins, recipes can be adapted by adding chia seeds, sunflower seeds, Greek yoghurt, wheat germ, oatmeal, grated or mashed vegetables or fruits. This can add nutritional bulk and variety.



Food procurement

Focus on purchasing seasonal produce where available.

For fish, it is preferable to serve fish with a sustainability certification on the label such as the blue fish tick logo certified by the Marine Stewardship Council or the Aquaculture Stewardship Council (ASC) label for responsibly farmed seafood. In addition to a variety of suppliers, seafood with these labels are available in some supermarkets in Australia for services that are limited to supermarket purchasing.



Food education

Garden projects and understanding different species of plant and animals can increase children's understanding of biodiversity.

Children's activities/experiences/learning activities can involve understanding where food comes from, gardening projects, stories and games about growing, seasons and caring for living things.



EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA3

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 5: Strategies to support biodiversity and reduce antibiotic use^{3,21,36-38}

Strategies	Challenges/considerations	Potential solutions
Meal planning		
Focus on whole cuts of meat, poultry and fish in place of highly processed meats (e.g., sausages, nuggets, deli meats).	Higher costs of whole cuts of meats and whole foods in certain circumstances.	Add legumes to good quality meat to reduce costs and reliance on animal products for protein – e.g. instead of using 2kg of mince for a bolognese sauce, substitute half of the meat with 4 cans of brown lentils, or 2 cups of dry lentils (washed and checked for debris). Opt for more affordable cuts of good quality meat (for example chicken thigh over chicken breast or good quality meat cuts suitable for slow cooking) to save on costs.
Plan diverse menus where fruits, vegetables, grains and legumes are rotated – this can support diverse farming systems.	Skills and time required for preparing meals from scratch.	Meals containing whole foods instead of highly processed options can include easy to prepare recipes such as stews and soups. Batch cooking and freezing foods (with food safety measures in place) can save on time – e.g. lasagna or other bakes. Cook training in meal planning and preparation. The MMQ module supports planning menus from a variety of food sources. <i>See Menu and Meal Quality, Section 5, page 50</i>
		⚠ For regional/remote services Due to limited availability/access issues there may be less choice for planning diverse, varied menus, especially with regards to fresh produce. Buy produce when it is in season and abundant, then preserve any excess by freezing or making preserves.
		When making slices or muffins, recipes can be adapted by adding chia seeds, sunflower seeds, greek yoghurt, wheat germ, oatmeal, grated or mashed vegetables or fruits. This can add nutritional bulk and variety.

Strategies	Challenges/considerations	Potential solutions
Food procurement		
Focus on purchasing seasonal produce where available.	Limited availability in regional/remote areas.	Maintaining a store of options for whole foods, like frozen or tinned fruits and vegetables, is a feasible strategy to diversify menus. See Section 5, page 68
For fish, it is preferable to serve fish with a sustainability certification on the label such as the blue fish tick logo certified by the Marine Stewardship Council or the Aquaculture Stewardship Council (ASC) label for responsibly farmed seafood. In addition to a variety of suppliers, seafood with these labels is available in some supermarkets in Australia for services that are limited to supermarket purchasing.	Availability – these products may not be available in all areas. Existing food procurement contracts, for example only purchasing from one supermarket may limit the types of products that can be purchased.	Some products in major supermarkets can be sustainably sourced.
Food education		
Garden projects and understanding different species of plant and animals can increase children's understanding of biodiversity.	Limited space for a garden.	See Section 6, page 78 © See Case study, page 106 of Food Education
	Consider risks when planning gardening projects.	See Section 6, page 84
Children's activities/experiences/learning activities can involve understanding where food comes from, gardening projects, stories and games about growing, seasons and caring for living things.		See Food Education, Section 3, page 63

Food packaging – minimising plastics

Defining the principle

Minimising the use of plastics and derivatives in food packaging is an important principle, as these can place higher demands on natural resources.^{3,23}

Principle and ECEC services

In ECEC, minimising plastic food packaging relates to food purchasing strategies and can be embedded into Food Education or centre policy and procedures or quality improvement plan. Choosing food without packaging or biodegradable/recyclable packaging can reduce plastic waste entering landfill and, in some cases, may also be cheaper.

Strategies to reduce plastic packaging

The following strategies, together with common considerations, challenges and potential solutions, are designed to support your service with choosing food with minimal or no plastic packaging.

Refer overpage for details on challenges/considerations and potential solutions.



Food procurement

Where possible, purchase food in bulk to reduce packaging – this can also reduce food costs.

Request minimal packaging when ordering online from a supermarket.

Where possible, opt for wholesale produce packaged in boxes.

Purchasing meat from a butcher can reduce food packaging.

When purchasing from supermarkets, opt out of plastic bags for vegetables and fruit.



Food education

Explore where food comes from and how it is packaged, how some packaging can help protect food and reduce spoilage. Compare different types of packaging and learn about reusing/recycling.

Where plastic packaging is unavoidable e.g. strawberry punnets – recycle packaging for learning activities.

Recycle locally if available.

Explore together with the children different ways to store/carry food. Look at plastic alternatives for packaging.

EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA3

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 6: Strategies to reduce plastic packaging in ECEC^{31,34}

Strategies	Challenges/considerations	Potential solutions
Food procurement		
Where possible, purchase food in bulk to reduce packaging – this can also reduce food costs.	Storage space	Use stackable containers with clear labelling to maximise available space. Focus on high use or shelf stable items for bulk purchasing (e.g., legumes, rice, oats, tinned food). Training/support can include support on safely handling bulk food purchases.
	 For regional/remote services Power supply issues may make it risky to buy bulk cold/frozen items.	Develop contingency plans for power interruptions, including consideration of backup power sources (e.g. generators) where appropriate. Monitor freezer temperatures and follow food safety guidance after outages.
Where possible, opt for wholesale produce packaged in boxes.	 For regional/remote services Supplier availability may limit packaging reduction options.	
When purchasing from supermarkets, opt out of plastic bags for vegetables and fruit.		
Request minimal packaging when ordering online from a supermarket.		
Purchasing meat from a butcher can reduce food packaging.		
Food education		
Explore where food comes from and how it is packaged, how some packaging can help protect food and reduce spoilage. Compare different types of packaging and learn about reusing/recycling.		
Where plastic packaging is unavoidable e.g. strawberry punnets – recycle packaging for learning activities.		
Recycle locally if available.		
Explore together with the children different ways to store/carry food. Look at plastic alternatives for packaging.	Plastic wrap may be commonly used to protect prepared foods and items in fridges.	Plastic alternatives for packaging can include compostable vegetable bags, silicone wraps, vegan wraps as an alternative to beeswax wraps, recyclable containers and serving dishes. In the tropics in Australia, banana leaves make wonderful food covers. Sturdy reusable containers in a range of sizes with lids can be used instead of plastic wrap.

CASE STUDY

In the food forest...

A space for learning about sustainable food choices and a love of Boodja (Country)

SERVICE	Nature's Atelier
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	Mixed model – morning and afternoon tea provided on-site, lunch provided from home
BUSINESS MODEL	Private, for-profit
AGE RANGE	6 months to 5 years (up to 12 years with the OSHC service)
NUMBER OF APPROVED PLACES	100
NUMBER OF STAFF	45
REMOTENESS AREA CLASSIFICATION	Inner regional

LOCATION

Vasse, WA



Background

Nature's Atelier is located in Vasse in WA's Southwest region. It is a long day care centre with a philosophy based on Nature Play, the Reggio Emilia and Pickler approaches, which provides a rich learning environment for the children who attend.

As the centre is located on 16 hectares of land, there is ample space for growing fruits and vegetables at the service. This has led to the creation of the centre's Food Forest, and harvests are plentiful enough to supply some of the fresh produce to feed the children. They hope that in the future they will be able to expand the Food Forest and be able to provide all produce on-site for the centre.

What did you want to do?

To empower children to be sustainability leaders:

- They wanted to be able to connect them to the environment through practices embedded into the daily flow of the service.
- To show children the lifecycles of plants and animals.
- To teach children about where food comes from, seasonality, when food is ripe and about the abundance and variety of foods available.
- To give children a natural sensory experience.
- To build an understanding in children of respect for plants and nature.

What did you do?

- Nature play and connection to Boodja (Country) have always been a big part of the philosophy at Nature's Atelier.
- This includes the native landscape, and intentional food gardens.
- They started small with a small patch of garden.
- In 2019 they established a bigger garden with raised beds.
- In 2021, for their annual community celebration, they planted the first seeds of the Food Forest, along with the childcare community. This has been part of the rehabilitation of the whole area.

How did you go about starting the Food Forest?

- They consulted a permaculturalist who provided:
 - A guide on what and when to plant, according to the Noongar seasons.
 - A plan to gradually rehabilitate the soil using continual cover crops.
- Children chose what to plant according to this guide.
- Children were also involved in starting seedlings from seeds.
- They have now employed a full-time gardener who looks after the Food Forest and gardens. The gardener also spends part of the week mentoring the children on looking after the food forest and 'children's garden', where children can plant and tend their own vegetables and herbs.
- The centre chefs liaise with the gardener to help decide what to plant, or adapt recipes according to what is in season.

The difference it has made

The Food Forest has provided a rich learning environment for a myriad of experiences:

- Sensory.
- Physical play.
- Growing food.
- Harvesting food.
- Respecting nature.
- Learning about lifecycles and how everything is connected.
- This includes the lifecycle of their food scraps when making compost.
- By composting both the paper towels and food scraps we are also able to greatly reduce the centre's landfill contribution.
- Learning about the abundance and variety of foods available.
- Children are able to identify a range of fruits and vegetables.
- Children learn respect for living things.
- Children develop a growing understanding of their connection to the world around them, with caring for Boodja at the heart of activities.
- The connection with living things is very calming and regulating for the children, and the Food Forest gives them space to experience this.
- The Food Forest also gives children opportunities to show they are competent and capable.

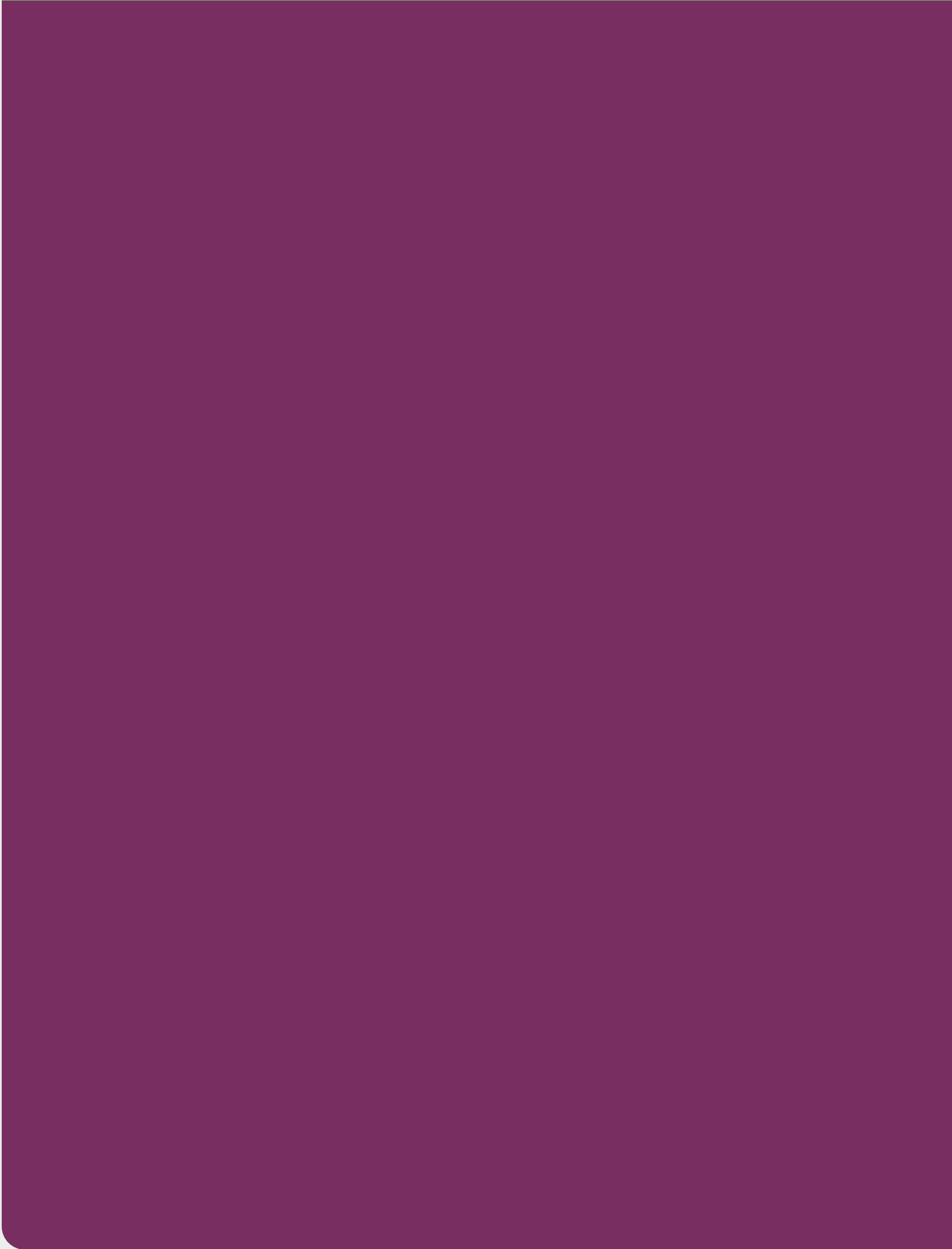
Top tips

- Before you start a garden at your service, have a deep understanding of:
 - Why you are adding this space into your service.
 - What impacts it will have on child development.
 - What impact it will have on helping them to become responsible members of the community.
- Consult with experienced people who can help you make it a success.
- Have lots of staff and parent involvement to establish and maintain the addition to your centre.
- Address common "barriers" with creative solutions. For example, we found that children were disrupting the growth of plants by digging around them. Solution: We addressed the issue by providing an intentional "digging" patch so the children could explore digging without hurting the new plants.
- "Have passionate people to push it forward and keep it on track".
 - Having a staff member or a family member at the centre who can be a mentor in the space will make it much more successful.
- A Food Forest needs maintenance – make sure you are set up well to care for it over a long period of time.
- Building your own Food Forest and gardens doesn't have to cost a lot. To save some money you can:
 - Plant directly into the ground.
 - Build garden beds from recycled materials.
 - Source cheap/free materials from families, second-hand stores, online community marketplaces and/or "tip shops".
 - Create your own compost to fertilise the soil.
 - Grow from seed rather than seedlings.
 - This also provides a richer learning experience for the children as they are able to see the whole lifecycle of the plants.
- Harvest seeds to save for the next season.
- Vegetables grow faster than fruit trees, so this is a good place to start.
- Grants can help with costs.
- Embed the Food Forest, its maintenance, activities, etc into your programs to ensure it has real meaning for the staff and children.
- It doesn't have to be complicated – start with things that staff are comfortable with and are achievable, and build up over time.

What Nature's Atelier mainly hopes to achieve with the Food Forest, as well as other initiatives in the centre, is to:

- Reduce harm to the environment while actively working to improve it.
- Provide rich learning experiences for children.
- Help children understand what it takes to grow food and think about their own patterns of consumption.
- Help children learn about connection to and respect for the land.

These are all things the staff model for children through the experiences provided at Nature's Atelier. They hope that the centre can provide children with skills and knowledge that they can take through their lives and become the environmental stewards our planet needs.



SECTION 4

Food Waste



Reducing and managing food waste in ECEC settings

Defining the food waste principle

Food waste can be defined as food that is removed from the human supply chain, ending in either landfill, sewers, compost, or land application.³⁹ Food waste incorporates edible parts of food and inedible parts e.g., bones, pits. Food waste can occur at various stages of the food system including production, processing, distribution, retail, and consumption. This section is focused on the retail and consumption level. The sustainable development goals and Australia's national food waste strategy aim to halve food waste at retail and consumer levels by 2030.^{24,40}

Food waste and ECEC Services

As outlined in MMQ (Section 2) ECEC services provide at least 50 per cent of children's daily requirements across the meals offered. Combined with the high proportion of Australian children enrolled in ECEC, this means the sector has the potential to impact food waste at a substantial scale. It is estimated that a service catering for 200 children typically produces around 1.7 tonnes of food waste annually and this can be halved by implementing food waste reduction strategies.²⁸

In the ECEC setting are two key elements to reducing the environmental impact of food waste:

1. Reducing the amount of food wasted and
2. Managing food waste to reduce its environmental impact (e.g., composting/worm farms).^{24,26,31}

In the ECEC context where food is provided onsite, there are four types of food waste categories:

- **Inedible waste (bones, apple cores etc)** – this is largely unavoidable.
- **Kitchen waste** – food that was purchased and not yet prepared but has gone out of date, or wasted during the preparation of meals, for example potato peels.
- **Serving waste** – food that was prepared but never plated.
- **Plate waste** – food that was plated but not eaten.

Food waste in lunchbox services

In lunchbox services, plate waste (food that remains uneaten in children's lunchboxes) is likely to be the main type of food waste. Depending on lunchbox contents, packaging waste from lunchbox items may also contribute to the overall waste generated.

Inedible food waste

Although waste from inedible parts of food (e.g. banana peels, eggshells, watermelon rind) is largely unavoidable, strategies can help minimise avoidable food waste during preparation, serving and children's meals in ECEC settings.

A whole-of-service approach to food waste

Food waste reduction/management is most successful when it is embedded as a whole-of-service approach.³¹ Collaboration between service leaders, educators, cooks, and families helps create a shared culture of sustainability and supports long term behaviour change. While specific responsibilities may vary across roles, all staff, children and families have an important part to play in reducing food waste.

NATIONAL QUALITY STANDARD
QA3, QA7

Reflective questions



Service leadership team

- *What systems do we have for communicating between educators and the kitchen about attendance numbers, food experiences or changes that affect how much food is needed?*
- *How do we monitor whether food and drink offered across the day meets children's needs, without over or under catering? What signals tell us when this balance is off, and how quickly do we act on them?*

Educators

- *How do we involve children in reducing food waste during mealtimes? What do we notice about their understanding of why it matters?*
- *How do we balance reducing plate waste with respecting children's autonomy and their own "had enough" cues?*

Reducing the amount of food wasted in ECEC services

Understand how much food is wasted

Understanding how much food is being wasted on which day and at which meal in the service can be a key first step to understanding where changes need to be made.

When doing a food waste review often services only focus on plate waste (the food that was served to children but not eaten), however serving waste (the food that was prepared and never served to children) can constitute a higher percentage of the total food waste in the service²⁷, so it is important to consider both when reviewing food waste. In addition, monitoring kitchen waste, for example, keeping a record of kitchen waste (the food that was purchased but went out of date) can be useful.^{26,28}

Match strategies to where food waste occurs

Once you have identified where food waste occurs, use the table below to help prioritise the strategies that are likely to have the greatest impact. Further information on each strategy is provided later in this section.

If food waste is mainly...	Consider focusing on...
Avoidable kitchen waste (waste beyond inedible food such as eggshells and watermelon rinds)	- Storage approaches - Menu planning - Meal preparation strategies
Serving waste (food that was prepared and never plated)	- Effective communication - Menu and meal planning - Repurposing unused (untouched) food and leftovers
Plate waste (plated for children and not eaten)	- Menu and meal planning - Effective Communication - Involving children in menu planning and food waste discussions - Mealtime practices

It is important to note that whilst children's food preferences are still developing, it is reasonable to expect that some plate waste will occur, some days more than others.

Knowledge and training for food waste reduction and management

Building staff capability in food waste reduction and management can support more sustainable practices, reduce unnecessary food waste and contribute to cost savings for the service. The following knowledge areas and skills can help build staff knowledge, skills and confidence.

Cook/chef

- Being able to plan standard recipes.
- Follow food safety protocols.
- Manage multiple dietary requirements.
- Recipe modification.
- Pantry and fridge management.

Training could include:

- Planning and preparing the right amount of food.
- Commercial food principles.
- Food safety training.
- How to set up systems to reduce and manage food waste.

Educator

- Knowledge, understanding and implementation of responsive feeding practices – responding to children's hunger and 'had enough' cues.
See Mealtime Environment and Practices, Section 2, page 20
- Effective communication with the kitchen about children's attendance, menu feedback, food experiences, and how meals are served. *See Menu and Meal Quality, Section 7, page 76*

Service leader

- Food waste management and reduction strategies in the service can become part of a service's procedures and quality improvement plan.
- Facilitating team communication through regular meetings and setting up systems for cook-educator food communication.

NATIONAL QUALITY STANDARD
QA7

Strategies for reducing food waste

The following strategies, together with common considerations, challenges and potential solutions, are designed to support food waste reduction in your service.

Refer overpage for details on challenges/considerations and potential solutions.



Effective communication

A key cause for serving waste (food prepared but not plated) is a lack of chef/cook being informed about the number of children in attendance on the day. Having a system in place (e.g., notifying the chef by a certain time (e.g., 8:30 am) of the number of children in each room) can ensure that the cook prepares the right amount of food.

Educators should also notify the cook if children have participated in cooking experiences, celebrations, or special food events during the day. These activities can significantly affect children's appetite and the amount of food required, helping to further reduce serving waste.

Ask for family input to find out what children enjoy eating at home and include some of these meals in the menu.



Menu planning

Careful menu planning, considering serving sizes for children can ensure that sufficient food is prepared for the children without preparing too much food.

Develop flexible menus that can be adapted to incorporate ingredients nearing their best-before or use-by date, while maintaining food safety requirements.

When new foods are introduced to children, introduce them in smaller quantities alongside familiar foods.

Check products in the pantry before menu planning and purchasing. Making careful choices in meal planning can avoid "out of date" scenarios.

Include a designated section on displayed menus (as required by regulations) to allow for minor menu modifications based on ingredient use-by dates. This can support greater flexibility while maintaining compliance.

Untouched leftover food can be given to staff or families. In some services this practice is done as a community building practice.



Meal preparation

Be mindful when preparing produce, to only waste what is absolutely necessary. For example, when preparing strawberries only remove the green part rather than cutting a portion of the strawberry.

Present food attractively (e.g., small quiches or cutting of fruit instead of whole fruit) to make it more appealing for children which may lead to less waste.



Storage approaches

Ensure correct storage of items. For example, freeze extra supplies of bread, keep herbs fresh by storing them in water, line airtight containers containing pre-cut vegetables or berries with paper towels.

Regional/remote services: Maintain frozen food supplies to reduce spoilage and improve menu flexibility.



Mealtime practices

It is important to note that children are still developing their taste preferences, and their appetite differs across days. Therefore, in the ECEC setting it is reasonable to expect that there will be plate waste, some days more than others. It is very important that children's autonomy and hunger and 'had enough' cues are being respected. Therefore, it is important not to ask children to finish their plates to save on food waste.

Creating a calm, unhurried mealtime environment supports children to recognise and respond to their hunger and 'had enough' cues and may also reduce plate waste by allowing children enough time to finish eating if they choose.

Family-style serving of meals where children can serve themselves what they think they will eat, can reduce plate waste.

Encourage children to take smaller portions and then come back for seconds or thirds if they are still hungry.

Pour small amounts of milk from a jug that children can top up to save on milk waste.



Repurposing unused food or leftovers

Rice, pasta and quinoa can be used in soups, salads and bakes.

Unused fruits and vegetables can be used to make baby purees, stock, muffins or dips.

Unused herbs can be used to flavour different dishes or make pesto.

Leftover cooked vegetables, grains, or herbs can be incorporated into soups, bakes or dips.

Leftover yoghurt can be used for smoothies/icy poles or 2-ingredient pizza dough.

Vegetables like cauliflower, broccoli and cabbage, with waste from the stems, can be used to make stock cubes. To do this, add garlic and herbs to vegetable leftovers, cook, blend and freeze in a shallow pan lined with parchment paper. Cut into cubes and store in an airtight container in the freezer for up to 3 months.

Some shop bought vegetables can be regrown once the tops have been cut and the base replanted e.g., spring onions, celery, herbs.

Milk that is about to go out of date can be used to make custard or white sauce for pasta dishes.



Child involvement

Involve children when planning meals at the service.

Involve children in reflecting on food waste by discussing which foods they enjoyed, and which foods were left uneaten. Discuss ways that similar foods can be prepared to ensure repeated exposure whilst children's taste preferences are developing. This information can help inform future menu planning while promoting children's agency and participation.



Lunchbox services

Encourage parents to pack enough food for their child but in appropriate child sized portions.

Encourage parents to involve children in lunchbox planning and packing.

Provide a fridge to store food appropriately or encourage lunchboxes to be packed with appropriate cold storage to last throughout the day.

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 2, Outcome 3,
Outcome 4, Outcome 5

NATIONAL QUALITY STANDARD
QA1, QA6

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 7: *Strategies for reducing food waste*^{26,28,31,42}

Strategies	Challenges/considerations	Potential solutions
Effective communication		
A key cause for serving waste (food prepared but not plated) is a lack of chef/cook being informed about the number of children in attendance on the day. Having a system in place (e.g., notifying the chef by a certain time (e.g., 8:30 am) of the number of children in each room) can ensure that the cook prepares the right amount of food.	Limited communication between educators and kitchen.	Service leader-supported systems in place for effective/streamlined cross-team collaboration and whole of service approach to sustainability.
Educators should also notify the cook if children have participated in cooking experiences, celebrations, or special food events during the day. These activities can significantly affect children's appetite and the amount of food required, helping to further reduce serving waste.	Staff workload.	Effective communication and collaboration can help reduce individual staff workload. For example, during food-based experiences, cooks and educators can work together so that foods prepared are incorporated into the experience, rather than the cook preparing a separate meal that is not used while the educator independently leads the activity. By working together, both staff members can save on time and workload.
Ask for family input to find out what children enjoy eating at home and include some of these meals in the menu.		
Menu planning		
Careful menu planning, considering serving sizes for children can ensure that sufficient food is prepared for the children without preparing too much food.	Lack of menu planning skills.	See Menu and Meal Quality, Section 2, page 26
	Young children's appetites and food preferences can vary from day to day, making it difficult to predict how much food to prepare.	See Menu and Meal Quality, Section 5, page 49
Develop flexible menus that can be adapted to incorporate ingredients nearing their best-before or use-by date, while maintaining food safety requirements.	Limited paid hours allocated to menu planning and on-the-day adjustments.	See Menu and Meal Quality, Section 5, page 52
When new foods are introduced to children, introduce them in smaller quantities alongside familiar foods.		
Check products in the pantry before menu planning and purchasing. Making careful choices in meal planning can avoid "out of date" scenarios.	Pantry and fridge management skills.	Training/support in food service operation skills, including pantry management.
Include a designated section on displayed menus (as required by regulations) to allow for minor menu modifications based on ingredient use-by dates. This can support greater flexibility while maintaining compliance.		

Strategies	Challenges/considerations	Potential solutions
Untouched leftover food can be given to staff or families. In some services this practice is done as a community building practice.		
Involving children in menu and meal planning and food waste discussions		
Involve children when planning meals at the service.		See Menu and Meal Quality, Section 7, page 76 See Case study, page 32 of this module
Involve children in reflecting on food waste by discussing which foods they enjoyed, and which foods were left uneaten. Discuss ways that similar foods can be prepared to ensure repeated exposure whilst children's taste preferences are developing. This information can help inform future menu planning while promoting children's agency and participation.		
Storage approaches		
Ensure correct storage of items. For example, freeze extra supplies of bread, keep herbs fresh by storing them in water, line airtight containers containing pre-cut vegetables or berries with paper towels.	⚠ For regional/remote services Products may arrive with a shorter shelf life due to time travelling to service location.	Coordination with food suppliers may be needed.
⚠ For regional/remote services Maintain frozen food supplies to reduce spoilage and improve menu flexibility.	Remote services may experience power outages or delays in power restoration, increasing the risk of food spoilage.	Develop contingency plans for power interruptions, including consideration of backup power sources (e.g. generators) where appropriate. Monitor freezer temperatures and follow food safety guidance after outages.
⚠ For regional/remote services Prepare and preserve fresh produce when deliveries arrive by washing, cutting and freezing fruits and vegetables for later use.	Limited freezer space may limit this practice in regional/remote settings. Limited time for staff to prepare and preserve items.	Coordination with food suppliers may be needed. Allocated dedicated time for kitchen staff to prepare and store produce as soon as deliveries arrive. This can save on the costs of food that would be wasted if spoiled.
Meal preparation		
Be mindful when preparing produce, to only waste what is absolutely necessary. For example, when preparing strawberries only remove the green part rather than cutting a portion of the strawberry.		

Strategies	Challenges/considerations	Potential solutions
Present food attractively (e.g., small quiches or cutting of fruit instead of whole fruit) to make it more appealing for children which may lead to less waste.		
Repurposing unused food or leftovers		
Rice, pasta and quinoa can be used in soups, salads and bakes.	Recipe/menu modification skills.	Effective commercial kitchen skills, including safe and effective use of unused foods can save on food costs to potentially offset cost additional paid staff time. See Menu and Meal Quality, Section 5, page 50
Unused fruits and vegetables can be used to make baby purees, stock, muffins or dips.	Limited paid hours allocated to menu planning and on-the-day adjustments.	See Menu and Meal Quality, Section 5, page 52
Unused herbs can be used to flavour different dishes or make pesto.		
Leftover cooked vegetables, grains, or herbs can be incorporated into soups, bakes or dips.		
Leftover yoghurt can be used for smoothies/icy poles or 2-ingredient pizza dough.		
Vegetables like cauliflower, broccoli and cabbage, with waste from the stems, can be used to make stock cubes. To do this, add garlic and herbs to vegetable leftovers, cook, blend and freeze in a shallow pan lined with parchment paper. Cut into cubes and store in an airtight container for up to 3 months.		
Some shop bought vegetables can be regrown once the tops have been cut and the base replanted e.g., spring onions, celery, herbs.	Limited space for growing vegetables.	Limited space does not have to be a barrier to gardening. Herbs, vegetables and other plants can be successfully grown in small pots, containers or on windowsills. See Section 6, page 77
Milk that is about to go out of date can be used to make custard or white sauce for pasta dishes.		

Strategies	Challenges/considerations	Potential solutions
Mealtime practices		
It is important to note that children are still developing their taste preferences, and their appetite differs across days. Therefore, in the ECEC setting it is reasonable to expect that there will be plate waste, some days more than others. It is very important that children's autonomy and hunger and 'had enough' cues are being respected. Therefore, it is important not to ask children to finish their plates to save on food waste.	Lack of knowledge/skills in responsive feeding practices.	See Mealtime Environment and Practices, Section 2, page 20
Creating a calm, unhurried mealtime environment supports children to recognise and respond to their hunger and 'had enough' cues and may also reduce plate waste by allowing children enough time to finish eating if they choose.		
Family-style serving of meals where children can serve themselves what they think they will eat, can reduce plate waste.		See Case study, page 32 of this module
Encourage children to take smaller portions and then come back for seconds or thirds if they are still hungry.		
Pour small amounts of milk from a jug that children can top up to save on milk waste		
Lunchbox services		
Encourage parents to pack enough food for their child but in appropriate child sized portions.	In lunchbox services, services have limited control over the types and quantities of food packed by families.	See Staff and Family Engagement, Section 4, page 51
Encourage parents to involve children in lunchbox planning and packing.		
Provide a fridge to store food appropriately or encourage lunchboxes to be packed with appropriate cold storage to last throughout the day.	This strategy may not be feasible in some settings.	

Strategies for reducing the environmental impact of food waste

The following strategies, together with common considerations, challenges and potential solutions, are designed to support practices that reduce the environmental impact of food waste once it has occurred.

Refer overpage for details on challenges/considerations and potential solutions.



Food waste management

For services with enough space for a compost set up, fruit and vegetable scraps can be added to the compost bin.

Separate food waste from other waste at the service. Set up separate small waste bins for food in the kitchen or outside of rooms.

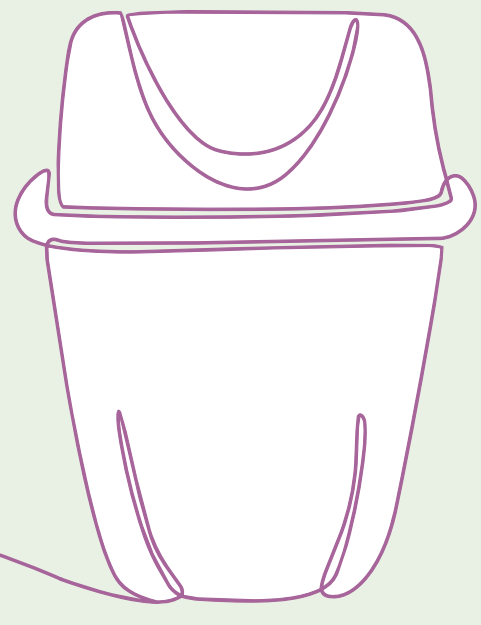
Bokashi units can be useful for rodent and odour free composting.



Child involvement

Children can be encouraged to add their plate waste to dedicated food scrap buckets. This can form part of educational experiences where children can learn about and be actively involved in managing food waste in their service.

A worm farm can be useful both for managing food waste and as part of a curriculum experience for children. Children can be involved in turning kitchen scraps into fertiliser for the service veggie patch, garden, or potted herbs.



EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA3

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

TABLE 8: Strategies for reducing the environmental impact of food waste

Strategies	Challenges/considerations	Potential solutions
Food waste management		
For services with enough space for a compost set up, fruit and vegetable scraps can be added to the compost bin.	Limited space – some services may not have sufficient outdoor space to support composting systems or worm farms.	Partner with the local community garden/school/church/etc to see if they are able to take and compost the service's food waste – that way no large compost bins are needed on-site.
	No council support for garden organics – particularly in regional/remote areas.	Connect with local council food and organics collection service if available.
	Costs – establishing composting systems, purchasing bins, or accessing commercial collection services may involve additional costs.	If feasible, use a paid composting service to manage and compost food waste.
Separate food waste from other waste at the service. Set up separate small waste bins for food in the kitchen or outside of rooms.	Staff time/workload – implementing and maintaining food waste management practices may place additional demands on educators and cooks who have competing responsibilities.	Apply for grants, contact your local hardware store or garden centre and see if they can donate any supplies, or ask for donations from families.
Bokashi units can be useful for rodent and odour free composting.	Costs – Bokashi units come at an additional cost.	Apply for grants, ask for donations from families or run a fundraiser.
Child involvement		
Children can be encouraged to add their plate waste to dedicated food scrap buckets. This can form part of educational experiences where children can learn about and be actively involved in managing food waste in their service.		
A worm farm can be useful both for managing food waste and as part of a curriculum experience for children. Children can be involved in turning kitchen scraps into fertiliser for the service veggie patch, garden, or potted herbs.		© See Case study, page 61 of this module

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"I will find out eventually the day after if there was a lot of waste or not from what I prepared. The good thing about us is that we have a composting situation going on. So every food scrap we have from the kitchen and food scraps coming from morning tea or afternoon tea will be dumped in there and will be given back to the soil and the soil will give it back to us."

– Cook, Regional Service

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Food Waste

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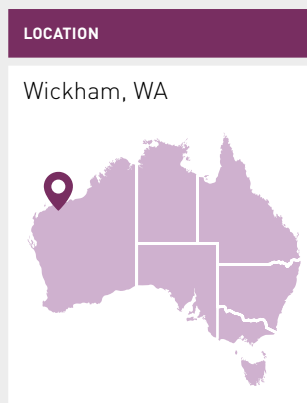
"Another aspect that we might look at during the desktop review is if the services highlighted anything spectacular that they've been doing in that space.. Sustainability, Menu development, Parent input, Community input. Those are the kind of things that we look at from the Quality Improvement Plan."

– Authorised Officer, Western Australia

BRIDGING CASE STUDY

Reducing food waste starts with everyday decisions

SERVICE	One Tree Wickham Children's Service
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, not-for-profit
AGE RANGE	Birth to 5 years
NUMBER OF APPROVED PLACES	46
REMOTENESS AREA CLASSIFICATION	Remote



Problem statement

Food waste is a significant issue in ECEC services mostly due to uneaten meals when trying out new menus with children unfamiliar with new foods and texture. It can also be due to incorrect portion sizes, busy or distracting mealtime environment and excessive food preparation.

Background to managing food waste in the service

At One Tree Wickham, the Service Cook conducts several menu trials before introducing new meals to the regular menu. By the third trial, the cook has a clear understanding of how much food needs to be prepared and whether the meal is suitable for ongoing inclusion.

Educators provide practical feedback during this process – for example, noting when children find meat cuts difficult to chew and suggesting smaller cuts, or observing that the way fruit is cut can influence how easily different age groups are able to eat it.

How do you manage the food waste

The service manages food waste through a combination of safe storage practices, repurposing of suitable food items, and sustainable recycling initiatives.

- Daily untouched leftovers are portioned, labelled, and stored in the fridge for staff to access. This supports educators who may not have packed lunch.
- The cook uses safe, creative methods to transform suitable excess ingredients into different dishes. For example, excess yoghurt can be turned into 2 ingredient pizza dough

or frozen yoghurt for afternoon tea, and excess vegetables get blended into a smooth, flavourful sauce that can be used for meals such as Mac and Cheese.

- Leftover fruits and other food offerings are reoffered throughout the day, provided they have been stored safely, kept covered, and checked before serving, ensuring children have ongoing access to nutritious options until late afternoon.
- Fruit scraps are sent to Kindy Room's Worm Farm. The worm farm produces worm juice, which is bottled using recycled sauce jars and offered to families for use in their home gardens.

Challenges and considerations and how these were overcome

- One of the main challenges during mealtimes in remote areas is managing flies, particularly in warmer weather. The team works proactively to minimise their presence by keeping food covered, maintaining clean eating spaces, and encouraging children to eat indoors where possible. These practices help reduce contamination risks, lower food waste, support safe food handling, and create a more comfortable mealtime environment for children and educators.
- Another challenge is that children often eat only small amounts because the scheduled mealtimes are very close together. To address this, educators have introduced progressive mealtimes, allowing children to eat when they are genuinely hungry rather than at a fixed time. This approach has supported hunger and 'had enough' cues, reduced pressure during meals, and helped children engage more positively with food.

CASE STUDY

Small changes making a big difference

Composting at a large scale to reduce waste and teach sustainability

SERVICE	Marjorie Mann Lawley Day Care Centre
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, not-for-profit
AGE RANGE	0–6 years
NUMBER OF APPROVED PLACES	58
REMOTENESS AREA CLASSIFICATION	Major cities

LOCATION

Mount Lawley, Perth, WA



Background

Marjorie Mann Lawley Day Care Centre has been running for over 50 years, is a private, not-for profit service, and has a philosophy inspired by the Reggio Emilia approach.

Sustainability is embedded in practice at Marjorie Mann, with children involved in activities such as recycling and composting as part of their routines every day. Reducing food waste is part of this process and forms part of helping children learn to care for the world around them.

What did you want to do?

- To reduce overall waste going to landfill.
 - To teach children about simple ways they can create a more sustainable world – “sometimes the smallest changes can make the biggest difference”.
- To teach children about the lifecycle of food – food → scraps → compost → garden/farm → food.
- To support the local community garden where one of the educators volunteered.

What did you do?

First, composting started with a partnership with the local community garden. Over time the service realised that this was not an appropriate solution as:

- The service was creating more food waste than the community garden could handle.
- Educators had to bring the waste to the garden themselves, and this was not a sustainable solution.
- Next, another possibility arose that involved getting in contact with a rubbish company that specialised in composting. This was fee-for-service, and was paid from fees.

How does the company manage the food waste?

- First, the company comes to the service to do a consultation and discover the needs of the service.
- The company assists in setting up bins in the most effective way for the service to reduce landfill.
- The company collects food waste and composts it.
- The ECEC service can then buy back the compost if they need it for their gardens, etc.
 - The compost can also be used as a fundraiser. Families can pick up a bag of compost and take some home.

How does this link with the children?

- Intentional teaching around composting is included in programs to:
 - Help children learn about the cycle of food.
 - Show children how to manage food waste and compost bins.
 - Demonstrate the use of compost in the garden to help things grow.
- Learning about composting is embedded into everyday practice with the children.
 - This helps children build habits that they will take throughout their lives.
 - This also links with the service's philosophy to encourage children to be active citizens.
 - An example of embedded practice:
 - > A compost bin is included in each of the rooms at the service.
 - > Children are encouraged to scrape their own plates into the bin as part of their daily routine.
 - > Educators take the food waste to the outside bins
 - > The bins are collected each week by the rubbish company.
- Resources used to teach children about composting include:
 - Books.
 - Posters to help children use the correct bins.
 - Tabletop provocations:
 - > To encourage discussion amongst the children and educators.
 - > For children to engage in activities to practice sorting waste into the correct bins.
 - A dedicated sustainability section in the service that is a permanent fixture there.

Who manages all of this?

- One of the educators is the Sustainability Officer who manages composting.

What's next?

- The service maintains a small compost bin and worm farm at the service, as well as the bins from the rubbish company, for children to see the composting process up close.
- The staff at Marjorie Mann are working on a 'plant to plate' program:
 - Children will be able to grow their own food from seeds and seedlings, look after it, then harvest and eat it.
 - This idea came from the children.

The difference it has made

- Children at the service are able to recognise what waste goes in which bin.
- It has affected the educators who are now spreading their knowledge about composting and waste reduction in their community.
- Composting is included in the service's monthly newsletter, and has begun to be embedded practice at home with families as well.

Top tips

- Start by educating the educators about composting and sustainability.
 - This also helps to expand ideas.
- Embed sustainability education into everyday practice.
 - Ensure this is done before building partnerships – this helps the partnership to work successfully.
- Don't try to rush things when building partnerships
 - The idea has to evolve authentically to work well and be sustained over time.

CASE STUDY

Where do our food scraps go?

An on-site worm farm to learn about reducing waste and the cycles of nature

SERVICE	Montessori Minds Childcare
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, for-profit
AGE RANGE	1 to 6 years
NUMBER OF APPROVED PLACES	127
NUMBER OF STAFF	30-40
REMOTENESS AREA CLASSIFICATION	Major cities

LOCATION

Geelong, Victoria



Background

Montessori Minds Childcare is a relatively new service in Victoria, that has been in operation for around two and a half years. The centre serves a highly diverse community and plays an important role in education and support for the whole community.

The building was designed with intention, with the aim of creating a learning environment where sustainability, food education, cultural inclusion, and community engagement were embedded into daily practice rather than treated as standalone programs or events.

The Montessori philosophy underpins all learning experiences, emphasising real world connections, practical life skills, observation, and respect for living things. This approach creates an inclusive environment where learning flows between the centre, families, and the wider community.

The worm farm at the centre is one tool they use to teach children about sustainability and how to care for the environment they are part of.

What did you want to do?

- They wanted to have education about food systems, sustainability and how to care for the environment embedded into everyday practice at the service.
 - This also included helping children develop care and understanding for the living things around them, reducing waste, and making meaningful connections between food, people and the environment.
- They also wanted children to be aware of the life cycles all around them every day, and how they could be part of that too through composting food scraps.

What did you do?

- As part of the planning for the Montessori Minds building, space was allocated for vegetable patches, herb gardens, fruit trees and a worm farm.
 - Garden patches were located in spaces with ample light and ventilation to ensure good crops.
- Maintaining these has become embedded into the daily program.
 - Children participate in planting, watering, harvesting, composting and worm farming, learning about lifecycles, food origins and waste reduction.
- Children also collect and compost their food scraps throughout the day, helping them to learn how the cycle works – food → scraps → compost/worm farm → garden soil → planting → food!
- The worm juice is used on the centre's garden, and extra is given to families at the service to use on their own gardens at home.

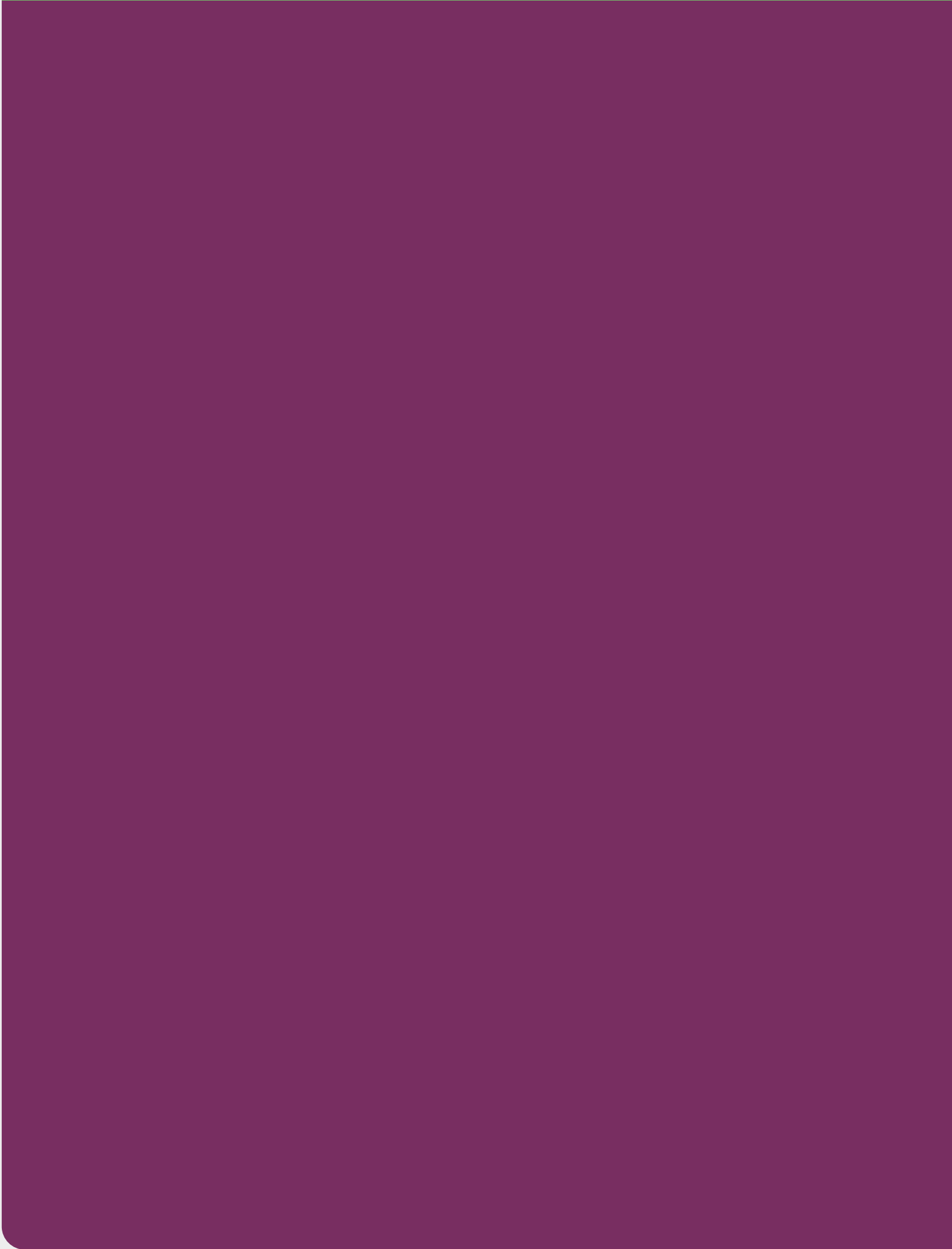
The difference it has made

- Children have learned to value where food comes from, how to use resources responsibly, and how their everyday actions can support a healthier and more sustainable world.
- The children are developing a deep, practical understanding of food systems, sustainability and environmental responsibility.
- Community collaborations have been built as they now collect coffee grounds from neighbouring cafés to reuse in garden beds.

Top tips

- Make sustainability a part of the service's vision, then embed it into everyday routines to create long-term habits that support that vision.
- Use real-world activities and experiences wherever possible to create rich learning experiences for children.
 - This includes incursions and excursions out into the community, and community collaboration.

Through real-world experiences, children at Montessori Minds are learning all about sustainability and environmental responsibility and becoming the sustainability superstars of the future.



SECTION 5

Local and Seasonal Food



Local culture, local food and seasonality

Defining local and seasonal food

Sustainable diets are built on respect of local culture and practice, and value food production and thoughtful sourcing.³

Local food – the term local refers to geographical distance, but can also indirectly refer to specific practices in production, for example the number of suppliers and distributors between the producer and the final consumer.⁴³ Local also reflects traditional knowledge.^{43,45-47}

Seasonal food refers to food being purchased and consumed close to the time that it is harvested.⁴⁴

Local and seasonal food purchasing and ECEC services

ECEC services purchase large amounts of food and are therefore an important food procurement setting that can have environmental and local economy impacts at scale.²⁹ Purchasing some food from local food producers or community food enterprises can not only have human and environmental health benefits, but also support local food economies, making them more sustainable in the long term.⁴⁵

Internationally, ECEC local food purchasing is supported through Farm to ECEC programs that interconnect local food procurement, gardening, and food, nutrition and agriculture education for children attending ECEC settings.³⁰ There is currently no formal program that supports farm to ECEC programs in Australia.

Services may engage in elements of these approaches. For ECEC services, the local and seasonal food principle relates to menu planning, food procurement and food education. This may include purchasing from local producers, community food hubs or growing some food in their service garden. Seasonal purchasing can support food quality and variety, lower transport costs, and reduce food costs.^{29,31} In addition, there is an educational opportunity for children to explore, experience and learn about local and seasonal foods and food cultures through the meals they eat, gardening and cooking experiences, play, stories, incursions, excursions and conversations.^{1,31,42} Table 9 outlines types of food sourcing.

TABLE 9: Types of food sourcing^{29,45}

National Sourcing	Buying “Australian grown” food
Regional sourcing	Sourcing food from within your state
Community/Local sourcing	Purchasing products from local farmers or community hubs*
Growing food in a garden	Further information on growing food onsite for educational purposes, tasting activities or to supplement the menu is available in the Gardens section of this module See Section 6, page 78

*When purchasing from local producers, ensure they are a registered food business.

Strategies to support local food systems and local food culture

The following strategies, together with common considerations, challenges and potential solutions, are designed to support local food systems and culture.

Managing the cost of local food purchasing

Some of the strategies presented throughout the SFP module, such as effective menu planning, purchasing in bulk, buying seasonal produce, being mindful of the cuts of meat and adding legumes to meals, could reduce costs and potentially offset some of the additional costs of local food purchasing.

What knowledge and training do ECEC staff need for local food purchasing?

- An understanding of seasonality and how to plan seasonal menus.
- Skills to adapt recipes with seasonality in mind.
- Knowledge of how to identify and connect with local food suppliers.
- Training covering food safety when sourcing from new suppliers, including which foods are lower risk to start with.

When sourcing food from local suppliers or producers, services should consider applicable food safety and environmental health requirements in addition to their responsibilities under the National Quality Framework. Local food procurement may involve obligations relating to supplier approval, food safety, food handling and traceability that sit outside ECEC-specific regulatory requirements.

EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA2, QA3, QA6

Strategies to support local food systems and local food culture

The following strategies, together with common considerations, challenges and potential solutions, are designed to support local food systems and culture.

Refer overpage for details on challenges/considerations and potential solutions.



Menu planning

When planning yearly menu cycles, adjust meals to incorporate seasonal produce or modify existing recipes to include seasonal ingredients.

Use recipes/plan menus that reflect and respect local cultural traditions.



Food procurement

Purchase a proportion of food with locality in mind.

National sourcing: As a minimum, focus on Australian products.

Regional sourcing: If available in your supplier or retailer, focus on products from state-based or regional farmers.

Community/Local Sourcing: Connect with local manufacturers, farmers, markets or community food hubs. For example, purchase apples from the local apple grower.

Start small, (e.g. focus on one product line e.g. milk, a popular fruit or vegetable, or another staple like bread or pasta) and grow from there.

Onsite growing of small amounts of produce for learning, tasting, and supplementing menus, or partnerships with existing community gardens.

A local food procurement plan can guide service staff, and local procurement goals can ensure that local sourcing becomes a routine rather than relying on individual enthusiasm.



Food education

Garden-based food education experiences help children learn where food comes from.

[See Food Education, Section 3, page 70](#)

Books and learning experiences can focus on teaching children where food comes from, to facilitate discussions around food from their local area.

Children can learn about local food cultures through garden-based food education, books and stories. The vignette: A day in the Wilds, outlines some strategies and reflections for connecting to culture through the garden.

[See Vignette, page 80 of this module](#)

Excursions or incursions, or learning about a local farm, can connect children with place.

[See Food Education, Section 3, page 99](#)

EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA6

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

[See Section 5, page 74](#)

TABLE 10: Strategies to support local food systems and local food culture^{29,31,43-45,47,48-51}

Strategies	Challenges/considerations	Potential solutions
Menu planning		
When planning yearly menu cycles, adjust meals to incorporate seasonal produce or modify existing recipes to include seasonal ingredients.	Limited skills to adjust recipes.	See Menu and Meal Quality, Section 5, page 50
	Time needed for recipe adjustment and procurement and the costs of staff time.	See Menu and Meal Quality, Section 5, page 52
Use recipes/plan menus that reflect and respect local cultural traditions	Limited knowledge/skills/confidence due to staff being unfamiliar with traditional ingredients or preparation methods.	Ask families to share cultural recipes that can be adapted. See Staff and Family Engagement, Section 1, page 15
	Some children may have reduced acceptance of foods that are unfamiliar.	Cook/chef training should include cultural awareness and traditional ingredients. See Mealtime Environment and Practices, Section 3, page 31
Food procurement		
Purchase a proportion of food with locality in mind. - National sourcing: As a minimum, focus on Australian products. - Regional sourcing: If available in your supplier or retailer, focus on products from state-based or regional farmers. - Community/local sourcing: Connect with local manufacturers, farmers, markets or community food hubs. For example, purchase apples from the local apple grower.	Cost is cited as the main barrier for local food purchasing.	Buying produce in bulk at the height of growing season can be a cost saving strategy. Vegetables and fruits can be diced and frozen for consumption later in the year. This can also be embedded into the curriculum and include a cultural component – for example, in many cultures, foods are preserved when in season to be used later in the year (e.g. tomato passata).
	Ensuring food safety is paramount – some service staff have expressed concerns over food safety of locally sourced products.	Irregular looking fruits and vegetables are often sold for less – these can be used in soups/stews. If there are food safety concerns, start with lower risk foods such as fruits and vegetables.
	Time is a major factor – especially setting up the initial systems for local food purchasing which requires identification and connection with local suppliers or products, including delivery cycles.	Using a community food hub (where available) can reduce time spent on identifying local food suppliers. Hubs can also manage food safety/quality assurance.
	 For regional/remote services Food costs tend to be higher in regional and remote areas, making local food purchasing harder to achieve. Availability of local options may be limited.	Buying produce in bulk at the height of growing season can be a cost saving strategy. Vegetables and fruits can be diced and frozen for consumption later in the year. This can also be embedded into the curriculum and include a cultural component – for example, in many cultures, foods are preserved when in season to be used later in the year (e.g., tomato passata).
	Start small, (e.g. focus on one product line e.g. milk, a popular fruit or vegetable, or another staple like bread or pasta) and grow from there.	

Strategies	Challenges/considerations	Potential solutions
Onsite growing of small amounts of produce for learning, tasting, and supplementing menus, or partnerships with existing community gardens.	Space or cost may be an issue with setting up a garden.	Gardens can start small – for example starting with a few pots and containers. See Section 6, page 77
A local food procurement plan can guide service staff, and local procurement goals can ensure that local sourcing becomes a routine rather than relying on individual enthusiasm.	Questions that could assist in setting up the food procurement plan • Why is your service choosing to purchase local food? • How will you start with your local food purchasing (e.g. buying Australian produce in season rather than purchasing produce from overseas? Is there a local butcher or local farm?) • Have a look at your pantry and then look at which of those items may be sourced from local food providers • Fruit and vegetables – how much is local? • Meat – is there an opportunity to purchase from a butcher? • Grains – can you purchase Australian grown? • Are there opportunities/constraints regarding relationships with current food distributors that need considering? • What are the opportunities/constraints regarding availability of local food in your region? • Are there any food quality or safety concerns? • How do you know where products come from? • How can you best communicate with current suppliers about local procurement preferences? • Who are the best local food suppliers? • What other farmers or distributors could you be working with?	
Food Education		
Garden-based food education experiences help children learn where food comes from. See Food Education, Section 3, page 70	Limited or no garden.	For services without garden access, the Food Education module provides ideas for learning experiences that help children understand the journey from soil to plate. See Food Education, Section 3, page 86
Books and learning experiences can focus on teaching children where food comes from, to facilitate discussions around food from their local area.		
Children can learn about local food cultures through garden-based food education, books and stories. The vignette: A day in the Wilds, outlines some strategies and reflections for connecting to culture through the garden. See Vignette, page 80 of this module		
Excursions or incursions, or learning about a local farm, can connect children with place. See Food Education, Section 3, page 99		

CASE STUDY

Growing, caring for and cooking plants

The use of a service garden to teach sustainability, life skills and caring for Country

SERVICE	Margaret Ives Community Children's Centre
SERVICE TYPE	Long day care
MEAL PROVISION MODEL	All meals provided on-site
BUSINESS MODEL	Private, not-for-profit, community managed
AGE RANGE	Birth to 5 years
NUMBER OF APPROVED PLACES	82
REMOTENESS AREA CLASSIFICATION	Major cities

LOCATION

Norwood, SA



Background

Margaret Ives Community Children's Centre has incorporated their gardens into the everyday programming and experiences of children at the service.

The gardens run through a combination of staff, child and community cooperation, fostering the building of community, a sense of ownership and pride, and the distribution of maintenance workload.

The gardens provide learning opportunities that help children learn valuable life skills, along with an understanding of sustainability and caring for Country.

What did you want to do?

To give children the opportunity to:

- Build connection to Country, and care of Country by learning:
 - How important nature is.
 - How to take care of nature.
 - About the lifecycles of plants.
 - About sustainability.
- Build on the children's interests relating to gardening.
- Practice cooking skills.
- Practice turn-taking, teamwork, and numeracy and literacy in a fun and play-based way.
- Provide opportunities for children to do something while at the service that they may not have the chance to do at home.

What did you do?

Setting up the gardens

- The gardens started with staff and family consultation.
 - This was achieved through their Professional Learning Communities (PLCs)
 - PLCs are groups at the service that have representation from each of the service's rooms, as well as from families.
 - Within these groups, members discuss projects to implement at the service.
- The service applied for grants to help set it up.
 - Donations were also invited and accepted.
- Staff planned for a native garden and a kitchen garden.
 - A lot of work went into what, where and when to plant.
 - Much of this was done with the children as an educational experience that focused on:
 - > Seasonality of produce grown.
 - > How to look after the plants.
 - Educators also use books and tablet devices at the service to assist with this research.
 - > Children asked questions and educators looked them up with the children.
 - > They then looked at the answers together, with the educator facilitating the translation of the information for the children.
 - > They then made decisions together about the next steps for the garden.

Embedding in programs

- All staff program together every three weeks to talk about what they will be doing.
- The garden has become an embedded part of each day at the service and is automatically included in programs.
- Special programs:
 - The service runs a one term program called 'Eat a Rainbow'.
- Some of the food used is from the garden and some is purchased.
- The program aims to support children to:
 - Try different fruits and vegetables of all the different colours.
 - Increase acceptance of new foods.
 - Encourage the acceptance of more fruits and vegetables into their meals.

Who looks after the gardens?

- Educators, children, family volunteers, community.
- The educators are responsible for the daily maintenance of the gardens, along with the children.
 - This allows the distribution of workload, and teaches children about responsibility and caring for nature.
- One of the mothers of the service also volunteers in the garden.
 - She works with the local primary school as well, and includes children from the school to help with the service's garden.
 - This extra support also reduces workload for staff.
- The community are invited into the service twice a year to help prepare the garden beds for re-planting.

How do the children engage with the gardens?

- Staff take children out either individually or in groups, depending on how many children are interested in gardening that day.
- Children assist staff with checking the plants and watering.
- When the produce is ready to harvest, children are able to harvest with the staff and bring it into the centre to cook with if they wish.

The difference it has made

Growing, harvesting, cooking and tasting the produce and herbs from the gardens has made a big difference at Margaret Ives. Examples include:

- More cooking experiences
 - Cooking experiences with the children have increased since the garden started as children like to cook with what they pick.

- Some of these experiences are planned and some are ad hoc.
- A sense of pride.
- The children are proud of what they have been able to achieve by growing, harvesting and cooking the plants themselves.
- Food exploration
- Children are tasting food they may not usually try as they have grown it themselves.
- Rich, embedded, everyday learning.
- The gardens have provided opportunities to learn about:
 - Different plants and how they grow.
 - The importance of growing foods in the right seasons.
 - Lifecycles in nature.
 - Care and respect for the environment.
 - Environmental sustainability and responsibility.
 - Patience while observing the growth of the plants.
 - Food literacy.
 - Civics.
 - Literacy and numeracy.
 - Community and working together.
 - How to search for, interpret and use information.

Top tips

- Think about the space you have at your service before you start your garden.
- Knowing which spaces get sunlight throughout the day and the year will impact what you can grow and when.
- Include children in the process, this helps them:
 - Build ownership of the garden.
 - Increase their interest in caring for it and maintaining it. This can include:
 - > Consultation and research on what to plant according to children's interests and what they would like to try.
 - > Surveys on what the children would like to cook with the food they grow.
- Have passionate people driving the project.
- This has led to greater success in the garden at the service.
- Plan enough time to look after the garden, as it will thrive with proper maintenance.
- Engage with the community to help set up and maintain the garden.

When implementing these strategies services should ensure they continue to meet the relevant food safety, food allergy and regulatory requirements.

See Section 5, page 74

Regulatory, food safety and food allergy considerations

When implementing sustainable food practices, services should ensure that they continue to meet relevant regulatory, food safety, and food allergy requirements.



Food safety requirements and ECEC regulatory requirements operate alongside each other and may both apply to the same activity. Food safety requirements primarily address the safe handling, storage, preparation and provision of food, while ECEC regulatory requirements focus on children's health, safety, wellbeing, supervision and service operations. Services should identify and meet all requirements relevant to their circumstances.

The following sections highlight some key considerations for practice, documentation and further support.

Practice

- Ensure food practices comply with relevant food safety legislation, local council requirements, the Australia New Zealand Food Standards Code, and the National Regulations (Regulations 77-79), where applicable.
- If purchasing from local suppliers, check that suppliers have appropriate food business licenses to ensure they are complying with the food standards code.
- Ensure food allergen management are consistent with best practice.
- When purchasing food in bulk, use reusable, clearly labelled storage containers and stock rotation systems "First in First Out" to minimise spoilage while maintaining food safety.
- Clearly label and record all prepared, cooked, preserved, and batch-cooked foods stored for later use.
- Only food that has not been served or touched and has been stored and handled in accordance with food safety requirements should be repurposed.
- When surplus food is packaged by a food business such as ECEC for families to take home or for sale, the food business has a duty of care to ensure that the food is handled, processed, packaged and stored safely before it leaves the premises or is sold. Services that undertake this practice will need to address food safety protocols for this in their food safety plan.
- If your service is packaging surplus food for children to take home or for resale, discuss the activity with your food safety regulator to ensure that you understand and meet all applicable food legislation requirements.
- Food that is made and packaged on the premises where it is sold or given to families may not be required to carry a

label. However, you must be able to provide families with information about the food's composition, ingredients and other information that would otherwise be required on a label, where requested.

Documentation

- Maintain food management documentation to support traceability of food, including records of suppliers, deliveries and food handling when required.
- Ensure that garden planning and maintenance complies with regulations and has undergone risk assessment.

See Section 6, page 84

Further support

- *See Menu and Meal Quality, Section 8, page 80*
- For food waste management practices, such as composting, check your state or local council requirements for food and garden organics to ensure you comply with local regulations.

Reflective questions



Educators

- *How well do the foods and cooking experiences we offer reflect both what's local and in season, and the cultural food practices of the families in our care?*

SECTION 6

Gardens in ECEC Services and Settings



Gardens in ECEC services and settings

Gardens in ECEC settings provide opportunities for children to learn about and engage with environmental sustainability through play, exploration, and connection with their natural environment.

Purpose of a garden

Depending on their purpose, gardens may also supplement food provision. Gardens are a broad and cross-cutting topic that can support multiple areas of the NQS and the EYLF. They can also be linked to a range of principles, learning outcomes, curriculum areas, and cultural perspectives, including:

Gardens for learning



On-site gardens can provide rich, hands-on opportunities for children to explore plants, local and cultural foods, and the natural world through play and inquiry. Gardening experiences can support learning across multiple areas while fostering curiosity, environmental awareness, social collaboration, and problem-solving.^{1,50-52}

See Food Education, Section 3, page 63

See Food Education, Section 4, page 91

Gardens for growing and sharing



Gardens can provide young children with hands-on opportunities to participate in planting, caring for, harvesting, and preparing fresh produce. These rich experiences can help children understand where food comes from, seasonal food, and the value of sharing food with others.^{1,50,52,53}

Gardens for consuming and supplementing produce



Where possible and appropriate, gardens can supplement food provision with small amounts of fresh produces such as herbs, vegetables, and some fruits.⁵²

Gardens for aesthetics



Gardens can enhance the visual appeal of the outdoor environment, creating inviting and calming spaces for children and educators. Features such as flowers and native species can encourage appreciation of nature and contribute to a positive learning environment (Australian Children's Education & Care Quality Authority.^{52,54}

Gardens to explore local and cultural foods



Gardens can provide children with opportunities to experience local and cultural foods.⁵¹ Through growing, observing and tasting a diversity of edible plants, children can develop an understanding of local food traditions, seasonal foods, and connection to Country or place, while learning to value the knowledge, cultures and practices that shape the food system.

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 2, Outcome 3,
Outcome 4, Outcome 5

NATIONAL QUALITY STANDARD
QA1, QA3

Reflective questions



Educators

- How do we draw on Aboriginal and Torres Strait Islander perspectives on plants and food to shape our garden as an ongoing partnership?

The role of gardens in supporting learning, sustainability, food procurement and meal planning

Learning and development

On-site gardens provide valuable opportunities to embed food-based, cultural, and place-based learning into everyday practice. The Food Education module outlines play-based approaches that can be incorporated into intentional planning, daily routines, child-initiated play and mealtimes.

See Food Education, Section 1, page 13

Sustainability

Gardens can provide children meaningful opportunities to engage with experiences such as growing edible plants, composting, conserving water, reducing food waste, and supporting biodiversity. These experiences can foster environmental stewardship and an understanding of responsible resource use, aligning with the Guiding Principles outlined in this section.^{1,3}

Meal planning and procurement

Whilst it is unlikely that an on-site garden in an ECEC service will provide a large proportion of food that can be prepared for children, it can contribute to more sustainable food procurement by providing small quantities of fresh herbs, vegetables and fruit for use in cooking experiences or meals. The Food Education module outlines learning experiences that include planting and harvesting herbs and vegetables to use in recipes.

See Food Education, Section 3, page 66

See Case study, page 72 of this module

EARLY YEARS LEARNING FRAMEWORK
Outcome 1, Outcome 2, Outcome 3,
Outcome 4, Outcome 5

NATIONAL QUALITY STANDARD
QA1, QA2, QA3, QA6

What are the different sizes of gardens

While the term 'gardens' is used in this guide, this can range from a small potted plant to a large sized garden. The information below groups different types of gardens to provide services with a starting point for considering how gardens may be incorporated into their setting or to support the further development of existing garden initiatives.

Windowsill/potted plants

Potted plant gardens provide a simple and accessible starting point for services with limited outdoor space. This can include herbs (e.g., basil, parsley, mint, rosemary), leafy greens (e.g., lettuce, spring onions), small fruiting plants (e.g., strawberries, cherry tomatoes).

Plot (small garden plot for discovery and exploration)

This can include a garden plot in a small space (1–2 m²) that can include herbs, leafy greens, vegetables (e.g. cucumbers, zucchini and capsicum depending on climate), and bush foods depending on climate (e.g. finger lime, native thyme).

Small desktop hydroponic (no soil) gardens

These systems can grow plants in water enriched with nutrients rather than soil and can be used indoors throughout the year. These can include herbs (e.g., parsley, basil, mint) and leafy greens (e.g., lettuce, spinach).

Large productive garden for supply to service

A large productive garden would provide sufficient space to grow a diverse range of vegetables, herbs, and fruit trees to enable regular harvesting for cooking experiences, and where appropriate to supplement meals within the service.

Large scale hydroponic (no soil) systems for mass production

This can include vertical gardens with herbs (e.g., basil, parsley, coriander), leafy greens (lettuce, spinach, and kale), and vegetables/fruits (e.g., tomatoes, cucumbers, and strawberries). Note: these generally require upfront investment and ongoing maintenance, limiting feasibility, particularly for services in remote and very remote locations.

Preparing and planning for gardens

Preparing and planning for gardens requires careful consideration to ensure that the garden is safe, practical, inclusive, and aligned with the service philosophy. This section will outline key considerations for approved providers, nominated supervisors or service leaders.

Regulatory considerations

Specific requirements as outlined in the Education and Care Services National Regulations 2012 are relevant and must be considered when preparing and planning a garden. These include:

- Regulation 108. Space Requirements – outdoor space.
- Regulation 113. Outdoor space – natural environment.
- Regulation 114. Outdoor space – shade.

Structural, safety and supervision standards

- **Adequate supervision:** Supervision arrangements should be responsive to the activity, environment and identified risks.
- **Climbing controls:** Design features that discourage climbing on garden structures to reduce the risk of falls or injuries.
- **Water and drainage safety:** Ensuring prevention of the accumulation of standing water to minimise slip and drowning risks and ensure safe access and use. Ensuring that water tanks and buckets are securely covered and inaccessible to children.
- **Fence clearances, tree heights and fall zones:** To ensure boundary safety, minimise climbing and fall risk, and support safe supervision and use of the garden space.
- **Plant selection:** Cross referencing to regional flora databases to avoid toxic and prohibited plants.
- **Provision of PPE for staff and children** accessing areas as per risk identification.

Further resources can be found on pages 79 and 86.

Garden policy

- Risk assessments and safety considerations must be developed.
- Service leaders must ensure that educators, staff, parents/guardians, volunteers, students and others at the service have access to relevant service policies, procedures and risk assessments, and understand and comply with safety requirements.

Curriculum and inclusion considerations

Ensuring that experiences in the edible garden are based on the educational program and are inclusive of all children regardless of their abilities, additional needs, or medical conditions.

Safety

- Ensuring that children are adequately supervised at all times – this may include additional staffing on garden access days, supervision point design considerations when planning the position and scale of the garden.
- Ensuring that a risk assessment is carried out for any experience in the garden and consideration of risks included below.
- If visiting a garden as part of an excursion, services must comply with relevant excursion requirements, including conducting a risk assessment in accordance with Regulation 101 of the Education and Care Services National Regulations 2012.
- Any food produced in the garden for centre consumption must have food safety compliance considerations.

Staff involvement, engagement and communication

- Staff must ensure that all policies, risk assessments and safety considerations are read, understood and followed at all times.
- Man-made gardens, as opposed to natural wilderness can take time to maintain.
 - Maintenance includes preparing soil, planting seedlings, watering produce, harvesting, propagating, collecting seed, maintaining soil quality and collecting and removing leaf debris.
 - Consideration must be given to rostering time to staff to maintain the gardens and:
 - Ensure the gardens are maintained adequately.
 - Ensure the gardens form part of the centre's philosophy and become embedded in practice and procedures.
- Community engagement:
 - Volunteers must have read and understood all policies and safety considerations before being involved in the garden.
 - All interaction with volunteers would be tied to other safety considerations e.g. Working With Children Check, excursion policy consideration for visiting speakers/garden experts.

Hydroponic gardening in ECEC

Cost

- Hydroponic set ups are a cost and space efficient way of producing a large amount of food in a small space.

Set-up

- Set-ups are designed to be indoors and can provide the opportunity for “grow rooms” in underutilised areas and/or space saving options such as grow walls and windowsills, offering flexibility and broader educational options for children.

Yield

- Plant growth is often faster as environmental elements (sunlight, water, weather, climate) can be controlled to optimise growth and production.
- Offering year-round opportunities alleviates the need for seasonal choices and creates the opportunity for four times more produce per square meterage than traditional gardens.

Sustainability

- In sustainability terms, hydroponic growth can use up to 95% less water than traditional growth methods, which is a consideration for regional and remote areas with limited access to water.

Risk

- Risk factors such as insects/pests are controlled due to the indoor environment.
- Risks of soil contamination or fertiliser risks are also avoided.

Training

Establishing a garden may require a consideration of a range of practical elements including planning, staff training, ongoing maintenance, and available resources. While some services may be able to establish gardens using existing resources, grants and other funding opportunities may help reduce the costs associated with garden establishment. This section outlines suggestions for training to support gardening in ECEC settings.

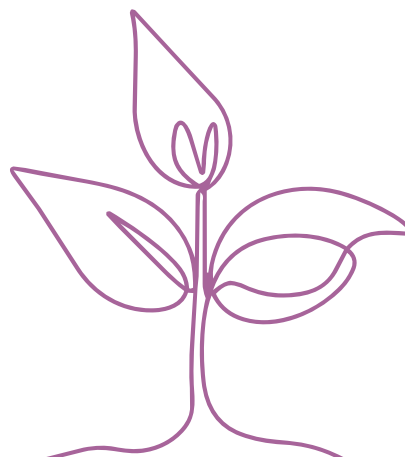
- Training provision would be required for kitchen staff who harvest, collect or are supplied by children and ECEC staff with food from the garden, with the intention of preparing these foods for consumption within the service
- Additional training, including ideas on usage and storage/preserving of produce would be of benefit in overall sustainability of food supply.
 - Comprehensive food preservation short courses are provided in many online formats that would assist in information and training around food sustainability.

- Garden maintenance and growing skills
 - Training would be of benefit if large scale provision for service was the intention of the garden, rather than quick taste edible gardens.
- Costs for training and garden set up could ensure long term sustainability in food production and may lead to cost saving for services.

ACECQA risk assessment resources

- Australian Children's Education and Care Quality Authority. (2023) [Risk assessment and management tool](#)
- Australian Children's Education and Care Quality Authority. (2026) [Risk Assessment and Management – Learning Experience Plan \(Educators/Teachers\)](#)
- Australian Children's Education and Care Quality Authority. (2026) [Risk Assessment and Management – Indoor and Outdoor Learning Environment Safety Checklist](#)

NATIONAL QUALITY STANDARD
QA1, QA2, QA3, QA4, QA6, QA7



VIGNETTE

A day in the wilds

Learning and cultural connection in the garden



The Wilds is a nature-based service where children explore their natural surroundings within a large block set amongst an urban backdrop.

Once through the garden gates, children are transported to a lush, rich orchard containing a range of native and introduced edible fruit trees. Figs, apricots, bush finger limes, midyim berries, pigface, lilly pilly, bottlebrush trees, desert quandong, apples, oranges, rosellas and thornless berry bushes all grow throughout the sprawling block, alongside an undergrowth of peppermint, chamomile, parsley, lemon balm and lamb's tongue.

Vegetable beds line the inside of the garden, interspersed with outdoor work tables where children and adults tend to planting and harvesting and share mealtimes within the garden space. Child-sized garden implements are easily accessible, allowing children to choose if, when and how they would like to explore and work in the garden.

The babies lie happily on rugs next to educators under the fruit trees, watching the movement of the leaves, observing birds and butterflies, and smelling the rich soil and occasional wafts of herbs.

The toddlers are busy exploring the garden, which is visually signed. Educators meaningfully engage with the children in the garden, asking them to name plants and colours and encouraging them to identify "mini beasts" – the bugs, snails, worms and other little creatures that make up the ecology of the garden. Another educator sits a little further away with a collection of storybooks about the mini beasts commonly found in gardens and reads aloud to the children.

The children actively engage with educators in harvesting apples and oranges. When asked what the oranges are for, one child explains that they are going to juice them and excitedly shares what he remembers about the process.

Another child gathers the juicing machine while an educator carefully cuts the oranges in half, discussing knife safety and explaining the process to the children.

The boy is ready to juice the oranges and demonstrates his dexterity, explaining that he is going to "use all of his muscles". He squeezes as much juice as he can from the oranges and measures it into a bowl.

Three girls are busy collecting the seeds from the discarded orange halves. One girl shows her friend the seeds and explains that she plans to take them home to germinate and grow her own orange tree.

The Aboriginal Liaison Officer who the children refer to as "Aunty", walks past with a small cohort of toddlers on her way to the yarnning circle, a space comprising logs for seats. Seeing the children juicing oranges, she points to the bottlebrush tree and shares that, traditionally, the flowers were used to make a sweet drink. She shares that she collected the flowers as a child with her nana.

The children become excited and ask questions about the bottlebrush flowers and Aunty's experiences.

Reflection

The above scenario highlights interactive experiences that can foster cultural connection in the garden. Aunty's sharing of her childhood experiences and knowledge about the bottlebrush engages children in conversations about culture and local First Nations knowledge. Together, these experiences demonstrate how gardens can provide a rich environment for interconnected learning about food, nature, culture and sustainability.

This illustrative vignette was written by a service leader whose Aboriginal Heritage, together with her Croatian background and childhood experiences of self-sufficiency and gardening while living on a small island in what was then Yugoslavia, have shaped her passion for fostering cultural connection, relationships with food and sustainable food practices through ECEC gardens.

When engaging children in garden-based experiences it is important to adhere to safety and food allergy requirements. [See Section 6, page 84](#)

Food safety awareness, assessment, and management

The establishment and ongoing management of gardens in ECEC settings should include consideration of potential health and safety risks, with appropriate measures in place to identify, assess and manage these risks.

Services should ensure gardens are planned and managed in accordance with relevant legislation and local council by-laws. Where gardens are used to grow food for consumption, produce should be selected and planned to ensure it undergoes an appropriate cooking process and is managed in accordance with the service's Food Safety Program. The following guidance outlines key considerations for safety awareness, assessment, and management.

Food safety considerations

- Ensure soil safety. Soil must be free of heavy metals and chemicals so make sure the soil is of good quality.
- Test your soil before use if not utilising store-bought certified soils.
- Use only compost and soil mix that is AS 4454 certified and follow the safety instructions on the product when handling.
 - Typical safety instructions will include: avoid breathing dust/mists, wear particulate mask if dusty, wear gloves, keep product moist when handling, wash hands after handling.
- Select plants that are appropriate for children's use and the local environment, taking into account potential health and safety risks (e.g., toxic, or allergenic species). Produce that will be cooked is always preferred over ready to eat.
- Consider seed distribution and possible impacts/biosecurity in surrounding areas when gardening in regional or remote areas, or in wilderness areas.
- If not using scheme water for irrigation, ensure the water source is free from pathogens.
- Ensure appropriate drainage when planning garden set up to avoid stagnation of water in pooling areas and associated risks.
- Use of chemicals
 - Aim to be chemical free or have personnel formally trained in chemical application and a formal chemical treatment record system.
- Do not use any raw animal manure. It is not possible to completely remove bacteria and viruses on vegetables via washing.
- Prevent intrusion of animals (domestic/wild) and non-edible plants/weeds into the food growing area.
- Clean off as much dirt as possible whilst still in the garden and place produce into clean sanitised containers.

- Make sure that any produce brought into the kitchen does not cause cross contamination issues; ensure they are washed before consumption in separate sink/tub to raw meats and store separately to other produce.

Hygiene and disease prevention

- Ensure strict adherence to handwashing practices when playing in or tending to the garden.
- Prevent Tetanus
 - Ensure that children and staff are up to date on immunisations – this bacterial infection resides in the soil and can enter through cuts and scrapes in the skin.
- Use of Personal Protective Equipment (PPE)
 - Use child size gloves for children to prevent cuts/grazes and minimise contact with soil borne bacteria.
 - Use adult sized PPE for staff and volunteers.
- Consider the ages and developmental stages of children accessing the garden
 - Children under 2 have increased risk of choking/ingestion due to hand to mouth developmental exploration.

Allergy management

The following would need to be addressed in a Risk Assessment with harm minimisation as a priority before allowing children into the garden:

- Follow the relevant Compliance and Regulations
 - [See Section 6, page 78](#)
- Be aware of risks around bites and stings from insects.
- Be aware of the possibility of allergies to plants and insect bites.

Food preparation and cooking experiences

Food preparation and cooking experiences may involve both food safety requirements and ECEC health, safety and supervision considerations. Services should identify the requirements relevant to the food being prepared, the nature of children's participation and any individual health or medical needs.

Dealing with kitchen waste sustainably – including risk considerations

Plate waste is a significant issue in services – having a compost area in the garden section of a service is a way of sustainably dealing with plant waste products that occur during food preparation and serving.

Composting waste materials

Compost is the accumulation of degrading food scraps, plants, and other organic matter. Composting is a fun, educational way of teaching children the process of decomposition, waste, garden management and cycles of growth (compost is the end!).

Risk considerations

- Compost piles close to kitchens/gardens hold risk considerations such as attraction for vermin (rodents and snakes).
- Compost piles can generate significant heat and, if poorly managed, pose a risk of spontaneous combustion.
 - Implement temperature control measures, including regular temperature monitoring and record keeping.
 - Ensure adequate aeration of compost piles to prevent excessive heat build-up.
 - Compost temperatures can exceed 70°C, creating a risk of burns from direct contact or exposure to steam.⁵⁵
 - Restrict children's access to active compost piles and ensure appropriate supervision and safety measures are in place.
- Diseases can be caused by pathogens in soil – for example, histoplasmosis is caused by bird or animal droppings and can be contracted by handling soils which contains droppings.

Risks can be reduced by:

- Using the correct PPE
- Correctly positioning the compost pile
- Ensuring staff awareness
- Correct hygiene techniques.

Worms to support composting in services

Worm farms offer a sustainable way to turn waste into compost (nutrient-rich soil amendment) and worm tea (a nutrient-rich liquid fertiliser), reducing the costs of disposing of waste, purchasing fertiliser for service gardens, and improving soil quality and garden productivity. Worm farms can be contained in easy-to-use compartmentalised units sourced from local garden supply stores.

Children can observe the composting cycle and learn about animal welfare through this process.

Risks and considerations for worm farms

- Hygiene considerations – the possibility of pathogen exposure in decomposing waste.
- Physical risks such as slipping on worm leachate (worm tea).
- Allergic reactions to insects or moulds that may occur at the site as part of the decomposition process.
- Poorly managed farms can serve as an attractant for vermin (rats, mice, slugs) that carry further risk.
- Neglect of the farm can result in foul odour and a putrid anaerobic environment that can kill the worms.
 - The wrong types of food can kill the worms.
- Extreme heat can kill the worms.
 - Underground worm farms can alleviate heat stress and reduce smells and attractants for vermin.
 - These can be sourced from garden suppliers.
 - Please note, however, that underground worm farms may reduce the viewing of the process for children.
- Hygiene practices such as washing hands after touching the worms or the worm farms, and wearing gloves, reduce risk.

Many of the controls described in this section relate to environmental health and food safety requirements, particularly where food is grown, handled, prepared or consumed. These requirements operate alongside ECEC obligations relating to children's health, safety, supervision and the management of hazards within the education and care environment.

EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA2, QA3, QA4, QA6, QA7

Planning for gardens

Planning for gardens used for learning (observation and tasting) edible gardens provide countless opportunities for children.

Contact with the outdoors is often limited for many children in modern society, and the vital experience of using the outdoors and being comfortable in nature is being lost. Especially so is the correlation children have between the foods served to them from their kitchen, where that food came from and how it got to them. Educational programs and gardens teach how a plant goes from a seed to a plate.

Incorporating a garden in an ECEC setting can enrich children's experiences and connect them with the complexities of natural ecosystems. The majority of children live in urban settings that include high density living, and have limited experiences in nature. A garden can provide a bridge for children into the natural world with benefits to wellbeing and enjoyment of the natural space that a garden can provide.

Personal experience and observation of nature are building blocks for program enrichment. Gardens ground children in growth and decay, predator-prey relations, pollination, carbon cycles, soil morphology, and microbial life. In the garden children can also experience and observe seasonal cycles, the impacts of weather, growth, insects, local wildlife, the place of humans in nature, and connection to Country. Gardens bring community together and allow children to explore human interaction with the natural world.

ACECQA resource on gardens

➤ Australian Children's Education and Care Quality Authority. (2021) [Growing and Gardening](#)

EARLY YEARS LEARNING FRAMEWORK
Outcome 2, Outcome 3, Outcome 4

NATIONAL QUALITY STANDARD
QA1, QA3, QA4, QA6

Questions to consider when thinking about setting up an edible garden



Space – where will the garden be and what size?



Consider the position – partial shade or sunny area would work best



Which vegetables, fruits and herbs would your service like to grow and eat?

Consider discussing this with the children who can help to decide on plants based on an investigation into seasonality. Also consider the risks outlined in this section



Who will be the champions (who will look after the garden or facilitate setting up the garden)?



Can your service apply for grants to fund the garden?



Can local shops donate seedlings?



Could parents support the project?



How will you ensure the sustainment of the garden in the long term (e.g., if staff members or parents leave the service)?



How will gardening be embedded into food education?

Risk awareness, common risk factors and safety

Risk awareness

This section aims to provide support and guidance with respect to risk awareness in relation to gardening and composting. For information on risk assessment and management, please see the ACECQA website.

What is meant by risk awareness, risk assessment, and risk management?

For the purpose of the Best Practice Guide, the following definitions are used:

- **Risk awareness:** Knowledge on the risks and hazards that can cause harm to children, staff, or families.
- **Risk assessment:** Identify potential hazards in association with an on-site garden, educational experiences in the garden, and worm farm/composting services.
- **Risk management:** Apply practices that reduces risk and avoids exposure to hazards.

Table 11 outlines key considerations for planning, establishing, and managing an on-site garden, compost system, or worm farm within your service.

TABLE 11: Risk awareness key considerations

Risk Awareness	Additional points											
 Risk factors Risk differs based on various factors relevant to each service, including the size and type of garden in each service	Space Location, size, and layout of the garden, including hazard reduction and safe storage of gardening equipment and materials.											
	Harm to children and educators Potential physical injury from gardening equipment, tools, poisonous or toxic plants, and exposure to environmental hazards.											
	Allergy Plants, foods, insects, and animals in the garden that may trigger allergic or anaphylactic reactions in children, service staff, or visitors.											
	Food safety Safe growing, harvesting, handling and consumption of edible plants, including consideration of soil quality, animal contamination, and hand hygiene.											
 Risk levels Consider the risk level of a planned garden, composting system, and related experiences – modify the plan to reduce risk and potential harm to children, service staff, and visitors.	Risk levels can be defined as follows:  Minor risk: Unlikely to cause long term problems.⁵⁶ The chance of occurrence is unlikely, and the potential impact is low.^{56,57} It can be handled through routine maintenance or normal supervision.  Moderate risk: Could possibly or be likely to occur, with a moderate to significant impact.⁵⁷ These risks require planned mitigation because they could lead to noticeable injuries or minor medical attention.^{56,57}  Significant risk: If it occurs, it can carry severe consequences, such as serious injury, long term harm, or death.^{56,57} Will require thorough planning and close supervision by staff.⁵⁶ Different elements related to gardening can impact the risk level of a risk factor. For example: <table><tr><td>Risk factor: Allergy</td><td>Risk factor: Food safety</td><td>Risk factor: Allergy</td></tr><tr><td>Risk Level: Minor </td><td>Risk level: Moderate </td><td>Risk level: Significant </td></tr><tr><td>Contact with certain plants may trigger or exacerbate mild skin allergies or irritation.</td><td>Ingestion of toxic plants or chemicals used in gardening.</td><td>Insect stings or bites from allergen-producing insects that may result in anaphylaxis.</td></tr></table> Risk level is dependent on how well potential hazards are managed throughout the garden’s design, operation, and maintenance. For example, good hygiene practices, appropriate growing methods, safe use of garden inputs, and careful selection and handling of plants are important to minimise risks and ensure the garden remains a safe learning environment for children.			Risk factor: Allergy	Risk factor: Food safety	Risk factor: Allergy	Risk Level: Minor 	Risk level: Moderate 	Risk level: Significant 	Contact with certain plants may trigger or exacerbate mild skin allergies or irritation.	Ingestion of toxic plants or chemicals used in gardening.	Insect stings or bites from allergen-producing insects that may result in anaphylaxis.
Risk factor: Allergy	Risk factor: Food safety	Risk factor: Allergy										
Risk Level: Minor 	Risk level: Moderate 	Risk level: Significant 										
Contact with certain plants may trigger or exacerbate mild skin allergies or irritation.	Ingestion of toxic plants or chemicals used in gardening.	Insect stings or bites from allergen-producing insects that may result in anaphylaxis.										

Common risk factors

Table 12 below outlines common risk factors to consider when planning, establishing and maintaining gardens in ECEC settings.

TABLE 12: *Common risk factors*

SPACE	
Water Hazards	Drowning or water-related injuries from ponds, water features, or water-filled containers (e.g. water catchments or buckets).
Tools and equipment	Trips, cuts, puncture injuries, or inappropriate use of tools as weapons.
Fertilisers and garden products	Accidental ingestion or inhalation of fertilisers or other garden products.
Garden layout	Minimise trip hazards and allow safe supervision.
HARM TO CHILDREN, SERVICE STAFF, AND VISITORS	
Pathogens in soil	Harmful pathogens present in soil causing infections on open wounds, when inhaled, or ingested. Soils can become contaminated with pathogens from inadequate composting, contamination by birds/animals/pets that have access to the garden, or application of untreated manure.
Insects and spiders	Bites and stings.
Reptiles	Bites from snakes or lizards.
Rodents	Contamination from faeces and urine, bites.
Toxic ornamental plants	Some ornamental plants (e.g. oleander and some lilies) are highly toxic if ingested
Chemicals	Exposure to chemicals used to treat pests and weeds.
FOOD SAFETY	
Poisonous plants and weeds	Some plants (e.g. oleander, thornapple, nightshades, fox gloves, etc.) are highly toxic if ingested. The garden can become contaminated by seeds/creeping plants.
Chemicals used for pests, weeds, fungus	Exposure to elevated levels of chemicals caused by wrong chemical use, over-application, insufficient withholding period, accidental application, spills, untrained staff, and poor chemical use record keeping.
Pathogens in "home-made" compost	Pathogens can survive and persist in compost, particularly when the composting process is not adequately managed to achieve and maintain temperatures sufficient to inactivate pathogens throughout the entire compost pile.
Pathogens in irrigation water	When not using potable water from reticulated schemes, harmful pathogens can be present in the water used for the irrigation of food.
Contaminants in soil	Residual pesticides, chemicals, heavy metals, being absorbed by the plants being grown for food.
ALLERGY	
Bites and stings	Anaphylaxis to bites and stings may occur in staff and children with known allergies and also may present for the first time.
Plants	Plants may cause allergic skin reactions or irritation.
Food grown in the garden	Children may be allergic to foods grown in the garden – it is possible to be allergic to any food including fruits and vegetables.
Mulch	Mulches used for gardens can contain food allergens (such as peanut shells) and mould allergens.

ACECQA risk assessment resources

- Australian Children's Education and Care Quality Authority. (2023) [Risk assessment and management tool](#)
- Australian Children's Education and Care Quality Authority. (2026) [Risk Assessment and Management – Learning Experience Plan \(Educators/Teachers\)](#)
- Australian Children's Education and Care Quality Authority. (2026) [Risk Assessment and Management – Indoor and Outdoor Learning Environment Safety Checklist](#)

Risk management

Potential risks associated with ECEC gardens can be minimised through appropriate planning, supervision, and ongoing management. Services should undertake site-specific risk assessments when establishing and maintaining gardens, taking into account the garden's purpose, design, location, local environmental conditions, and the ages and developmental capabilities of the children using the space. Some strategies to support risk management in ECEC gardens are outlined below:

- **Use only AS 4454 certified products** – This ensures the compost/soil mix has been treated and processed to reduce the concentrations of harmful microorganisms.
- **Do not use chemicals** without proper skills/knowledge and record keeping systems being in place.
- **Mulch** – If possible, source mulches that do not contain allergens and store in a dry place to minimise the growth of moulds.
- **Education/training of children and staff** – Provide developmentally appropriate education for children and staff training on safe gardening practices, hygiene, and identifying potential hazards.
- **Garden access** – Consider the ages and developmental stages of children when designing and using garden spaces. Some areas of the garden may need to be restricted or inaccessible to children, particularly where hazards are present or during maintenance activities. Ensure access is managed appropriately and children are supervised according to their age and abilities.
- **Deterring animals** – Reduce contamination from domestic and wild animals by using appropriate deterrents, such as fencing, covering garden beds when not in use (particularly overnight), netting where appropriate, or visual deterrents (e.g. scarecrows). Regularly inspect the garden for signs of animal activity, including faeces, before children enter or produce is harvested.
- **Deterring insects** – When purchasing plants, consider those less likely to attract bees and wasps (such as non-flowering plants).
- **Practising good hygiene** – Wash hands thoroughly with soap and water after handling soil or produce, or wear gloves when working in the garden. Wash produce thoroughly before consumption.
- **Teaching safe use of tools** – Ensure children use age-appropriate gardening tools under close supervision and are taught how to use and store them safely.
- **Removing, covering, or fencing water catchment areas** – Cover or securely fence water storage and catchment areas to reduce drowning risks and other safety hazards.
- **Food Allergy** – Talk to families about potential allergies, and if new foods are being introduced. When growing wheat indoors on cotton wool, ensure children with a known wheat allergy do not handle the wheat grains (seeds).

Ensuring your gardens adhere to regulations and standards

By ensuring that your service follows relevant regulations and standards, gardening can be carried out safely for all children and staff.

- **Regulation 108.** Space Requirements – outdoor space
- **Regulation 113.** Outdoor space – natural environment
- **Regulation 114.** Outdoor space – shade

Useful resources

- Fresh Produce Safety Centre. (2025) [Quick Guides for Fresh Produce Safety](#)

NATIONAL QUALITY STANDARD
QA2, QA4

SECTION 7

Appendices



Appendix A – Glossary

Abbreviations and acronyms

Abbreviation	Full form
ACECQA	Australian Children's Education and Care Quality Authority
BPG	Best Practice Guide for Early Childhood Education and Care Food Environment
ECEC	Early Childhood Education and Care
EYLF	Early Years Learning Framework
FAO	Food and Agriculture Organization of the United Nations
FE	Food Education module
MEP	Mealtime Environment and Practices module
MMQ	Menu and Meal Quality module
NQS	National Quality Standard
NNN-ECEC	National Nutrition Network for Early Childhood Education and Care
OSHC	Outside School Hours Care
PPE	Personal Protective Equipment
QLG	Quality, Leadership and Governance module
QIP	Quality Improvement Plan
SFE	Staff and Family Engagement module
SFP	Sustainable Food Practices module
UPF	Ultra-processed food[s]
WHO	World Health Organization

Key terms and definitions

Term	Definition
Artichoke Model	A visual conceptual framework for understanding the whole food environment in Early Childhood Education and Care settings. Like the layers of an artichoke, the model places children's everyday food experiences at the centre, surrounded by the people, places, systems and routines that shape those experiences. The model includes 12 connected 'leaves' grouped into three layers: What (food provided), How (feeding practices and support), and Environmental levers (service conditions).
AS 4454	The Australian Standard that sets requirements for composts, soil conditioners and mulches.
Best Practice Guide (BPG)	The Best Practice Guide for Early Childhood Education and Care Food Environment – a comprehensive guide providing evidence-informed recommendations for creating positive food environments in ECEC settings for children from birth to 5 years.
Biodiversity (food related)	The variety of plants, animals and other living things used for food, including different types and varieties of crops, livestock and aquatic resources.
Bokashi bin	A sealed container used to ferment food scraps using a special mix of microorganisms. Bokashi systems typically require a specialised bin and Bokashi mix or bran.
Composting	A way of turning food scraps and other organic materials into compost, which can be used to help plants and gardens grow.

Term	Definition
Discretionary foods	Foods and drinks that are not part of the five food groups and are not needed for health, often higher in saturated fat, added sugar or salt. The Australian Dietary Guidelines recommend these are limited.
Early Childhood Education and Care (ECEC)	Formal care and educational settings for children from birth to 5 years, including long day care, family day care, preschools and kindergartens.
Early Years Learning Framework (EYLF)	Australia's national framework (version 2.0) that guides early childhood educators in developing high-quality programs for children from birth to 5 years. The framework describes the vision, principles, practices and outcomes essential to support and enhance children's learning, development and wellbeing.
Food allergy	Food allergy is an immune system reaction to a food. Foods that cause an allergic reaction are called food allergens.
Food waste	Food that is discarded or not consumed within an ECEC service, including waste generated during food storage, preparation, cooking, serving and meals.
Greenhouse gas emissions	Gases released into the atmosphere that trap heat and contribute to climate change
'Had enough' cues	Alternative term for satiety cues – the signals a child shows when they are satisfied and have had enough to eat. Examples include slowing eating pace, becoming distracted, pushing food away, or saying 'all done'.
Hydroponics	A method of growing plants without soil, using water and nutrients to support plant growth
National Quality Standard (NQS)	Australia's national benchmark for quality in education and care services, consisting of seven quality areas including Educational Program and Practice, Children's Health and Safety, Physical Environment, Staffing Arrangements, Relationships with Children, Collaborative Partnerships with Families and Communities, and Governance and Leadership.
National Nutrition Network – ECEC (NNN-ECEC)	A community of practice comprising researchers, practitioners, and government and nongovernment employees who collaborate to improve nutrition and food environments in early childhood education and care settings across Australia. www.nationalnutritionnetwork.com.au
Plate waste	Food that has been plated or served but is not eaten and is subsequently discarded.
Seasonal food	Food that is naturally available and harvested at a particular time of year in a given region.
Service leader	This may include roles such as director, nominated supervisor, coordinator, or other service leadership positions depending on the service structure and jurisdiction.
Serving waste	Food that has been prepared but is not plated or served to children.
Sustainable development goals	Seventeen global goals adopted by the United Nations to address social, economic and environmental challenges and promote sustainable development by 2030.
Sustainable healthy diets	As defined by FAO and WHO include foods and meals that provide people with the nutrients they need while having a low impact on the environment. They are nutritious, safe, affordable, accessible, equitable and culturally appropriate.
Sustainable healthy diets guiding principles	Principles developed by the FAO and WHO to support dietary patterns that promote health and wellbeing while being environmentally sustainable, accessible, affordable, culturally acceptable and equitable. Sixteen principles across three domains [health, environmental impact, and sociocultural aspects]. Together these principles provide a framework for balanced food decisions that support both human and planetary health. These principles underpin the SFP module.
Worm farm	A system that uses worms to break down food scraps to nutrient-rich material that can be used in gardens.
Ultra-Processed Food (UPF)	While there is no single agreed definition of ultra-processed foods (UPFs), they are generally considered to be commercially produced foods made using industrial processing techniques and ingredients or additives not commonly used in home cooking.

Appendix B – SFP Module Development Process

Stage 1: Scoping

Purpose: To develop the initial topic and question list for the Best practice Guide.

Approach: Using the Artichoke Framework as a basis the following process was completed:

- Alignment of the artichoke model to reduce duplication of themes and sub topics.
- Problem Analysis based on each theme and sub topic of the artichoke model.
- Based on initial problem analysis and associated problem trees adaptation to theme objectives, and associated questions.
- Development of background and foreground questions addressing each problem statement.

Who was involved: Best Practice Guide Project Team

Stage 2: Evidence sourcing, co-design and question refinement

Evidence sourcing and co-design

Purpose: Source relevant evidence (all forms), lived experiences and contexts.

Approach: Using the initial topic and question list Evidence Sourcing, System Mapping and Co-design was undertaken using the following approach:

- Literature reviews.
- Surveys representation from a wide range of centre types (e.g., centre-based care, family daycare), meal provision models (meals provided onsite, lunchbox services) and locations (metropolitan, inner regional, outer regional, remote, very remote).
- Focus groups (ECEC cooks, educators, directors and Authorised officers)
- BPG Advisory Group

Who was involved

- Best Practice Guide Project Team
- Advisory group (review only)
- SFP Working Group

Question refinement

Purpose: To review and provide feedback to refine the initial question list for the Best Practice Guide.

Approach: Presentation of the process and associated outputs (i.e, themes and question list) for review and refinement.

Who was involved

- Advisory group (review only)
- SFP Working Group

Stage 3: SFP Guide development

Purpose: To develop the recommendations, strategies and practices and review associated supporting text for the Best Practice Guide.

Approach	Who was involved
Induction Session and Background Session: To outline the process to date and review the evidence from the evidence sourcing and co-design process outputs.	• SFP Working Group • BPG Project Team
SFP Workshop 1: To develop the guide recommendation, strategies and background text - Out of Session: Review outputs of previous workshops	• SFP Working Group • BPG Project Team
SFP Workshop 2: To develop the guide recommendation, strategies and background text - Out of Session: Review outputs of previous workshops	• SFP Working Group • BPG Project Team
Section 6	
Develop the guide recommendation, strategies and background text	• Education Consultant
Specialist input	• Food, Environmental Health Directorate, Public and Aboriginal Health Division, Department of Health, Western Australia. • Education Consultants
Case studies	
Case studies	• ECEC Services • Education Consultants
Review and design process: Finalise SFP module	• SFP Working Group • BPG Advisory Group • Education Consultants
SFP Guide Completed	

Appendix C – Evidence Framework

This Best Practice Guide is evidence-informed, using a comprehensive evidence framework that intentionally draws on multiple forms of evidence. It integrates peer-reviewed research, national and international guidelines, policy and regulatory requirements, and practice-based and lived experience evidence from ECEC educators, families and sector interest holders. Where high-quality research evidence was limited or still emerging, we deliberately incorporated practice wisdom, sector consensus and experiential knowledge so the guidance remained realistic, inclusive and implementable across diverse ECEC contexts.

Purpose	A range of questions were developed in consultation with the project team. The evidence framework guides the sourcing, identifying, selecting and synthesis of evidence to answer these questions		
Types of evidence – all types of evidence were included, including:			
Qualitative	Qualitative research design • Phenomenological • Ethnographic • Grounded theory • Historical • Case study • Action research • Participatory research		
Quantitative	Experimental • Randomised controlled trial • Non-randomised controlled trial • Cross-sectional study	Observational analytical • Observational analytical • Cohort study	Descriptive • Case report, case series, case study
Other	• Grey literature (when searches could not answer questions sufficiently) • Best Practice Guide: Focus group interviews • Best Practice Guide Surveys		
Process			
Search strategy	Key search terms were developed by an expert research team specialising in the ECEC food environment, in collaboration with a faculty librarian. Constructs were based on the Population (children aged 0-5), Context (ECEC), Concept (questions to be answered) framework.		
Databases searched	• Medline • CINAHL	• Education source • ERIC	• Cochrane
Screening	Articles were imported to the program Covidence for screening. Title and abstract screening excluded articles that were not related to the food environment in ECEC. Full text screening applied the below inclusion and exclusion criteria.		
Inclusion/exclusion criteria	• Studies were included if they aligned with the Population, Context, Concept principles aligned with the research questions outlined. • Date range: published since 2020. Older studies considered “key” evidence were included • Studies were excluded if they were: - not conducted in ECEC - not involving children aged 0-5 - not related to the food environment - not related to one of the questions - more than 5 years old (unless considered a key resource)		
Data extraction (literature reviews)	A structured extraction tool with predefined categories corresponding to each question was utilised to ensure consistency in data extraction		
Synthesis/data analysis	• Literature reviews: A narrative synthesis was conducted for each literature review question utilising predefined templates. The templates outlined the information in sections based on the proposed format i.e. definitions, paragraph, image, evidence statement, table and gaps in the literature. • Surveys: Descriptive data from surveys (cooks, educators, service leaders and authorised officers) informed focus group questions and discussions. • Focus groups: transcripts were analysed using thematic analysis.		

References

1. Australian Children's Education and Care Quality Authority. Information sheet: Belonging, being & becoming: Sustainability 2024 Available from: https://www.acecqa.gov.au/sites/default/files/2024-11/InformationSheet_EYLF-Sustainability%20-%20Principles%20Information%20Sheet_v2.pdf.
2. Sambell R, Elford A, Overstone T, Love P, Elliott K, Vale S, et al. The Artichoke Model: A conceptual framework for positive food environments in Early Childhood Education and Care (ECEC) settings.: Edith Cowan University. 2025 Available from: <https://doi.org/10.25958/h62r-yr53>.
3. Food and Agriculture Organization of the United Nations & World Health Organization. Sustainable healthy diets – Guiding principles 2019 Available from: <https://www.fao.org/3/ca6640en/ca6640en.pdf>.
4. Burns E, Elcombe E, Pierce H, Hugman S, Gannon S. Breastfeeding after return to work: An Australian national workplace survey. *Maternal & Child Nutrition*. 2023;19(3):e13516.
5. Australian Institute of Health and Welfare. 2010 Australian national infant feeding survey: indicator results 2011 Available from: <https://www.aihw.gov.au/reports/mothers-babies/2010-australian-national-infant-feeding-survey/summary>.
6. Xiang N, Zadoroznyj M, Tomaszewski W, Martin B. Timing of Return to Work and Breastfeeding in Australia. *Pediatrics*. 2016;137(6):e20153883.
7. National Health and Medical Research Council. Infant Feeding Guidelines 2012 Available from: <https://www.nhmrc.gov.au/about-us/publications/infant-feeding-guidelines-information-health-workers>.
8. Global Panel on Agriculture and Food Systems for Nutrition. Food systems and diets: Facing the challenges of the 21st century 2016 Available from: <https://assets.publishing.service.gov.uk/media/59e0b67ded915d6aaafc2ea3/ForesightReport.pdf>.
9. Liyanapathirana NN, Grech A, Li M, Malik A, Ribeiro R, Burykin T, et al. Nutritional, environmental and economic impacts of ultra-processed food consumption in Australia. *Public Health Nutrition*. 2023;26(12):3359–69.
10. Seferidi P, Scrinis G, Huybrechts I, Woods J, Vineis P, Millett C. The neglected environmental impacts of ultra-processed foods. *The Lancet Planetary Health*. 2020;4(10):e437–e8.
11. Hemler EC, Hu FB. Plant-Based Diets for Personal, Population, and Planetary Health. *Advances in Nutrition*. 2019;10:S275–S83.
12. Grady A, Stacey F, Seward K, Finch M, Jones J, Yoong SL. Menu planning practices in early childhood education and care – factors associated with menu compliance with sector dietary guidelines. *Health Promotion Journal of Australia*. 2020;31(2):216–23.
13. Elford A, Spence A, Szymlek-Gay E, Sambell R, Wu M, Love P. Exposing young children to plant-based protein in early childhood education settings – a missed opportunity. *Proceedings of the Nutrition Society*. 2025;84(OCE1):E76.
14. Pearson N, Wolfenden L, Finch M, Yoong SL, Kingsland M, Nathan N, et al. A cross-sectional study of packed lunchbox foods and their consumption by children in early childhood education and care services. *Nutrition & Dietetics*. 2021;78(4):397–405.
15. Willett W, Rockström J, Loken B, Springmann M, Lang T, Vermeulen S, et al. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*. 2019;393(10170):447–92.
16. National Health and Medical Research Council. Australian Dietary Guidelines 2013 Available from: https://www.eatforhealth.gov.au/sites/default/files/content/The%20Guidelines/n55a_austrian_dietary_guidelines_summary_131014_1.pdf.
17. Australian Government Department of Health and Ageing. Get up & Grow Healthy Eating and Physical Activity for Early Childhood Director/coordinator book 2009 Available from: <https://www.health.gov.au/sites/default/files/documents/2020/10/director-coordinator-book-get-up-and-grow-director-coordinator-book.pdf>.
18. Zheng M, Park SY, Bolton KA, Foong-Fong Chong M, Grafenauer S, Xi B. Dietary Intake Trajectories from Early Life and Associated Health Outcomes: A Systematic Review. *Advances in Nutrition*. 2025;16(11):100528.
19. Food Standards Australia New Zealand. Microorganisms and foodborne illness 2025 Available from: <https://www.foodstandards.gov.au/consumer/prevention-of-foodborne-illness/Microorganisms-and-foodborne-illness>.
20. Crippa M, Solazzo E, Guizzardi D, Monforti-Ferrario F, Tubiello FN, Leip A. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*. 2021;2(3):198–209.
21. Poore J, Nemecek T. Reducing food's environmental impacts through producers and consumers. *Science*. 2018;360(6392):987–92.
22. Australian Government Department of Agriculture Fisheries and Forestry. Animal product residue monitoring 2025 Available from: <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/food/nrs/animal-residue-monitoring>.
23. James-Martin G, Baird DL, Hendrie GA, Bogard J, Anastasiou K, Brooker PG, et al. Environmental sustainability in national food-based dietary guidelines: a global review. *The Lancet Planetary Health*. 2022;6(12):e977–e86.
24. Australian Government Department of Climate Change Energy the Environment and Water. National Food Waste Strategy. Halving Australia's Food Waste by 2030 2017 Available from: <https://www.dcceew.gov.au/environment/protection/waste/publications/national-food-waste-strategy>.
25. Elford A. Towards Sustainable Healthy Food Provision in Early Childhood Education Settings: Deakin University; 2023 Available from: <https://hdl.handle.net/10779/DRO/DU:30242470>.
26. New South Wales Environment Protection Authority. Love Food Hate Waste 2026 Available from: <https://www.epa.nsw.gov.au/Your-environment/Waste/reducing-your-household-waste/love-food-hate-waste>.
27. Elford A, Spence AC, Wakem A, Rozman M, Campbell KJ, Love P. Environmental sustainability and food provision in the early childhood and education setting. *Public Health Nutrition*. 2023;1–11.
28. NSW Environment Protection Authority. Early childhood sector food waste action guide 2024 Available from: <https://www.lovefoodhatewaste.nsw.gov.au/sites/default/files/2024-07/Report%20-%20Early%20Childhood%20Food%20Waste%20Action%20Guide%20-%20v8%20-%2010%20July%202024.pdf>.

29. Galvin L, Rose E, Jeyapalan D, Godrich S, Horton J. Transforming the Public Plate –A menu of options that nourishes people, place and planet 2025 Available from: <https://macdochfoundation.org/transforming-the-public-plate/>.
30. National Farm to School Network. Farm to Early Care and Education: Cultivating healthy habits for our littlest eaters 2026 Available from: <https://www.farmtoschool.org/our-work/early-care-and-education>.
31. Elford A, Spence AC, Campbell KJ, Rozman M, Love P. The co-design of support strategies for sustainable, healthy and affordable food provision in Early Childhood Education settings. *Public Health Nutrition*. 2025;28(1):e12.
32. United Nations Committee on economic social and cultural rights. The right to adequate food [art. 11] 1999 Available from: <https://digitallibrary.un.org/record/1491194?v=pdf>.
33. R Sambell, A Elford, L Madaffari, J Lo, A Devine, R Wallace. Feeding Inequity: Nutritious meals cost double in very remote Australian Early Childhood Education Services In Review 2026.
34. Elford A, Spence A, Campbell K, Rozman M, Gelman R, Love P. Sustainable and Nutritious Food Environments in Early Childhood Education and Care: a Toolkit: Deakin Institute for Physical Activity and Nutrition; National Nutrition Foundation; 2026 Available from: <https://doi.org/10.26187/deakin.33117440>.
35. MacLean S, Bolton KA, Dickie S, Woods J, Lacy KE. Energy Density and Level of Processing of Packaged Food and Beverages Intended for Consumption by Australian Children. *Nutrients*. 2025;17(14):2293.
36. Aquaculture Stewardship Council. Setting the standard for seafood 2026 Available from: <https://au.asc-aqua.org/>.
37. Australian Certified Organic. Australian Certified Organic Standard 2019 2020 Available from: https://australianfoodtimeline.com.au/wp-content/uploads/2020/05/ACOS_2017_V1.pdf
38. Marine Stewardship Council. For a future full of fish, choose the blue fish tick 2026 [Available from: <https://www.msc.org/en-au/what-we-are-doing/msc-theory-of-change/the-msc-blue-fish-tick>].
39. UN Environment programme. Food waste index report 2021 2021 Available from: <https://wedocs.unep.org/items/9f033472-298d-434f-b612-e29e329c721a>.
40. United Nations Department of Economic and Social Affairs: Sustainable development. Transforming our world: the 2030 Agenda for Sustainable Development. Goal 12 Ensure sustainable consumption and production patterns. 2015.
41. National Waste Policy Regional and Remote Australia Working Group. Solutions for waste management in regional and remote Australia 2022 Available from: <https://www.nepc.gov.au/sites/default/files/2022-09/regional-remote-case-studies.pdf>.
42. Elford A, Clark L, Ihlein C, Devine A, Sambell R. What Shapes Menu and Meal Quality in Early Childhood Settings? Insights from Staff and Authorised Officers. In Review 2026.
43. Tomatis, F., Carità, A. & de Broissia, C. 2023. Local sourcing – A guide for the hotel, restaurant, catering and tourism industries. Rome, FAO. <https://doi.org/10.4060/cc4234en>
44. Seasonal Food Guide. Seasonal Food Guide 2026 Available from: <https://www.seasonalfoodguide.org/>.
45. Eat Well Tasmania. Local food procurement. What are the co-benefits for local and regional economies? 2020 [cited 2024]. Available from: <https://www.eatwelltas.org.au/wp-content/uploads/2022/05/EWT-Local-Procurement-Approaches-and-case-studies-for-success.pdf>.
46. Galloway C, Devine S, Parison J, Jones HA. Procurement from local producers for food service in primary and secondary school settings: A scoping review. *Health Promotion Journal of Australia*. 2023;34(2):316–27.
47. Jones H. Local food procurement: A rapid review of approaches and case studies 2019 Available from: <https://eatwelltas-org-au.assets.ionatahosting.net/uploads/2022/05/EWT-Local-Procurement-Approaches-and-case-studies-for-success.pdf>.
48. Megens S, Roy R, Murray D, Cummings H. Institutional Local Food Procurement. A field guide for managers and cooks 2014 Available from: https://sustainontario.com/greenhouse/custom/uploads/2016/09/Appendix_B_-_Thunder_Bay_Local_Food_Procurement_Field_Guide_for_Managers_and_Cooks_Feb_2015.pdf.
49. National Farm to School Network. 2021 National Farm to Early Care and Education Survey 2022 Available from: <https://www.farmtoschool.org/resources-main/2021-national-farm-to-early-care-and-education-survey>.
50. Stephanie Alexander Kitchen Garden Foundation. Early Childhood Services, 2022 Available from: <https://www.kitchengardenfoundation.org.au/content/early-childhood-services>.
51. Bergan V, Krempig IW, Utsi TA, Bøe KW. I Want to Participate – Communities of Practice in Foraging and Gardening Projects as a Contribution to Social and Cultural Sustainability in Early Childhood Education. *Sustainability*. 2021;13(8):4368.
52. Australian Children’s Education and Care Quality Authority. Connecting with practice: Enjoying the vegetable garden [YouTube] 2020 Available from: https://youtu.be/PxzzJVkb-lk?si=e0_iBcSaWYwbMuM7.
53. Aussie Childcare Network. Bush Tucker Gardens In Early Childhood Services 2024 Available from: <https://aussiechildcarenetwork.com.au/articles/childcare-articles/bush-tucker-gardens-in-early-childhood-services>.
54. Australian Children’s Education & Care Quality Authority (ACECQA). Learning Environments 2022 Available from: https://www.acecqa.gov.au/sites/default/files/2024-11/InformationSheet_EYLF-Learning%20environme_Practices_v2.pdf.
55. Department of Primary Industries. How to compost on farm 2021 Available from: <https://www.dpird.nsw.gov.au/agriculture/soils/more-information/improvement/compost>.
56. Australian Children’s Education and Care Quality Authority. Risk assessment and management 2020 Available from: https://www.acecqa.gov.au/sites/default/files/2021-05/Risk_management_and_management.pdf.
57. Australian Children’s Education and Care Quality Authority. Risk assessment and management tool 2023 Available from: <https://www.acecqa.gov.au/resources/applications/sample-forms-and-templates>.



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