



Fruit & Vegetable Consortium

A business case to invest in increasing vegetable consumption in Australia and a blueprint for its implementation

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Business case & blueprint summary

This business case and blueprint outlines the recommended approach to attracting investment and material support from interested industry, health and government stakeholders to establish a collaborative behavioural change/marketing program aimed at increasing consumption of vegetables in Australia. As well as outlining an evidence base and rationale for the project, it is designed to aid implementation by providing a blueprint for the required governance and documentation including business plans, budgets and the creative brief to agencies.

Purpose of the program

The motivation for this initiative is:

- To **improve health outcomes** through activating permanent behavioural change to Australian dietary habits
- To **improve social outcomes** by:
 - *Reducing national health costs*
 - *Generating economic activity that flows through to vegetable production regions of Australia.*
- To **improve environmental outcomes** through:
 - *Reduced wastage in the supply chain and home*
 - *More environmentally sustainable food production.*

Report structure

Part A: The business case

Part B: Governance, management & funding model

Part C: The behavioural change strategy.

Part A: The business case

The business case for collective investment in a national behavioural change/marketing program to drive vegetable consumption is convincing. The evidence base has been structured around six core propositions, each of which includes compelling evidence drawn from Australian and international literature; data analysis undertaken for this and related prior projects; as well as the substantial knowledge base and expertise of the Fruit & Vegetable Consortium members.



Proposition 1: The vast majority of Australians are not eating the recommended serves of vegetables

- The NHMRC Australian Dietary Guidelines recommend at least five standard serves of vegetables per day should be consumed for good health (NHMRC, 2013). The 2017-18 National Health Survey (ABS 2018) records that only 7.5% of Australian adults and 6.3% of children reported consuming the recommended serves.
- In 2017/18, on average, men aged 18 years and over, consumed 2.3 serves of vegetables each day and women consumed 2.5 serves. School aged children and teenagers in particular, under-consume vegetables (ABS, 2018) and 18 to 24 year olds are the lowest consuming cohort within adults.
- Total vegetable consumption (fresh and processed) has been steadily declining at 1.1% p.a. (5 year CAGR), suggesting that Australians today consume 13 kilos per year less vegetables per capita than they did in 2001 (see analysis in this report).
- It is estimated that only 55% of vegetables produced are actually consumed due to losses in the supply chain and wastage in the home (McKINNA *et al*, 2018).
- The factors contributing to the under-consumption of vegetables are diverse, each requiring specific interventions to address (McKINNA *et al*, 2018).

Proposition 2: Low vegetable consumption is causing poor public health outcomes and escalating the health cost burden

- Vegetables are vital for good health and inadequate consumption can have serious health consequences from pregnancy to end of life (Duthie *et al*, 2018).
- Overweight and obesity are linked to chronic diseases, the leading cause of ill health and death in Australia (AIHW 2016). Australia was identified as the fifth most obese country in the OECD (OECD, 2017). More than 66% of Australian adults are either overweight or obese (National Health Survey 2017-18).
- Eating adequate vegetables has a direct linkage to maintaining a healthy weight (Schlesinger, 2019 and Nour, 2018).
- Many studies show that a diet rich in a range of vegetables is a critical part of preventative health, reducing the risk of high blood pressure, heart disease, some cancers, eye and digestive problems (Harvard School of Public Health, 2020).
- The disease burden could be cut by 14% if Australians who are overweight or obese maintained a weight loss of 3kg (AIHW, 2018).



Proposition 3: Attempts to lift vegetable consumption in Australia have not improved the national position

- Unlike most developed nations, there is no national marketing program in place to promote vegetable consumption to the broader Australian community (Fruit & Vegetable Consortium, 2020).
- Previous healthy eating campaigns in Australia have been inconsistent with their themes and branding and not well coordinated (Grunseit *et al*, 2016).
- Investment in healthy eating campaigns to date in Australia are estimated to have been at best around 50% short of the recommended investment levels for effective reach (Grunseit *et al*, 2016).
- Changes in behaviour are more likely to result when the media and education campaigns are run over a number of years and use multiple communication channels with a focus on specific foods (Mozaffarian *et al*, 2012).
- A health-driven as opposed to a consumption-driven campaign and insufficient involvement from the industry, including the retail sector are given as key reasons why the national Go for 2&5 program did not meet its goals (Rekhy & McConchie, 2014).

Proposition 4: The economic, social and environmental payback from investing to lift vegetable consumption is compelling

- A 10% increase in vegetable consumption across the population would reduce annual health expenditure in Australia on certain cancers and cardiovascular diseases alone by \$100 million (Deloitte Access Economics, 2016).
- An increase in consumption of half a serve per day across the population would conservatively generate an incremental increase in industry returns of \$634 million per annum which is shared by all parties along the food supply chain (McKINNA *et al*, 2018).
- Increasing vegetable consumption has wider economic potential with increased consumption generating as much as \$1 billion (NPV) economic value over 11 years (Deloitte Access Economics, 2018).
- Every dollar of incremental value generated by an industry has a flow-on multiplier effect on GDP and regional employment. Every new job created in the industry supports an additional job in the regional economy. (Deloitte Access Economics, 2018).
- Based on modelling from the wine industry, it could be argued that for every \$1 of additional industry value created and every additional job created, there would be at least \$1 more contributed to GDP and one more job in the wider community. (Wine Australia, 2019).
- Food production constitutes the single largest driver of global environmental degradation. Without consumption of a greater proportion of vegetables, the world will not meet the UN's Sustainable Development Goals nor the Paris



Agreement and may struggle to feed the forecast world population of 10 billion people by 2050 (EAT Lancet Commission Summary Report, 2019).

Proposition 5: Pooled resources would more effectively deliver the scale of shift that is now required

- Learnings from international campaigns suggest that a high degree of collaboration between all stakeholders including industry is an important criterion for success (Rekhy & McConchie, 2014).
- The Grunseit *et al* study (2016) identified that there had been over 55 different physical activity, nutrition and obesity campaigns conducted in Australia between 1996 and 2015.
- Consistent messages from multiple sources are more likely to have an influence on the purchasing and consumption behaviours of targeted groups (Kraak, 2017).
- A review of 57 US fruit and vegetable consumption programs concluded that only a multifaceted approach that integrates government, industry and community across all ages would be successful in increasing intakes (Thomson, 2011).

Proposition 6: There is much goodwill among stakeholders to collaborate on addressing this national crisis

- Consultation conducted for this project indicated a strong willingness to collaborate amongst stakeholders from both industry and the health sector (McKINNA *et al*, 2020).
- Consultation with the vegetable industry for a study on implementing a marketing levy indicated an almost unanimous willingness to endorse a collaborative marketing program (McKINNA *et al*, 2018).
- Supporters of the Fruit & Vegetable Consortium include over 130 organisations across both health and industry domains and the 12 founding members have made substantial financial and in-kind contributions to the project, indicating a deep commitment to the initiative (Fruit & Vegetable Consortium, 2020).
- Government can play an important role in facilitating collaboration between all players in the food system (Morgan, 2009).



Part B: Governance, management & funding model

1. Governance model

It is proposed that a collaborative effort to increase vegetable consumption is operated and branded under a separate entity to the Fruit & Vegetable Consortium, based on the view that the Consortium has a broader agenda than vegetable consumption alone and that the company needs to be commercially focused to succeed, reflecting the needs of the funding partners, but without compromising the principles of the broader stakeholder group.

The proposed entity structure (subject to advice from legal and financial advisers) is a not-for-profit Company Limited by Guarantee as registered under the Corporations Act 2001. The working title is the 'Vegetable Collaboration Company'. The shareholders of this entity would be its founding and contributing member organisations.

2. Mission

The mission of The Vegetable Collaboration Company is to bring together parties from the health sector, government, NGOs and the vegetable supply chain to collaborate in order to deliver:

1. Reduced chronic disease and generally improved long-term health outcomes for Australians through increasing consumption of vegetables.
2. Reduced national health costs through the preventative health benefits associated with increased vegetable consumption.
3. Economic benefits to all parties in the supply chain but particularly to regional farming communities engaged in vegetable production.
4. Environmental benefits to all Australians and the planet.

3. Operational objectives

1. To inspire increased daily consumption of vegetables by Australians through building the level of consumer engagement, confidence and eating enjoyment of vegetables using the behavioural change / marketing program.
2. To integrate and reinforce the messaging already in the marketplace about the nutritional qualities, quality and integrity of Australian grown vegetables.
3. To take a leadership role in leveraging the collective directions and activities of the various other stakeholder groups with the common goal of increasing national vegetable consumption. (This would include collaborating with existing programs like VegKIT).
4. To engage with retailers to gain maximum impact and product pull through from the behavioural change / marketing program at the point of sale.



5. To improve the accessibility and convenience of vegetables for consumers by strategic R&D investment in new product formats and improved packaging and labelling.
6. To identify and develop programs to offer more vegetable options in food service outlets.

4. Organisational structure

It is proposed to administer the Vegetable Collaboration Company through the following three bodies:

1. A skills-based governance board
2. A core management team supported by appropriate contractors
3. A behaviour change expert panel.

5. Funding model

A hybrid funding model is therefore proposed comprising:

- A recurring annual grant from government
- Annual corporate and supporter membership fees
- Hort Innovation funds (representing levies from all vegetable growers)
- Health industry contributions
- In-kind contributions from program partners and NGOs
- Sponsorships
- Philanthropy
- Self-generating revenue from operations such as licensing fees or web advertising.

The potential reduction in national health costs from this program present a compelling argument for the Commonwealth Government to contribute seed funding for its establishment and development.



FUNDING SOURCE	ANNUAL TARGET
Government grants (Federal & State)	\$15 million
Membership fees	\$1 million
Hort innovation (including grower levies)	\$1 million
Health insurance companies	\$2 million
In-kind contributions from program partners	\$10 million
Sponsorships	\$1 million
On-line revenue	(longer term)
Total	\$30 million

An annual funding target of \$30 million per year is proposed, within the first three years of the program.

Part C: The behavioural change strategy

It is proposed to implement a holistic behavioural change program employing both traditional marketing techniques as well as a range of interventions. This behaviour change program will essentially stitch together the collective efforts of multiple interested parties around a common framework. In this case, the various interventions will be linked by a common umbrella brand (e.g. an active brand such as the Slip Slop Slap or Quit brands), supported by an advertising campaign. It is intended that the interventions would be able to embrace many of the current activities of the program partners.

The behavioural change model proposed is evidence based and has been successfully employed in an Australian context for such diverse programs such as safety at work and women's fitness.

The recommendation for a behaviour change/marketing strategy rather than a marketing program alone, is that there are a range of factors constraining vegetable consumption, which vary across different cohorts and meal occasions, therefore, a wide range of targeted and nuanced interventions is required beyond advertising alone. Although advertising can be targeted to some degree, it is essentially 'broad brush', focusing on just one touch point with a 'one size fits all' messaging. A behavioral issue such as vegetable consumption needs to be far more nuanced in its approach, with distinctly different interventions for each consumer segment that infiltrate their various meal and snack occasions. Furthermore, the strategy needs to evolve over the years to reflect the changing dynamic as behaviors begin to shift.

The behavioural change strategy is proposed to be constructed around a segmentation model that groups consumers into sets, based on their consumption, behaviours and motivations regarding vegetables. The segmentation model has been purpose built for an Australian context, specific to



vegetable consumption. It is based on the authors' many years of extensive qualitative and quantitative research with vegetable consumers and the intent is that it would be validated by further research and modified as the project evolves.

The central thrust of the behavioural change strategy is to educate, inform, inspire and empower Australians to consistently have positive eating experiences with vegetables with a secondary message that quietly points out the underpinning health and nutrition. This approach is based on a body of research that indicates that health and nutrition messaging alone has not been successful in driving a sustainable increase in consumption in past campaigns.

This program represents a 'once in a generation' opportunity to positively influence the course of Australia's future. The consultation undertaken in preparing this document indicated a high level of willingness across all stakeholders to collaborate for the greater national good and that a win/win outcome is possible. However, this collaboration brings together parties with diverse interests and motivations so it will require compromise and goodwill to ensure the opportunity is captured for the benefit of future Australians.



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Table of contents

Business case & blueprint summary.....	3
Acknowledgements	11
Foreword	13
Introduction	14
PART A: The business case	
Core propositions of the business case.....	17
PART B: Governance, management & funding model	
Section 1 Organisational purpose.....	66
Section 2 Operations and governance.....	70
Section 3 Funding	79
Section 4 Development & implementation.....	86
PART C: The behavioural change strategy	
Section 1 Why a behavioural change strategy?	91
Section 2 The proposed behaviour change model	95
Section 3 Application of the model.....	98
Section 4 Australian vegetable consumer segmentation model	104
Section 5 Strategic targeting of segments	113
Section 6 Behavioural trigger points	115
Section 7 Behaviour change interventions.....	117
Section 8 Intervention partnerships.....	135
Section 9 Branding strategy	140
References	162



Foreword

This report has been initiated and funded by The Fruit & Vegetable Consortium, which represents a number of organisations around Australia who share a mutual interest in driving increased vegetable consumption, especially across the lowest consuming and most vulnerable Australian cohorts.

Coinciding with this initiative, a project commissioned for the Australian vegetable industry peak body, AUSVEG (managed by Hort Innovation) assessed the business case for the introduction of a vegetable industry marketing levy to potentially fund a national advertising campaign promoting vegetable consumption (McKINNA *et al*, 2018). This industry-funded project recommended inviting a wider stakeholder group to be involved in any initiative to promote vegetables and that a comprehensive behavioural change program would be more effective than a traditional marketing campaign such as those used by single commodity horticultural industries (e.g. avocados and bananas).

About The Fruit & Vegetable Consortium



The Consortium was formed under the administrative lead of Nutrition Australia to organise a collective response to Australia's low consumption of fruit and vegetables. The founders recognised that a 'fresh approach' to increasing fruit & vegetable consumption was most urgently required and that a sustained, collaborative, long-term national plan was critical. Vegetable consumption is considered the priority cause given that it is significantly lower than fruit intake.

The Consortium's founding members include Nutrition Australia, Heart Foundation, AUSVEG, Melbourne Market Authority, VicHealth, Cancer Council Victoria, Deakin University (IPAN)), CSIRO, PMA, Stephanie Alexander's Kitchen Garden, Health & Wellbeing Queensland and The Good Foundation. It now has over 123 national supporters spanning all sectors of health and tiers of government.



Introduction

This document outlines the business case to attract investment and material support from interested industry, health and government stakeholders to establish a collaborative behavioural change program aimed at increasing consumption of vegetables in Australia. The document is effectively a blueprint for guiding the following subsequent outputs:

1. Preparation of summary pitch documents and presentations (**target audience:** potential program partners)
2. An evidence base to confirm the national importance of the project to government (**target audience:** health department officers)
3. A brief to inform development of the behavioural change marketing and intervention tools to be used in the program, based on the research reviewed (**target audience:** creative agencies, other suppliers and program partners)
4. Development of an operating charter and other governance documents (**target audience:** future directors and executive officers).

The motivation for this initiative is to improve health and social outcomes, reduce national health costs, as well as generate economic activity that flows through to vegetable production regions of Australia.

The report is structured into three parts:

Part A: The business case

Part B: The funding and governance model

Part C: The behavioural change strategy

Objectives

This report aims to collate and present the supporting evidence for investment and the information required to develop a 'shovel ready' national behavioural change strategy to increase vegetable consumption in Australia.

Methodology

The steps involved in preparing this business case included:

1. A stage of stakeholder engagement with representatives from three main stakeholder groups (businesses, health organisations and government) which has been reported separately.
2. Participation in an ideation think tank/ workshop with a cross-section of stakeholders.



3. Development of behavioural change strategy with behavioural change experts The Shannon Company and input from Monash University's behavioural change research body BehaviourWorks.
4. A review of recent literature including the detail of the independent economic analysis undertaken previously by Deloitte Access Economics on associated projects.
5. Development of the funding and governance model.
6. Reporting and communication.

Throughout the project, a working group with representation from Nutrition Australia, AUSVEG, CSIRO, Deakin University and Vic Health has provided oversight of the process contributing valuable input at critical milestones.



Part A: The business case



Core propositions of the business case

The business case for collective investment in a national behavioural change program to drive vegetable consumption is based around six core propositions:

- | | |
|-----------------------|---|
| Proposition 1: | The vast majority of Australians are not eating the recommended serves of vegetables |
| Proposition 2: | Low vegetable consumption is causing poor public health outcomes and escalating the health cost burden |
| Proposition 3: | Attempts to lift vegetable consumption in Australia have not improved the national position |
| Proposition 4: | The economic, social and environmental payback from investing to lift vegetable consumption is compelling |
| Proposition 5: | Pooled resources would more effectively deliver the scale of shift that is now required |
| Proposition 6: | There is much goodwill among stakeholders to collaborate on addressing this national crisis |

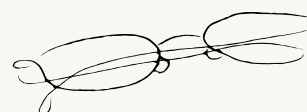
These propositions are prosecuted in the following pages with supporting evidence.



Proposition 1: The vast majority of Australians are not eating the recommended serves of vegetables

Evidence base:

- The NHMRC Australian Dietary Guidelines recommend at least five standard serves of vegetables per day should be consumed for good health (NHMRC, 2013). The 2017-18 National Health Survey (ABS 2018) records that only 7.5% of Australian adults and 6.3% of children reported consuming the recommended serves.
- In 2017/18, on average, men aged 18 years and over, consumed 2.3 serves of vegetables each day and women consumed 2.5 serves. School aged children and teenagers in particular, under-consume vegetables (ABS, 2018) and 18 to 24 year olds are the lowest consuming cohort within adults.
- Total vegetable consumption (fresh and processed) has been steadily declining at 1.1% p.a. (5 year CAGR), suggesting that Australians today consume 13 kilos per year less vegetables per capita than they did in 2001 (see following analysis).
- It is estimated that only 55% of vegetables produced are actually consumed due to losses in the supply chain and wastage in the home (McKINNA *et al*, 2018).
- The factors contributing to the under-consumption of vegetables are diverse, each requiring specific interventions to address (McKINNA *et al*, 2018).



Current consumption levels

At great risk to the national health, Australians are not consuming the recommended daily serves of vegetables (ABS 2018). The NHMRC dietary guidelines recommends at least five serves per day of vegetables for good health (and up to six serves for men of working age groups). One standard daily serve of vegetables is around 75 grams (100 to 350 kj) and equates to each of the following serves:

- ½ cup cooked green or orange vegetables (e.g. broccoli, spinach, carrots or pumpkin).
- ½ cup cooked dried or canned beans, peas or lentils.
- 1 cup green leafy or raw salad vegetables.



- 1 medium tomato.

The Australian definition of vegetables has been used in this business case and in the analysis as it aligns with the data used in the modelling. Unlike other international definitions, the Australian definition includes all starchy vegetables (including potatoes) as well as legumes. However, it is proposed to focus on healthy fresh and processed vegetables and not legumes specifically in this program.

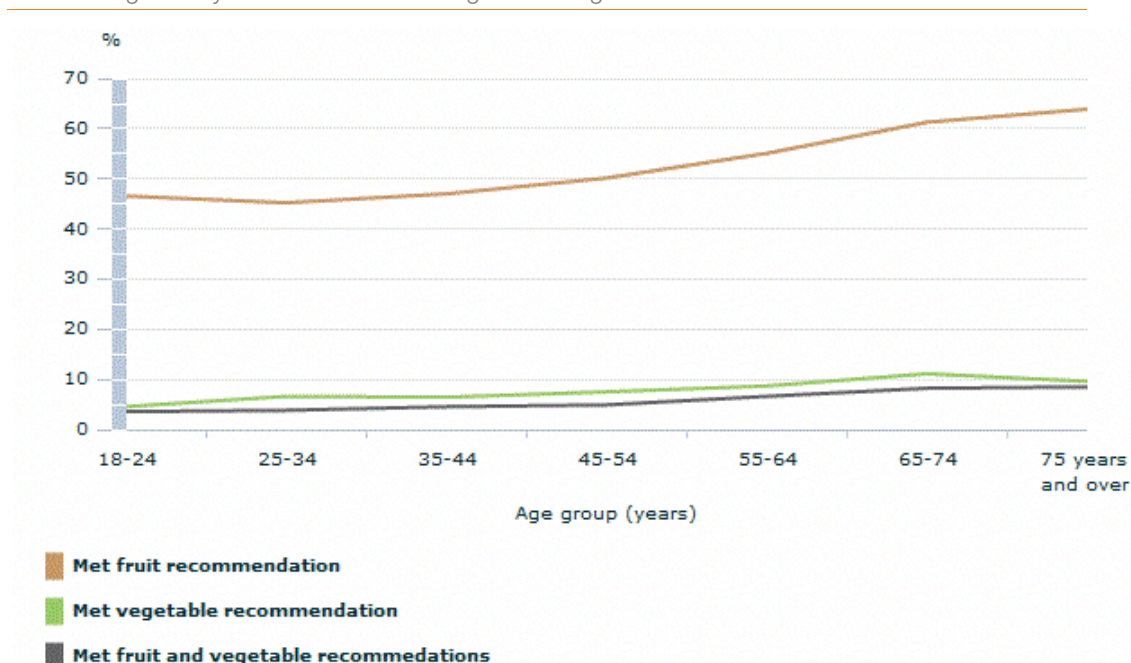
Australia's 2017/18 National Health survey (ABS 2018) indicated that only 7.5% of Australian adults and 6.3% of children consume the recommended daily serves of vegetables. Men aged 18 years and over consumed 2.3 serves of vegetables each day and women consumed an average of 2.5 serves. Fruit consumption is also lower than the recommended guidelines but more than 50% of adults and more than 73% of children do consume the recommended serves of fruit, making this issue less concerning.

Vegetable consumption has some correlation to gender, age and residential location to varying extents with lower consumption evident in males, particularly those under 54 years of age compared to women and many older Australians. The National Health Survey indicates that adults living in major cities were likely to eat less vegetables than those living in regional and remote areas. School aged children, teenagers and 18 to 24 year old adults are also lower consuming cohorts. The National Health Survey does not provide an indication of socio-economic associations with vegetable consumption but Deakin University researchers (Livingston, 2020) notes that intake does differ by population groups. There is some debate in academic circles about the impact of socio-economic factors on vegetable consumption with a Queensland Government study suggesting there were few differences (Health & Wellbeing Queensland direct feedback) and a Victorian study (Livingstone, 2020) indicating that those with higher area-level disadvantage did eat less vegetables than other cohorts, but this difference appeared to be marginal.

In terms of the regional differences, The National Health Survey suggests that Australians living in inner regional and outer regional areas and remote parts of Australia were more likely to be overweight or obese than those living in major cities with AIHW reporting the proportion of the population who are obese being 61% in major cities is 67% in inner regional areas and 68% in outer regional and remote areas.



Persons aged 18 years and over meeting fruit & vegetable intakes 2017-18



Source: ABS National Health Survey 2017-18

Although the ABS 2017/18 reporting suggests that the intake rates “*have remained fairly consistent over time*”, the parameters of the National Health Survey data collection have changed between surveys, and the self-assessment/interview survey methodology has some inherent propensity for error because most consumers over report their vegetable consumption. Most notably, vegetable consumption varies throughout the year in line with seasons so the results may be biased by the time of year that the study was conducted. Furthermore, the ABS survey is only conducted every few years, so linear trends are difficult to monitor.

Independent analysis undertaken specifically for this business case was able to give a clearer assessment of longitudinal trends. The analysis indicates that per capita consumption of vegetables has been in gradual long term decline in Australia. The data presented in the following pages has been calculated from ABS time series vegetable production data, starting with Australian vegetable production measures, adding imports, subtracting exports and dividing by the population. An allowance for wastage has been factored because the ABS production data captures total farm production of vegetables and wastage occurs at all points in both the supply chain and the consumption journey including pack house trimmings, out of retailer specification reject product, damaged product, wastage in transit, shelf life expiry and damage in retail or food service outlets as well as product (including seed, peel and trimmings not normally eaten) that is thrown out by consumers in the home. It has been previously estimated by Fresh Intelligence Consulting (McKINNA *et al* 2018) that only 55% of the tonnage of vegetables produced are actually consumed. The specific proportion of vegetable wastage lost at each point in the supply chain and in the home/restaurant is not known. A study commissioned by the Fresh Produce Alliance on (Lockrey *et al*, 2019) on the role of packaging in fresh produce, notes this lack of data in Australia and in its recommendations, highlights the need to



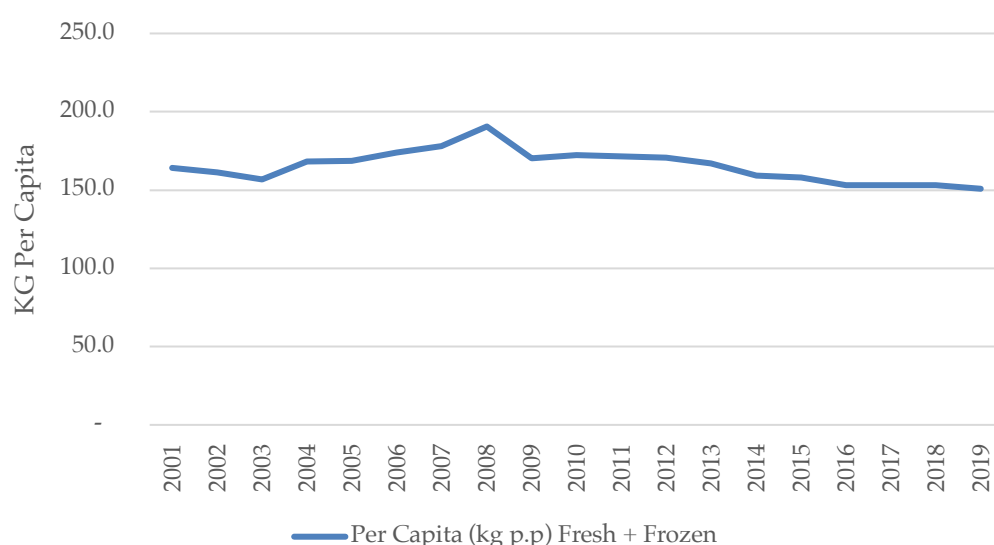
invest in future research to obtain greater clarity on where wastage occurs in the Australian fresh food system.

When that wastage as calculated for this study is factored, the current estimates of per capita consumption presented in this business case align broadly with those in the ABS National Health Survey. The analysis in this business case estimates that in 2019, Australians consumed an average of 87 kilos of all vegetables (processed and fresh) per capita. This volume equates to 240 grams per day, which represents 3.2 x 75 gram serves. Per capita consumption of fresh vegetables only was 64 kilos per annum which equates to 177 grams per day or 2.3 x 75 gram serves, the same figure as for Australian adult males in the National Health survey. It should be noted that the analysis here does not include canned or dried legumes. It is assumed processed legumes are included in the National Health Survey data because they are in the five serves per day recommendations, so this presents a significant inconsistency between the two data sets.

The data presented in the following tables includes all forms of vegetables: fresh frozen, dry and canned (excluding canned tomatoes and canned and dried legumes, but including potatoes) and covers both in-home and away-from-home consumption.

The most relevant indicator in this analysis is the trend line. Because the data has been calculated using the annual ABS vegetable production data, which uses the same collection methodology each year, there is a high level of confidence that the trend line provides a reliable estimate.

Total vegetable consumption per capita trend in Australia (fresh & frozen vegetables)



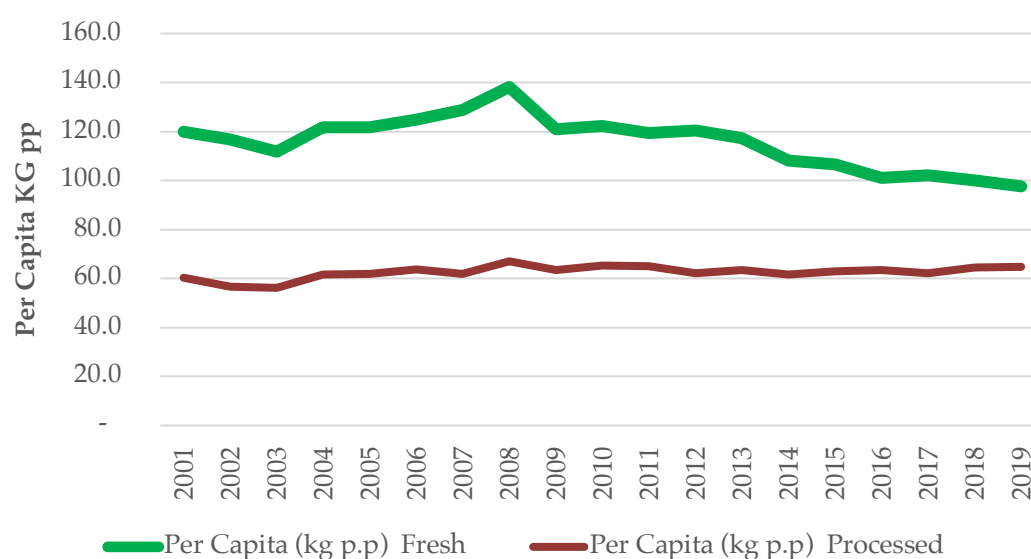
Source: ABS, ITC Trademap, HIA Statistics handbook; Fresh Intelligence analysis

The key finding here is that per capita consumption of fresh and processed vegetables (excluding canned tomatoes and processed legumes, but including potatoes) in Australia is declining at an average of 1.1% per annum (moving 5



year CAGR). That would suggest that in 2019, Australians consumed 13 kilos per year less vegetables per capita than they did in 2001.

Per capita vegetable consumption in Australia by format

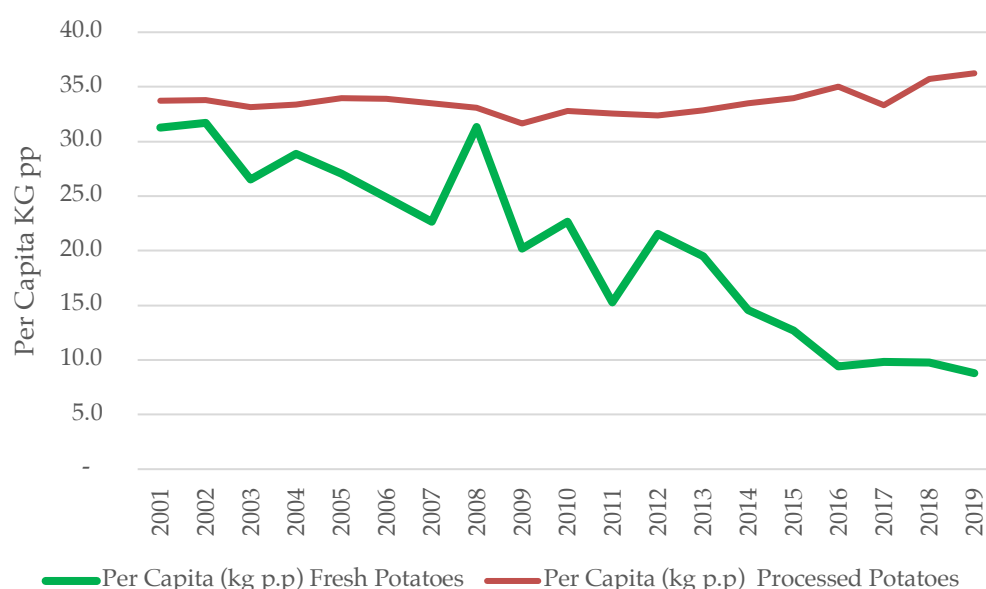


Source: ABS, ITC Trademap, HIA Statistics handbook; Fresh Intelligence analysis

Fresh vegetable consumption is declining at 2.2 % per annum CAGR while processed vegetable consumption is partially offsetting this with a 0.9% increase in consumption. Alarming, the increase in consumption of processed vegetables is largely due to increases in processed potato. Fresh vegetables accounted for 65% of all vegetables consumed and processed forms of all types (excluding canned and dried legumes) accounted for 35% of intake.



Potato - per capita consumption fresh & processed

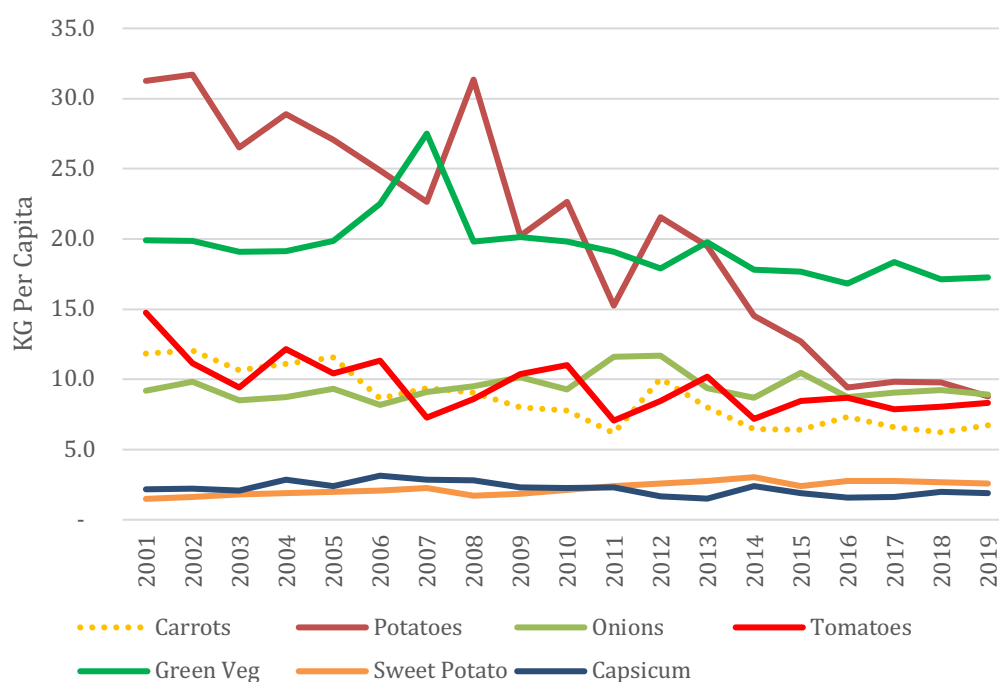


Source: ABS, ITC Trademap, HIA Statistics handbook; Fresh Intelligence analysis

It is a concerning trend from a nutritional perspective, that most of the consumption growth in processed vegetable forms has been in processed potatoes, which are predominantly French fries and potato crisps. It must be reiterated here that potatoes are not included in the Australian definition of vegetables. Per capita consumption of fresh potatoes has been declining at an average compound rate 8.8% per annum (although this is now starting to flatten), while processed are growing at 1.7% compound. It can be assumed that this trend is partly attributable to an increase in away-from-home meal consumption because it is known that 70% of the French fries produced in Australia are sold to food service outlets and the market share is heavily weighted to quick service restaurants. Australians consume on average 36 kg of processed potatoes per year compared to 9 kg of fresh potatoes.



Per capita fresh vegetable consumption by variety



Source: ABS, ITC Trademap, HIA Statistics handbook; Fresh Intelligence analysis

Within the mix of total fresh vegetable consumption, there are some interesting trends. Notably, the only categories to show any growth were carrots (1.2%), sweet potatoes (1.7%) and capsicum (0.3%). The green vegetable category, which includes peas, beans, lettuce and leafy greens, is declining at a rate of 0.5%. Onion consumption is declining at an average annual CAGR of 3.9%. Fresh tomato consumption is relatively flat.

While all fresh vegetable categories are either flat or mostly trending downwards, fresh potatoes in particular have declined more than the average, suggesting changing cuisine trends including some adoption of lower carb diets, substitution for more grain, pasta, rice and noodle meals and less consumption of traditional 'meat and potato' dishes.



Major barriers to increased consumption of vegetables

Over recent years, there has been a vast amount of research conducted to better understand the reasons for declining vegetable consumption, both in Australia and globally. A detailed scan of the various Australian and global studies as well as the many literature reviews in Hort Innovation projects (McKINNA *et al*, 2018, documents listed separately in appendix), summarised the major barriers to increased consumption of vegetables. Some key points drawn from this scan and insights from the many years of qualitative research with grocery buyers undertaken by the authors follow.

It is important to note that almost all of these blockers also present multiple opportunities to trigger change and to drive increased consumption of vegetables.

1. Lack of knowledge about vegetables

While most people understand the importance of consuming vegetables, many years of qualitative research with vegetable buyers by McKINNA *et al* indicates that a high percentage of consumers lack the knowledge, confidence and skills required to select vegetables for fitness of use, prepare, store and serve them to produce an enjoyable eating experience. This assertion is also confirmed in multiple studies for Hort Innovation (as cited in McKINNA *et al*, 2018). For example, most consumers do not understand the seasonal patterns let alone the vegetable varieties and their eating characteristics or fitness for purpose (i.e. which tomatoes for salad versus sauce, or which potatoes for roasting versus mashing or boiling).

Poor vegetable eating experiences in childhood, tend to carry through to lifetime habits and perceptions, therefore, a lack of knowledge of vegetables and how to prepare them, risks being perpetuated through families resulting in a generational legacy of poor eating and health.

2. Vegetables lack the appetite appeal and satiety factor of other foods

A commonly stated blocker to consumption in consumer focus group discussions is that vegetables do not offer the appetite appeal of other foods, particularly those high in salt and sugar. While the term 'appetite appeal' is commonly used by food marketers, nutritionists may understand this as 'sensory acceptance' or 'palatability'. Essentially, it refers to the desire to eat something. This belief is regularly attributed to children, young men and teenagers in particular, who feel that vegetables are not enjoyable to eat and that they do not "fill me up". Often the lack of eating enjoyment is simply due to the fact that food preparers (both in the home and food service) do not have the skill nor inspiration to create vegetable dishes that are delicious.

Relative to high-value foods such as meat, fish and cheese, vegetables tend to be a low involvement, almost semi-automatic reflex purchase. Commonly, households become habitual in vegetable consumption behaviours, buying the same vegetables each week and serving them in the same way, which can make household members become bored with them. The typical household vegetable repertoire is narrow. A recent in-depth consumer study commissioned by the



Fresh Produce Alliance (Goldring, 2019) reported a persistent perception from Australian households that “*vegetables can be boring*” and one of the most reported barriers to consumption was the lack of meal inspiration. This study also aligned with other research reviewed in observing that consumers default to a meal rotation of favourite dishes with the same vegetables each time.

Appetite appeal is a particular barrier to vegetable consumption for many children and teenagers. Commonly children go through a stage where they will not eat a particular vegetable and this mindset often becomes entrenched for a lifetime. The VegKIT program works to address the fact that vegetables do not have innately liked sensory characteristics (sweet, salty, fatty). However, children can learn to like them. Sensory acceptance needs to be learned early in life and can be sustained throughout a lifetime.

The market research reviewed also suggests that some consumers, predominantly younger males, feel that vegetables do not satisfy hunger to the same degree as carbohydrate rich foods. For quick solutions to hunger, calorie dense, fast, snack and convenience foods are first and easy choice.

3. Vegetables are sidelined in meal planning

Meal planning is traditionally based around the protein with vegetables almost an incidental, secondary decision factor. While traditionally the protein was the centre of plate item, with the rising cost of meat and fish and international food influences now being part of Australian culture (e.g. Asian dishes, pasta, curries, shared platters, etc.), the protein portion of the plate is declining. This is also the case in foodservice where the rising cost of protein is driving the trend. Vegetable choice is usually dictated by what is on hand or what the household usually prepares with that dish (e.g. sausages go with mash and peas). Part of the reason that vegetables are an afterthought in meal planning is the poor appreciation of flavour combinations and lack of skill in matching vegetable side dishes with the protein choice or cooking style.

A lack of meal planning was cited in the Fresh Produce Alliance consumer research on fresh food wastage (Goldring, 2019) as being a key factor in the wastage of vegetables in the home.

For families, meal choice is heavily based around foods that the whole family will eat and enjoy with a tendency to avoid foods that one or more family members dislike in order to minimise friction. Certain vegetables commonly fall into the category of foods that are avoided because they cause disruption at mealtimes (e.g. Brussels Sprouts).

4. Vegetables lack the convenience factor required for our busy lifestyles

With the pressures of contemporary life, households are seeking products that are convenient to prepare and serve. One of the common barriers to cooking vegetables is that they are perceived to be time-consuming to wash, peel, chop and cook and involve several dishes or plates and more washing up. For this reason, there has been a strong growth in convenience foods including pan-ready, ‘heat and serve’ meals or meal components.



Increasingly, retailers are offering semi-prepared vegetables (referred to in the industry as 'fresh cuts'), which is likely to stimulate increased vegetable usage. However, these products typically come at a significantly higher price, which can make them unaffordable to lower income households and they do tend to spoil more quickly contributing to high wastage associated with vegetables as well as losing some of their nutrient content once oxidation begins.

Home delivered meal kits plans are also growing in popularity, albeit from a niche base. They typically include semi-prepared, portioned ingredients including the garnishings and cooking instructions. Most of these meal kit providers do advertise that their menus are designed for healthy eating and some are specifically developed for preferences such as weight reduction or vegetarianism. These meal kits may be having a positive impact on vegetable consumption to some extent, because they are providing convenience inspiration, flavour, recipe ideas and may be replacing fast foods that have a low vegetable content. They are however cost prohibitive for most families and as such, likely to remain a niche market.

The rise in availability of supermarket ready-meals has increased meal solution options, particularly for smaller or single person households. Unfortunately, many of these ready-meals do not have a lot of fresh vegetables in them. Recognising this issue, Woolworths recently promoted the fact that it has made a point of investing in recipe development to increase the percentage of vegetables in their home brand ready-meals and meal components (e.g. vegetables in prepared beef burgers).

5. Vegetables are perceived to be expensive

Vegetables are perceived by many to be expensive relative to other foods, despite the fact that in most cases, they are substantially cheaper per kilo than protein, particularly red meat, which has dramatically increased in price due to rising global demand. The factors underlying these perceptions may be preventable, including high home wastage of vegetables through poor purchasing or storing and not understanding seasonal pricing patterns. Many shoppers expect the price of vegetables to be the same year round. Both of these factors can be addressed through strategic interventions.

The relative affordability of vegetables will continue to improve as the price of proteins rises as forecast and the vegetable industry continues to improve productivity and efficiency. The rising cost of protein provides the opportunity to highlight messaging around increasing the share of vegetables on the plate. With good knowledge, vegetables are a highly cost effective way to feed a family well, so the perception of them being expensive is dangerous misinformation.

6. Vegetables involve a large amount of wastage

To some extent, the perception that vegetables are expensive comes from the experience that there is a large amount of wastage in spoilage, peelings and trimmings, which means that only a portion of the purchased volume is actually consumed. More importantly, consumers often throw out vegetables that they believe are no longer fresh rather than repurposing them for soups, stews, curries



or other dishes. This may be because they do not have the skills or time to do this, but could also be because they do not have the cooking knowledge to imagine other uses besides a side dish to a main meal. The Fresh Produce Alliance in-home study on food wastage (Goldring, 2019) noted that consumers clearly do not know how to best store vegetables to avoid waste. This study also confirmed that wastage also stems from the inability to buy portion sizes appropriate to the household needs. This factor is also a blocker to purchasing items like whole cauliflower or cabbage, especially in single and two person households, which are the largest household size cohort in Australia. Supermarkets and vegetable processors are working to address this issue through moving to more single serve packaging (e.g. fresh cuts or microwave single serves of frozen vegetables, bagged salad mix rather than a whole lettuce), but this adds to cost and can reduce the life of the product in some instances.

A high percentage of vegetables are also wasted in the supply chain due to the very high standards imposed by supermarkets with very precise specifications and low tolerance levels in terms of deviation in size, shape and level of blemish.

7. Lack of understanding of the seasonality of vegetables

A contributing factor to the poor experience that many consumers have with vegetables is related to the fact that the majority of consumers do not understand the seasonality of vegetables and its impact on availability, quality, eating characteristics and cost.

Most vegetables have natural seasonal cycles with a peak supply season where pricing typically drops substantially. Most vegetables are at their best and cheapest in their peak season. Consumers have fallen into the habit of expecting to be able to buy all vegetable varieties all year round, which to some extent is possible due to the geographic diversity of Australia, the adoption of protected cropping systems and breeding programs that have extended seasons of many varieties. Nevertheless, this lack of knowledge detracts from the overall experience; buying vegetables in their peak season typically delivers a better eating experience at a substantially lower price.

8. Poor knowledge of the specific nutrient attributes and health benefits of individual vegetable categories.

There is a high level of general awareness that vegetables are highly nutritious and healthy and that Australians should eat more of them, but there is limited understanding of the specific nutrient benefits of specific vegetable varieties. A proportion of consumers are seeking more detailed nutritional information about the foods they buy and now scrutinise labels on packaged foods to seek out the elements they are looking for (e.g. antioxidants) or trying to avoid (e.g. oligosaccharides from onion or garlic). Unfortunately, this information is not as readily presented on vegetables because most are sold loose and unlabeled. There are also strict regulations around packaging claims which require rigorous clinical trials to make health claims, which is problematic for vegetables as the nutritional content of each crop can vary greatly. As a result, any claims must be kept to a very general level, which lacks impact.



The rise of diets like FODMAP which restrict certain types of foods including certain types of vegetables to assist those with allergies and digestive issues, suggests that access to more information about specific health benefits may be one of the supporting factors underpinning vegetable choice. Actively promoting these benefits (e.g. lycopene in tomatoes for prostate health) as a secondary message to the eating enjoyment of vegetables, may remind consumers of the benefits of vegetables. When blueberries were promoted as a superfood in Australia it had a 'game changing' impact on category growth. Qualitative research by McKINNA *et al* for the Victorian Government's Vital Vegetables project some years ago indicated a strong consumer willingness to pay a premium for vegetables with enhanced functionality, but this does not apply to all consumer segments. There is also a lot of message clutter and confusion about the functional benefits of individual vegetables.

9. Strong marketing by snack and convenience food sector

The battle for the food dollar is fiercely competitive with packaged food companies employing sophisticated, highly researched marketing strategies backed by very large budgets. Food marketers have learnt the skill of infiltrating the meal planning space, offering convenient and appealing meal solutions at affordable prices. Packaged foods generally deliver higher profit margins which can finance multi-million-dollar marketing budgets.

This situation is even more pronounced in the fast food and snack food sector where large multinational brands target younger cohorts with low-cost meal packages and omnipresent snack options focused on strong taste appeal.

The marketing activities and budgets of the vegetable industry pale into insignificance relative to those of packaged, convenience and fast food companies. By comparison with the processed food industry, the fresh vegetable industry is highly fragmented and the profit margins insufficient to mount a high visibility marketing program at a business level (but this could be possible at an industry level). Because brands are not strong in vegetables, there is little incentive for businesses to invest in marketing.

10. Growth in away-from-home dining

Over the past 20 years there has been steady growth in away-from-home dining. The food service market is estimated to account for 40% of food expenditure and this share is growing.

In the past two years, home delivered meals have also grown 'share of stomach' for food that is prepared outside the home, a trend which gained momentum with Uber Eats and other platforms then accelerated with the onset of the COVID 19 pandemic. The adoption of home meal delivery is a behaviour which food analysts expect will continue now that there are many apps facilitating this and increased incidents of ghost commercial kitchens set up specifically to service these orders. Commonly the vegetable content of these home delivered convenience meals tends to be lower because of the focus on calorie dense, comfort foods such as pasta, burgers, noodle and rice based dishes. On the positive side, the food service sector could present a very powerful platform for



growing in-home consumption of vegetables. In-home meal choice is heavily influenced and inspired by what consumers have enjoyed when eating out – these are generally dishes that they do not feel comfortable making themselves from scratch.

The Australian restaurant scene embraces an eclectic melting pot of cuisines from many cultures and fusions, each of which prepares vegetables in its own way. The traditional ‘meat and three veg’ plate that dominated the restaurant offering is in decline. Shared plates, Asian style communal dishes, tapas and mezze or tasting platters are now the new normal and they offer the opportunity for introducing consumers to more variety in vegetables and inspiring serving ideas.

There is an increasing trend in premium restaurants of featuring vegetables as signature menu items both as side dishes and main meals. Some restaurants now report that their signature vegetable dish is the top seller and can be the most profitable. Vegetarian restaurants are becoming popular, even with meat lovers because of the interesting options. The opportunity exists to transfer these positive experiences into the home by inspiring and educating homemakers and bringing vegetables front and centre in the meal planning process.

The improved standard of meals in food service across Australia is impacting the rise in away-from-home dining. Because consumers are not skilled in producing delicious meals themselves at home, the takeaway restaurant and home delivered options are so much more appealing.

11. There is a perception by some that the target of 5 serves per day of vegetables is unachievable

The five serves per day measure of vegetable consumption was promoted heavily in 2009 when the Go for 2&5 campaign developed by the Government of Western Australia was run nationally for a period of around 9 months by Hort Innovation with Australian Government funding. The campaign also ran in Queensland from 2005 to 2009. The messaging did appear to be effective in reinforcing this goal and lifting overall consumption for the period of the campaign. A number of studies reviewing this campaign and others (as reviewed in McKINNA *et al*, 2018) indicated that many consumers perceive this target of five serves to be too difficult a goal to aim for and they had difficulty in estimating what 75 grams of each type of vegetable might look like and how they would portion it for family members. As recently as 2020, a Deakin University qualitative study (Livingstone 2020) in Victoria suggested that respondents thought it would be difficult to physically eat that many vegetables.

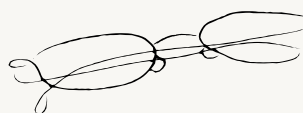
The possibility exists that because the goal of five serves per day is perceived as being too difficult, consumers ‘tune out’ to the message.



Proposition 2: Low vegetable consumption is causing poor public health outcomes and escalating the health cost burden

Evidence base:

- Vegetables are vital for good health and inadequate consumption can have serious health consequences from pregnancy to end of life (Duthie *et al*, 2018)
- Overweight and obesity are linked to chronic diseases, the leading cause of ill health and death in Australia (AIHW 2016). Australia was identified as the fifth most obese country in the OECD (OECD, 2017). More than 66% of Australian adults are either overweight or obese (National Health Survey 2017-18).
- Eating adequate vegetables has a direct linkage to maintaining a healthy weight (Schlesinger, 2019 and Nour, 2018).
- Many studies show that a diet rich in a range of vegetables is a critical part of preventative health, reducing the risk of high blood pressure, heart disease, some cancers, eye and digestive problems (Harvard School of Public Health, 2020)
- The disease burden could be cut by 14% if Australians who are overweight or obese maintained a weight loss of 3kg (AIHW, 2018)



Vegetables are vital for good health

It is widely accepted that fresh and processed vegetables contribute to good health in the following ways:

- Replacing unhealthy, energy-dense foods in the diet with nutrient dense foods.
- Providing nutrients that are absolutely vital for good health such as potassium, folate, vitamin A and vitamin C.
- Providing phytonutrients and antioxidants that improve immunity and disease resistance.
- Providing fibre to ensure a healthy digestive system and effective bowel function as well as improved nutrient absorption and satiety.
- Contributing to cognitive health.



The Australian Dietary Guidelines (NHMRC) document lists the following evidence statements for consuming 'plenty of vegetables':

- Consumption of each additional daily serve of vegetables is associated with a reduced risk of coronary heart disease.
- Consumption of vegetables is associated with reduced risk of stroke.
- Consumption of vegetables is associated with reduced risk of weight gain.
- Consumption of vegetables is associated with a reduced risk of oral and nasopharyngeal cancers.
- Consumption of preserved vegetables is also associated with a reduced risk of oral and nasopharyngeal cancers.
- Consumption of one or two serves per day of tomato is associated with a reduced risk of prostate cancer.
- Consumption of more than one serve per week of spinach is associated with reduced risk of colorectal cancer.
- Consumption of cruciferous vegetables is associated with reduced risk of lung cancers.

No single vegetable provides all of the necessary nutrients, so consuming a variety of vegetables is as important as the quantity. In the extreme, a diet low in vegetables or without them can lead to devastating health consequences such as impaired childhood development, irreversible vision impairment, depression and the spectrum of conditions associated with metabolic syndrome (Harvard School of Public Health, 2020). The risk of insufficient vegetable consumption triggering such nutritional threats is very real, even in wealthy countries like Australia (SMH, 2016).

Weight gain is impacted by more than diet. Fundamentally, it occurs if energy intake is higher than energy expenditure. The linkages between weight gain and increased consumption of vegetables is an area of considerable interest in academic research. The results of existing studies have been difficult to compare directly due to highly variable methodologies and study populations. Although there are differing opinions, there is overwhelming consensus that:

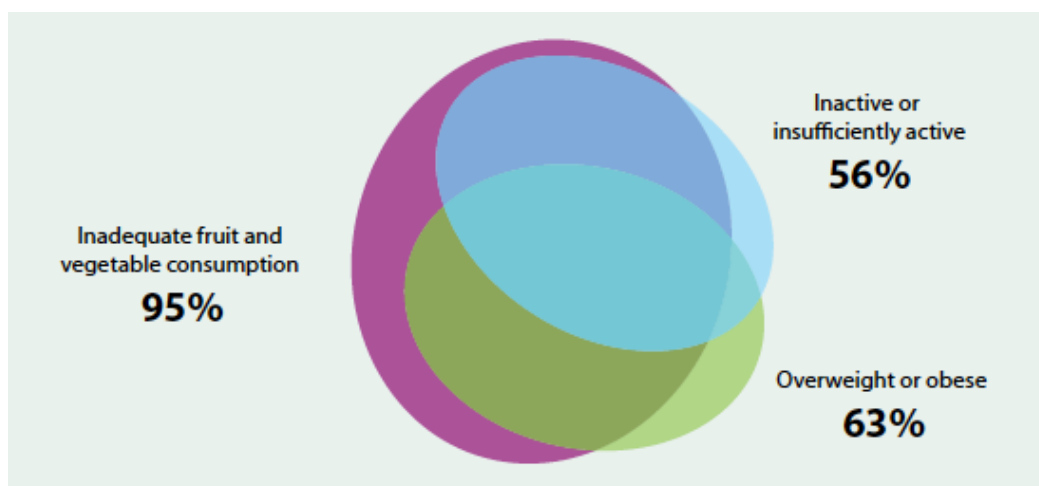
- Low vegetable consumption is linked with an increased risk of death from vascular disease and some cancers.
- Vegetables have other nutritional benefits besides energy.
- Those vegetables that are high in fibre and have a lower glycemic load are strongly associated with weight loss, whereas starchy vegetables may not be.
- There is a high degree of overlap between overweight/obesity and inadequate vegetable consumption (AIHW, 2016) and studies in obese adults frequently



show that they are eating a lower intake of vegetables than healthy adults (Dehgan *et al*, 2011).

- A diet high in vegetables is linked to a reduced risk of cumulative weight gain (Schlesinger, 2019 and Nour, 2018).
- Wang *et al* (2019) explored the association between increasing fruit and vegetable intake and genetic predisposition and risk of obesity in adults. The study identified that obesity could be mitigated by increasing fruit and vegetable intake and that the benefits were more pronounced in individuals with a genetic predisposition.

Representation of the overlap between risk factors for chronic disease (18 yrs and over)

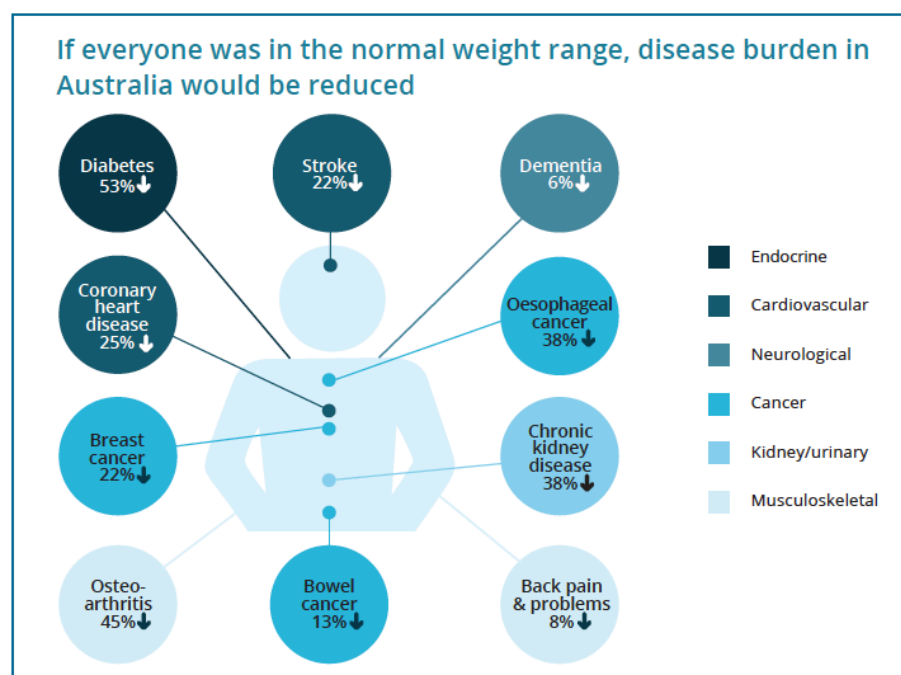


Source: AIHW, 2016

Since the publishing of the above schematic, the obesity rate of Australian adults has climbed to over 66% (AIHW, 2018). The Australian Government estimates that over one third of the disease burden is preventable (AIHW, 2015) and that followed by tobacco use, overweight and obesity were the second highest risk factor contributing to the national burden of disease followed by dietary risk factors.

The disease burden could be cut by 14% if people who are overweight or obese maintained a weight loss of 3kg (AIHW, 2018)





Source: AIHW, 2018

The national health burden

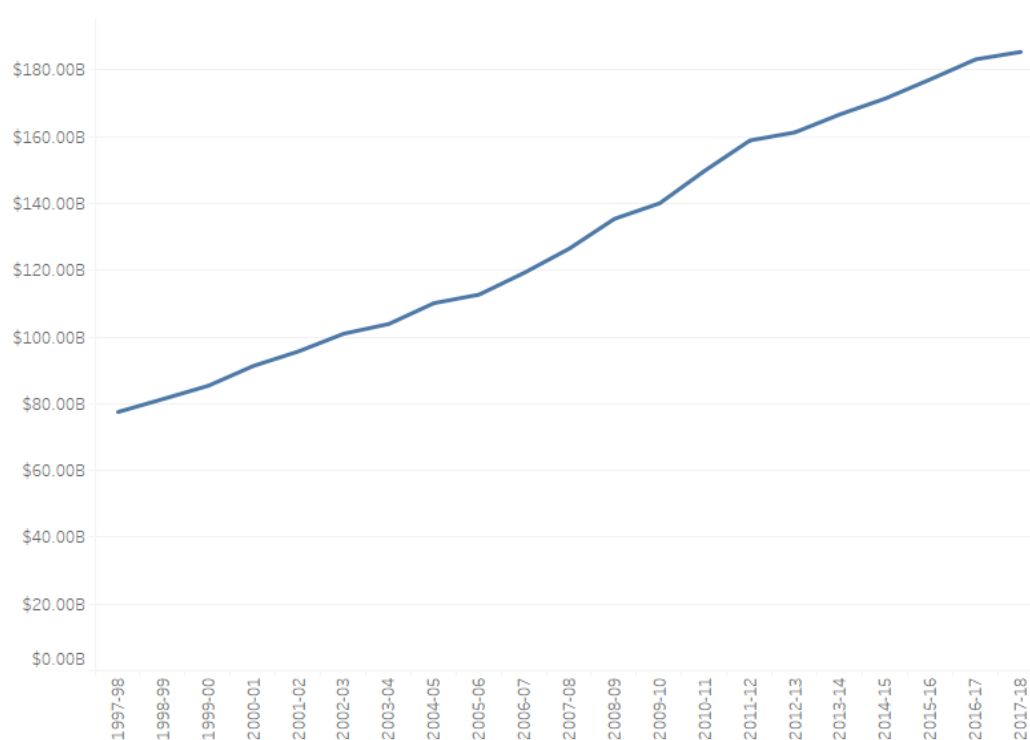
Australia's rising burden of health care on state and federal governments is being driven by an aging population, rising cost of interventions and medical technology, higher community expectation for care and the increased chronic diseases.

Health expenditure in 2017-18 was \$185.4 billion and it is rising a 1.2% in real terms. Spending on health in Australia grew in real terms by 50% between 2006–07 and 2015–16. During this same period population growth was around 17% (AIHW, 2018).

The aging Australian population and rising obesity are increasing risk factors leading to concerns that the level of funding will become an unmanageable burden in future. In 2010, Treasury's Intergenerational Report estimated that Australian health costs were expected to double by 2050. (Parliament of Australia, www.apf.gov.au).



Overview of total health spend in Australia 1997 to 2017 (\$ millions)



Source: AIHW, 2018

The global health burden

Governments globally recognise the importance of preventative health and the health burden is rising in most developed nations due to the impact of preventable, non-communicable diseases. WHO has been active in raising awareness of the pernicious impact of obesity on government health budgets and as a result, most developed countries are actively planning for the same trajectory of rising health costs as Australia. WHO has identified global childhood obesity in particular as one of its six 2025 targets for priority action.

There are now a number of nations who collaborate on a traditional approach of a '5 a day' marketing message following consistent recommendations from WHO over many years. One of the first of the '5 a day' campaigns was launched in by the USA and ran from 1993 to 2007. The Western Australian Government was an early adopter of the volume consumption messaging. A global alliance of national healthy eating program managers now spans 30 countries (fiava.org). A 2010 survey revealed that in Europe alone there were more than 100 national level healthy eating interventions (Capacci *et al*, 2012) When the US '5 a day' campaign rebranded in 2007 to 'Fruit & Veggies, more matters' it never regained the brand awareness of the previous campaign despite similar budgets. The '5 a day' had built brand awareness cumulatively over 16 years (Kraak *et al*, 2017)

A detailed study was conducted in support of a healthy eating campaign by the Government of the Netherlands in 2000 to provide an evidence base for public investment to increase consumption of fruit and vegetables (Van't Veer, 2000). Academics reviewed over 250 studies on cancer and cardiovascular disease to



estimate that a diet with adequate fruit and vegetables could reduce cancer incidence by an average of 19% and cardiovascular deaths by an average of 16%. The impact of high vegetable consumption was most pronounced in relation to gastrointestinal cancers, followed by hormone-related cancers. The study concluded that the evidence was compelling enough to justify public health investment to increase in the consumption of fruits and vegetables.

A working group within the Germany Nutrition Society formed to build an evidence base on the benefits of promoting fruit and vegetable consumption also came to the conclusion that public investment in growing vegetable consumption could be justified (Boeing *et al*, 2012). The working group undertook a detailed review of epidemiological studies to substantiate the fact that increasing the consumption of vegetables and fruit reduces the risk of disease. The study found the following:

- Convincing evidence for hypertension, congenital heart disease, and stroke.
- Probable evidence that the risk of cancer in general is reduced.
- Possible evidence that an increased consumption of vegetables may mitigate body weight gain, thereby indirectly reducing the incidence of type 2 diabetes mellitus.
- Possible evidence of lowering the risk of certain eye diseases, dementia and the risk of osteoporosis
- Possible evidence of reduced risk of dementia, where the consumption of vegetables seems to be more important than the consumption of fruit.

This critical review concluded that the intake of vegetables and fruit promotes health and therefore, there was a clear scientific evidence base to support national campaigns to increase vegetable and fruit consumption because a preventative initiative is a preferable strategy to the burden of several chronic diseases.

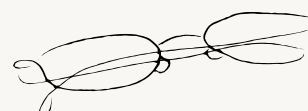
The highly successful Danish program of '6 a Day' was also underpinned by rigorous evidence base. An official quantitative recommendation on fruit and vegetable intake was issued in 1998 by the Ministry of Food based on a study recommending 600g of fruit and vegetables per day (Trolle *et al*, 1998).



Proposition 3: Attempts to lift vegetable consumption in Australia have not improved the national position

Evidence base:

- Unlike most developed nations, there is no national marketing program in place to promote vegetable consumption to the broader Australian community (Fruit & Vegetable Consortium, 2020).
- Previous healthy eating campaigns in Australia have been inconsistent with their themes and branding and not well coordinated (Grunseit *et al*, 2016).
- Investment in healthy eating campaigns to date in Australia are estimated to have been at best around 50% short of the recommended investment levels for effective reach (Grunseit *et al*, 2016).
- Changes in behaviour are more likely to result when the media and education campaigns are run over a number of years and use multiple communication channels with a focus on specific foods (Mozaffarian *et al*, 2012).
- A health-driven as opposed to a consumption-driven campaign and insufficient involvement from the industry, including the retail sector are given as key reasons why the national Go for 2&5 program did not meet its goals (Rekhy & McConchie, 2014).



While the numerous healthy eating programs in Australia have been endlessly analysed and rigorously reviewed to prove some modest success, the fact remains that only 7.5% of Australian adults are eating the recommended serves of vegetables so overall, they must be rated as having failed to achieve their ultimate objective. Whilst some have had success in raising awareness, few have been able to demonstrate that they have changed behaviour.

While Australian health authorities have access to the research and acknowledge documenting the issue of the appallingly low rate of vegetable consumption and its implications, Australia remains one of the few developed nations without a national strategy to increase vegetable consumption across the population.

A history of healthy eating programs in Australia

Australia's first National Food and Nutrition Policy was launched in 1992 and Eat Well Australia existed from 2000 to 2006 (AIHW, 2012). In 2008 there was another attempt at a national campaign, this time targeting obesity called 'Measure Up'



which had an investment of over \$30 million across 4 years with state and federal funding. A review of this program suggested that it did not influence behaviours in relation to increased vegetable consumption and a key reason for its lack of success was that it tried to capture too many messages in one campaign (Civic Creative, 2015). From 2011 to 2013, yet another national campaign with similarly complicated messaging and whole new branding story was implemented with disappointing results, this was followed by a third attempt in 2013 under the brand 'Shape up Australia'.

The most researched and monitored healthy eating campaign in Australia is the Go for 2&5 program which was developed by the WA Department of Health 2002 where it ran until 2010. A national mass media version of the campaign ran for nine weeks from April to July 2005 in all states except Victoria. Pollard *et al* (2007) reviewed the first three years of the Western Australian campaign indicating that it resulted in an increase of 0.6 serves of vegetables per day.

The Go for 2&5 program also had a long run in Queensland from 2005 to 2009. The Queensland program delivered an estimated increase in consumption to as much as 4.6 serves per day of both fruit and vegetables combined at its peak. A program review found that consumption spiked when the campaigns were active with Hort Innovation recording a jump of \$9.3 million in retail fruit and vegetable sales in Brisbane in the first month of the campaign. Peak consumption was estimated to represent a saving of \$50 million per year in acute health treatment services throughout Queensland. The campaign also raised awareness of the importance of healthy eating, especially in lower socio economic cohorts (review data provided by Health & Wellbeing Queensland).

Currently VegKIT is the one national program in existence aimed at increasing vegetable consumption and its focus is improving outcomes for children. This relatively new initiative is a behavioural science-based approach providing a resource portal for educators health professionals and research agencies. It is funded for five years by CSIRO, Nutrition Australia, Flinders University and Hort Innovation. The independently funded program Stephanie Alexander Kitchen Garden Foundation is also national in focus, but as a philanthropic organisation its reach is not to every school in Australia (currently operates in around 1,000 schools). Although the Stephanie Alexander program has not been proven to lift vegetable intake, its influence on involvement and exposure to fresh produce has been positive and it is creating a liking for vegetables among children. It does require substantial resources such as land and volunteers. The Good Foundation program Jamie's Ministry of Food focuses on the important work of lifting cooking skills with a particular focus on youth, including educating them about fruit and vegetables. This program is also resource intensive but has been shown to be highly effective in lifting the consumption of vegetables for participants and their families. The Ministry of Food program is strongly aligned with the approach advocated in this business case of helping Australians discover the eating enjoyment of vegetables as the key focus with the nutritional endorsement being an endorsement message i.e. Vegetables taste fantastic (and they are good for you too).



There are many state-funded and philanthropic programs targeting children as well as those assisting specific cohorts of adults who already have chronic diseases to improve their diets (e.g. Victoria's INFANT program developed to help parents and families develop healthy eating and physical activity behaviours from the start of life). There are also many nutritional programs embedded in the community infrastructure such as nutritional standards in daycare and schools, community food and gardening initiatives as well as various social and cultural activities. The missing element is a national response with consistent messaging to the broader issue of increasing the dire rates of vegetable consumption in the general population.

A comprehensive evaluation of contemporary mass marketing campaigns for preventative health in Australia was conducted by the Australian Prevention Partnership Centre (Grunseit *et al*, 2016). The study was motivated by the need to address the *"patchwork of evidence"* for these many programs in relation to diet and obesity prevention in order to clarify learnings for future programs. The report acknowledges the mixed successes of such programs in Australia and noted that Australia was not alone in this regard as many of the campaigns targeted at obesity and diet around the world were poorly monitored and that their integration into broader preventative health policies has been *"fragmented, seldom coordinated and sequenced"*.

Reasons for the limited success

While it must be noted that programs in Queensland and Western Australia have had some documented successes, the national effort has failed. Across just a few of the key studies reviewed in for this business case, a summary of the reasons for failure of Australian marketing initiatives to improve both fruit and vegetable consumption include:

Rekhy & McConchie (2014):

- Non-existence of a vegetable marketing levy to support ongoing promotion.
- Health-driven focus in strategies as opposed to a consumption-driven message.
- Insufficient involvement of the retail sector.
- State based health systems with differing agendas.

Civic Creative (2015):

- Short-term campaigns are not the solution. To change behaviours requires consistent and long-term campaigns.
- Advertising is only one component. These campaigns require a full range of activities and a substantial community commitment.
- Constantly changing branding.



- Professional marketing services should be involved in the set up and naming of a program right from the outset
- Success depends on engaging all stakeholders in the community, be they parents, children, schools, medical service practitioners, local government and nongovernment, organisations;
- Continuity beats changing the program every couple of years
- Specific goals help define targets and help provide direction to all stakeholders.

Grunseit *et al* (2016):

- There is a wastage of resources with many programs running around Australia with inconsistent branding (consistent branding and messaging would leverage the collective investment and strengthen the messaging).
- Lack of integration in campaigns (mass media campaigns are more effective when underpinned by integrated strategies with multi sector activity and a broad range of intervention programs and policy action)
- Under investment (most programs under invested in the media component and were at best, 50% of the investment threshold required to achieve impact)
- Short term funding (multi-phase efforts of at least 5 years or more are required to achieve a base load of reach and impact on the national population). Sustained and repeated campaigns are needed to stimulate behavioural change because it takes some time to impact beliefs and attitudes.
- Sequences of relevant messages should be delivered under an overarching campaign theme (which is the intention in this business case).

Adding an international perspective, some further criteria for success are:

World Health Organisation:

- Marketing campaigns without integrated solutions that leverage health promotion policies, environments, services and products across sectors are unlikely to succeed (WHO, 2013).

Kraak *et al*, 2017:

- Public health researchers often lack the training and resources to apply branding principles effectively to design, implement.



Rekhy & McConchie (2014):

- Learnings from the international studies reviewed emphasised that collaboration was a key contributor to success in many programs reviewed because it ensured consistent messaging and enabled a larger pool of funds.
- Insufficient involvement from the industry, including the retail sector is a key reason why the national Go for 2&5 program did not meet its goals.

Recommendations from Australian Prevention Partnership Centre

The program review most relevant for this business case is the Grunseit *et al* review which analysed 17 mass media health campaigns in Australia targeting adults. The review found that although most campaigns were of a high creative standard in their execution, the approaches were overlapping, adding substantial cost and most had an uncoordinated approach that did not address legislation, regulation and policy development. Most were not part of an integrated system or multi-component approach to disease prevention. Their report makes the following nine recommendations:

1. Campaigns should be part of an integrated, system-wide approach to non-communicable disease (NCD) prevention
2. Campaigns and main messages should be consistent across Australia
3. Underpinning theory / logic models need to be made explicit and applied
4. Clear, measurable campaign goals and objectives should be specified
5. Linkages to broader strategies (beyond communication) should be further developed
6. Campaign duration and investment should reach a defined impact threshold (previous campaigns in Australia have been drastically under-funded by more than 50% of minimum expenditure)
7. A campaign planning and evaluation protocol could contribute to better practice
8. Campaign evaluations should be made publicly available
9. Sustained campaign efforts over several years are required to achieve population impact.

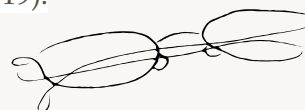
The review gives rise to the important point that while Australia can lay claim to the delivery of a number of highly successful behavioural change programs that have been ground-breaking in addressing smoking, traffic accidents and skin cancer prevention, it would be fair to say that as a nation, Australia has not been successful in the area of lifting vegetable consumption rates as an important component of improving the national diet and reducing the disease burden.



Proposition 4: The economic, social and environmental payback to invest to lift vegetable consumption is compelling

Evidence base:

- A 10% increase in vegetable consumption would reduce annual health expenditure in Australia on certain cancers and cardiovascular diseases alone by \$100 million (Deloitte Access Economics, 2016)
- An increase in consumption of half a serve per day would conservatively generate an incremental increase in industry returns of \$634 million per annum which is shared by all parties along the food supply chain (McKINNA *et al*, 2018)
- Increasing vegetable consumption has wider economic potential with increased consumption generating as much as \$1 billion (NPV) economic value over 11 years (Deloitte Access Economics, 2018)
- Every dollar of incremental value generated by an industry has a flow-on multiplier effect on GDP and regional employment. Every new job created in the industry supports an additional job in the regional economy. (Deloitte Access Economics, 2018)
- Based on modelling from the wine industry, it could be argued that for every \$1 of additional industry value created and every additional job created, there would be at least \$1 more contributed to GDP and one more job in the wider community. (Wine Australia, 2019)
- Food production constitutes the single largest driver of global environmental degradation. Without consumption of a greater proportion of vegetables, the world will not meet the UN's Sustainable Development Goals nor the Paris Agreement and may struggle to feed the forecast world population of 10 billion people by 2050 (EAT Lancet Commission Summary Report, 2019).



Investing public funds to grow vegetable consumption has impressive returns on investment far beyond health budget savings alone. While the benefits for the health sector are most obvious, the economic and social benefits are in fact even larger and extend into the entire vegetable supply chain, regional communities and ultimately, the broader Australian economy.



The commercial benefits of increased vegetable consumption

The vegetable industry comprises a complex, inter-linked supply chain which along with growers, includes input and equipment suppliers, advisory services, packaging, transport companies, wholesale markets, as well as retailers. In 2017, Australian vegetable growers produced more than 3.5 million tonnes of vegetables with the farm gate value of this produce totaling \$4.29 billion (Hort Innovation Statistics Handbook, 2018)).

Predominantly, the fresh vegetables consumed in Australia are produced locally, with imports representing only 1.1% of fresh vegetables consumed (*ibid*) and the proportion of vegetables exported, being only around 7% of total production.

Over recent decades, vegetable growers have invested heavily (via a national levy system) in R&D to lift productivity. The result is that supply now regularly outstrips demand and this can have a detrimental impact on the pricing of commodity categories to the extent that industry profitability suffers, paradoxically more so in good seasons. One industry axiom is that an oversupply of 10% usually results in a price reduction of 50%. In categories like mushrooms this level of price fluctuation can occur on a week to week basis. At the same time, per capita consumption of vegetables has been in decline, so demand has been flat while capacity has been growing, creating an element of market failure. (Note: Overall, the value of vegetable production has increased in many categories due to de-commoditisation strategies that growers are using in response to the oversupply issues. These include value-adding, branding of unique varieties, counter-seasonal production and the introduction of more specialty varieties.)

With the propensity for oversupply is worsening, in 2018 Hort Innovation (in partnership with the vegetable industry peak body AUSVEG), initiated a project to build a business case for grower investment in a vegetable marketing program (McKINNA *et al*, 2018) via the national levy system. The research included a component of economic modelling that involved applying the Hort Innovation / CIE Hi-Link partial equilibrium model to assess the potential economic impact of any marketing investment. The modelling component of the project was managed by Deloitte Access Economics who analysed and interpreted the outcomes. Five marketing investment scenarios were modelled with varying assumptions on marketing expenditure and demand lifts. The modelling included only those vegetables levied under the Hort Innovation Vegetable Levy Fund¹, which accounts for only around half of Australia's total vegetable production value.

The base case scenario in the modelling assumed an annual marketing program valued at \$10 million per annum, over five years, the budget deemed necessary to be able to deliver a behavioural change campaign with national coverage and adequate reach. Based on the results of other programs studied in the literature review, it was judged that a campaign of this size could achieve the result of

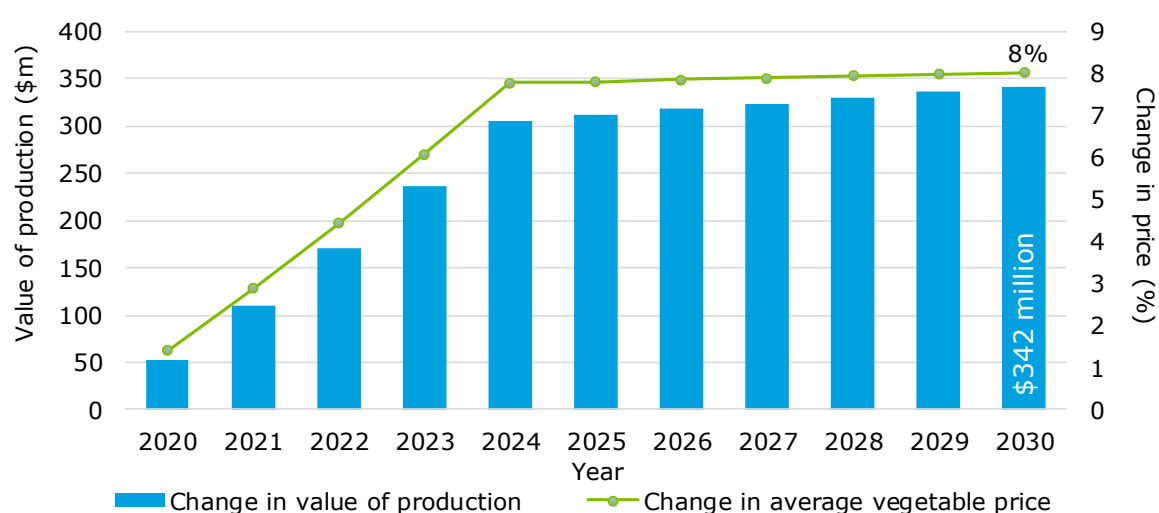
¹ Hort Innovation collects R&D levies from industry which are matched by government. The vegetable levy fund only applies to certain categories that make up around 50% of production. Some vegetables, like onions have their own separate levy funds.



Australians consuming an additional half a serve per day, per capita of vegetables by year five (The Western Australian Go for 2&5 campaign delivered an increase of 0.6 serves at its 3 year review (Pollard, 2008)).

The results of the modelling indicated that a lift in consumption of a half a serve per day, per capita would create an extra \$634 million per annum in increased sales of vegetables. The share of that incremental value that would be attributable to vegetable growers would be \$342 million per annum. However, because this study only covered the leviable vegetable categories, the total increase in economic value would be substantially higher than this if all vegetable categories were included. The model estimates that total profits at farm gate would rise by \$528 million per by 2030 relative to the baseline of which \$ 274 million would accrue to growers.

Scenario 1: Change in production and average vegetable prices

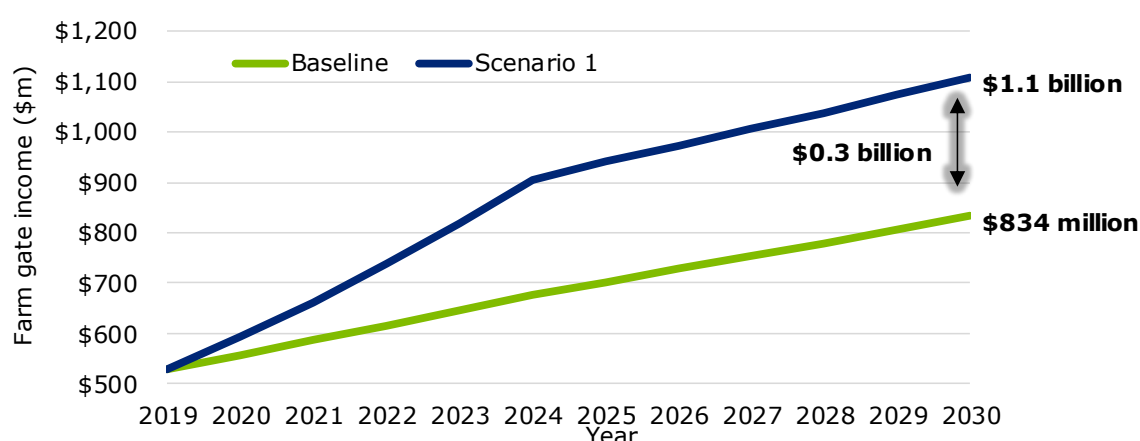


Source: Deloitte Access Economics, CIE Hi-Link model results, 2018

The increase in value would be due to a combination of additional volume plus the estimate that wholesale prices will rise on average by 8% without an oversupply market dynamic. At present, the prices of many vegetable categories fall below the cost of production during peak production periods due to oversupply. This is usually the time when the produce quality is at its best.



Scenario 1: Change in farm gate income for leviable vegetables.



Source: Deloitte Access Economics, CIE Hi-Link model results, 2018

The remaining \$292 million of the annual incremental value that would be created would be shared across the other actors in the vegetable supply chain including input and equipment suppliers, packaging suppliers, transport companies, wholesalers and retailers. Because supermarkets have a 70% share of vegetable retail shares, they would be the major beneficiary of the increased volume consumed. The cumulative increase in vegetable consumption over 11 years as a result of the proposed marketing investment, was valued at an estimated \$1.2 billion NPV (today's dollars) which translates into a \$19.01 return for every dollar invested in marketing vegetables.

It is important to note that the assumptions underpinning the modelling were deliberately conservative.

The economic benefits

In addition to the increased returns to businesses in the vegetable supply chain, the investment in a marketing campaign to increase vegetable consumption would also generate substantial benefits to the overall economy. These benefits flow from two impacts:

1. The savings in public health budgets
2. The flow-on multiplier effects from the additional value created through an increased volume of vegetable production.

Impact on health expenditure

A sustained increase in average daily consumption of vegetables would deliver significant reductions in public health expenditures and reduce the health burden by lowering rates of chronic diseases including certain cancers, diabetes, heart disease, kidney diseases and more. As outlined in the earlier propositions, obesity is a critical risk factor for most of the chronic diseases that are the major components of the growing health burden. As noted already, there is an established link between vegetable consumption and reducing obesity.



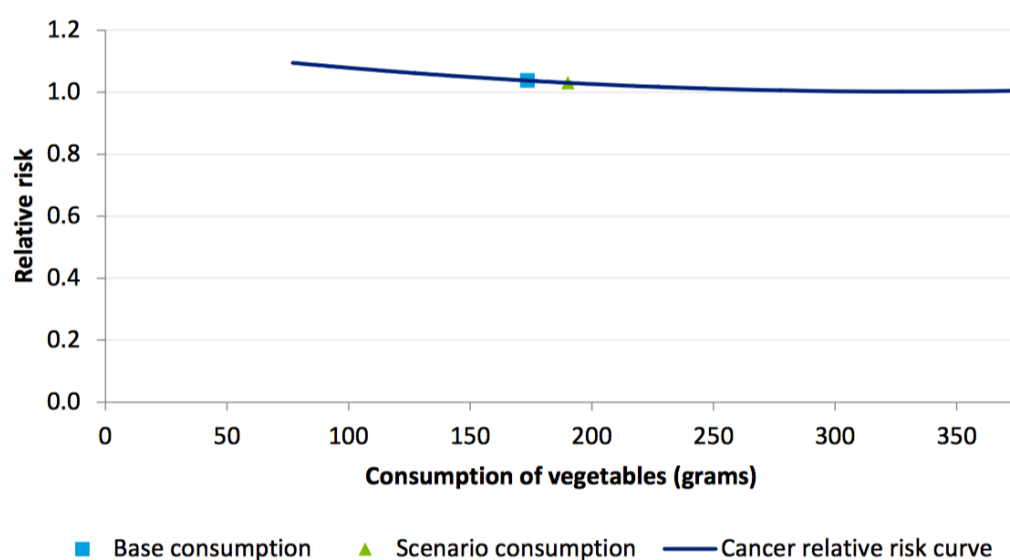
In 2015, Deloitte Access Economics was commissioned by Hort Innovation to model the impact of increased vegetable consumption on government health expenditure as well as producer returns (Deloitte Access Economics, 2016).

The project involved modelling two scenarios:

- **Scenario 1:** A situation where average consumption of vegetables across the population was 10% higher.
- **Scenario 2:** A situation where consumption of vegetables by males was equal to that of females (on the basis that males consumed approximately 10% fewer vegetables than females, on average).

The following charts indicate the impact on cancer and CVD risk with a 10% increase in vegetable consumption.

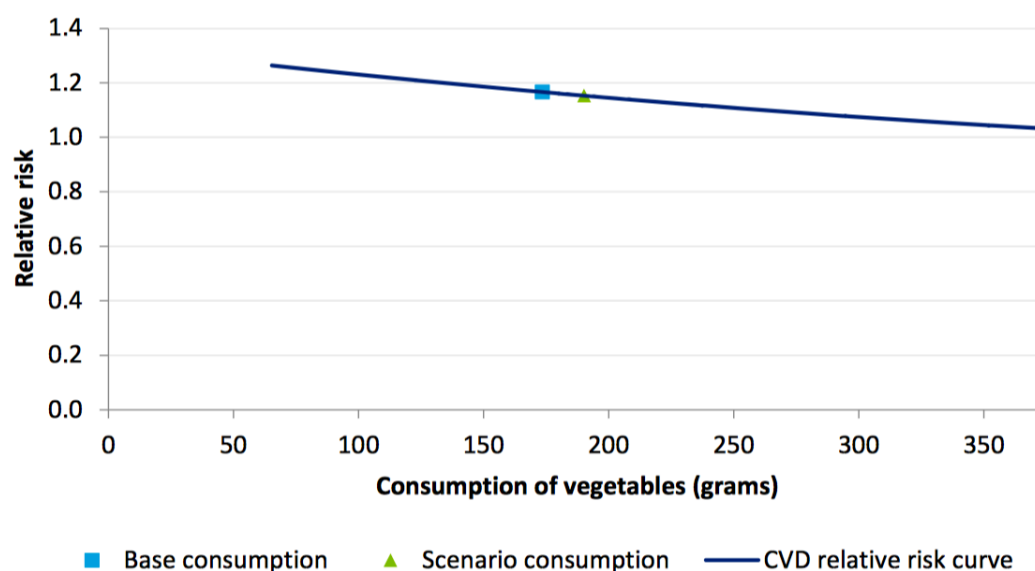
Change in cancer risk associated with a 10% increase in vegetable consumption, persons



Source: Deloitte Access Economics, CIE Hi-Link model results, 2018



Change in CVD risk associated with 10% increase in vegetable consumption, persons



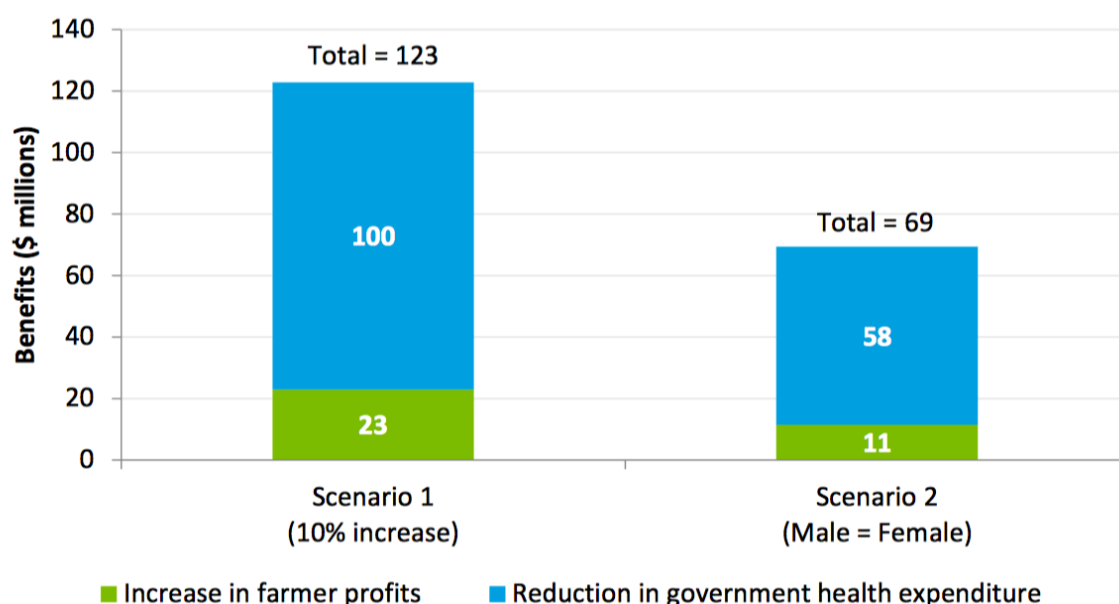
Source: Deloitte Access Economics, CIE Hi-Link model results, 2018

The modelling concluded that higher levels of vegetable consumption would lead to significant economic benefits for governments and for vegetable producers. Scenario 1, a 10% increase in consumption, results in an estimated \$123 million of benefits annually (in 2015-16 dollars), of which \$100 million is the expected reduction in government health expenditure and \$23 million is the increased profit that will flow to vegetable growers.

Scenario 2 whereby males only increased consumption by 10% would result in benefits of \$69 million. Vegetable growers would earn an additional \$11 million in profit and government health expenditure would be reduced by \$58 million in 2015-16.



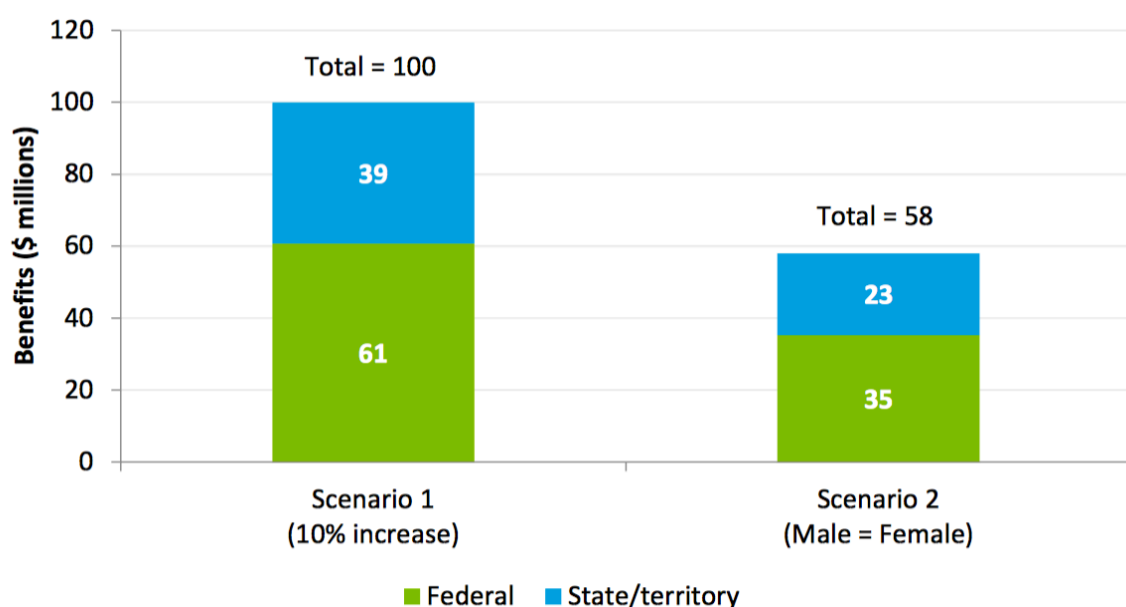
Producer returns and health benefits, all persons



Source: Deloitte Access Economics, CIE Hi-Link model results, 2018

Of the \$100 million savings in government health expenditure achievable in scenario 1, \$61 million would benefit the Federal Government and \$39 million would benefit State Governments.

Government health expenditure savings, by tier of government



Source: Deloitte Access Economics, CIE Hi-Link model results, 2018

It is important to note that the estimated savings modelled in the Deloitte Access Economics analysis relate only to those reduced health costs emanating from reduced risks of some types of cancers and CVDs and do not include the potential



savings from the other chronic diseases that are related to poor diet and obesity such as diabetes, knee, hip, back and other musculoskeletal conditions, eye conditions, malnutrition and poor mental health.

Flow-on economic impact of increased consumption

A sustained increase in vegetable consumption would also have significant flow-on benefits to the economy due to the multiplier impacts on GDP and employment.

In a circular economy an increase in demand of any items leads to more spending, which creates more income and this cycle is self-perpetuating. The multiplier effect refers to the increase in final income arising from any new injection of spending. The multiplier flow-on impact stimulates both GDP and employment due to the new jobs created.

Economic multipliers are derived from input-output analysis and there does not appear to have been specific research undertaken on economic multipliers for vegetables in Australia. In agriculture, typically the multipliers are in the range of 1.5 to 2.5 times. The closest and most recent example is a study in the wine industry conducted by Wine Australia (Wine Australia, 2019), which estimated the wine sector's direct economic contribution and flow-on contribution to the economy via strong linkages to other businesses that supply goods and services required for grape growing, wine making and the wine tourism experiences, as well as the goods and services demanded by employees. The Wine Australia study concluded that the total economic impact for the wine industry was 3.12 times and the employment impact was 2.37 times, meaning for every dollar generated by the wine industry, there is an additional \$2.12 flow-on impact and for every direct job, there is an additional 1.37 flow-on jobs created.

There are obviously significant differences between the vegetable and wine industries, which would make a direct comparison invalid. The wine industry has a significant tourist component that does not apply to vegetables. On the other hand, vegetable production is very labour intensive with a high proportion of the work being manual. It would therefore be reasonable to expect that the economic and employment factors would be somewhere around 2 times, meaning that for every direct dollar generated and every person employed there would be an additional flow-on of approximately \$1 dollar and one FTE job.

Social benefits

Although it is difficult to quantify or even define the social benefits that flow from improved dietary habits, poor health and premature death from chronic diseases causes considerable stress, detracting from quality of life, which in extreme cases can lead to relationship breakdowns, violence and crime. People in good health have richer lifestyle, tending to exercise, socialise and travel more. They feel better, look better and have greater self-esteem. In contrast people with poor health tend to be less active, less mobile, have less energy and confidence and lower emotional wellbeing.



The other dimension of the social benefits is the generation of Gross Regional Product and additional employment in regional communities, which again has flow on social benefits in terms of quality of life and liveability in Australia's regional and rural communities.

Environmental benefits

Food production has a major impact on the global environment and increasingly vegetable production is part of a global food system as more and more vegetables are shipped around the world. Australia is both an importer and exporter of vegetables. (A relatively small proportion of Australia's vegetable crop is exported due to the high cost structure of production in most crops except carrots, which are highly mechanised.)

The EAT Lancet Commission report 'Food Planet Health' (EAT Lancet, 2019) attests that food is the single strongest lever to optimise human health and environmental sustainability on earth. The project assessed the body of work on the environmental impacts of various diets and developed an evidence base that shows that a diet with more plant-based foods was associated with improvements in global health as well as the global environment. The Commission developed scientific targets for healthy and sustainable food production in the context of the global population reaching 10 billion humans by 2050. The scientific target nominated for vegetable consumption is 300 grams per person, per day. The report advocates a diet that is largely plant based but can include fish and meat in modest portions.

The EAT Lancet report aimed to define an ideal global food system which nominates the healthy diet and food production practices that will enable achievement of the Sustainable Development Goals (SDGs) from the Paris Agreement. It is argued that healthy and sustainable is a win/win outcome. In the simplest terms, the report suggests that over half of every plate of food should consist of a diversity of fruit and vegetables to achieve both global health and sustainability goals.

To achieve a healthy global population and planet by 2050, three core actions are nominated in the EAT Lancet work:

1. A global shift to healthier diets
2. Improved food production practices
3. Reduced food loss and waste.

A number of Australian organisations have already recognised the importance of this global research and have adopted these three core actions in their strategic plans. This business case aligns with EAT Lancet report intent and a specific recommendations including the goal to halve food losses and waste in line with UN Sustainable Development Goals, advocate for increased supply chain collaboration and improve consumer education on the importance of vegetable consumption. A well-executed behavioural change strategy has the potential to reduce the wastage of vegetables at various links in the supply chain (particularly at retail as well as in the home).



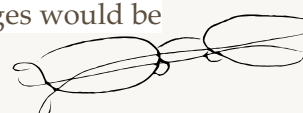
In summary, investment to increase vegetable consumption will have significant, flow-on benefits to society, the community and the environment beyond the major reduction in the public health cost burden and the additional economic value generated.



Proposition 5: Pooled resources would more effectively deliver the scale of shift that is now required

Evidence base:

- Learnings from international campaigns suggest that a high degree of collaboration between all stakeholders including industry is an important criterion for success (Rekhy & McConchie, 2014).
- The Grunseit *et al* study (2016) identified that there had been over 55 different physical activity, nutrition and obesity campaigns conducted in Australia between 1996 and 2015.
- Consistent messages from multiple sources are more likely to have an influence on the purchasing and consumption behaviours of targeted groups (Kraak, 2017).
- A review of 57 US fruit and vegetable consumption programs concluded that only a multifaceted approach that integrates government, industry and community across all ages would be successful in increasing intakes (Thomson, 2011).



1. There are many stakeholders with a shared interest in driving increased vegetable consumption

Across Australia there has been a vast amount of resources invested independently by various parties including retailers, vegetable businesses, industry bodies, NGOs, public health authorities and the state and federal governments in attempting to increase national vegetable consumption. Although there have been some programs that have delivered regional successes, despite the scale of the collective resource that has been allocated, there has not been a shift in consumption of significant or sustainable proportions. Duplication of effort and fragmentation of messaging has effectively diluted the collective funds invested.

The patchwork of messaging across the various programs has mostly been driven by health organisations rather than industry so it has focused on the negative consequences of poor eating habits, rather than triggering behavioural change through interventions that emphasise the eating enjoyment of vegetables.

The breadth of stakeholders that could be corralled to assist in this endeavor is far broader than the many health consortia and collaborations that have been formed in recent years as illustrated in the table below:



Stakeholders with a vested interest in increasing vegetable consumption

Commercial organisations	<ul style="list-style-type: none">• Wholesale produce markets• Growers, packers and fresh value-adders• Major vegetable processors• Fresh food processors that use vegetables• Supermarkets and / or independent retailers• Vegetable supply chain, logistics and transport businesses• Industry associations• Gardening and nursery industry
Public organisations	<ul style="list-style-type: none">• NGOs with various preventative health and nutrition interests• State, territory and federal health departments• State and federal departments of agriculture• Departments of industry and trade• Departments of regional development• Local governments• Research bodies and higher education institutions

While there are a number of federal government initiatives that are working on obesity and healthy eating generally, there is no national mass media messaging active on the issue of increasing vegetable consumption in the population.

Federal government activities relevant to this business case include the following:

- Healthy Food Partnerships
- National Preventative Health Strategy (Department of Health)
- National Cabinet's National Obesity Strategy
- Boosting Preventative Health Research Initiative
- Eat for Health and Australian Dietary Guidelines
- Hort Innovation research and education programs



Some of the key **State government activities** relevant to this business case are outlined below:

VIC	Life! Program
VIC	Victorian Healthy Eating Enterprise
NSW	Make Healthy Normal
NSW	Munch and Move
NSW	Crunch & Sip
NSW	Yhunger
QLD	Happier. Healthier
QLD	My health for life
WA	Live Lighter
WA	Healthy WA
TAS	Move Well Eat Well
TAS & NT	Medical Outreach Indigenous Chronic Disease Program (MOICDP)
TAS	Healthy Young People
ACT	Fresh Tastes
ACT	Healthier Choices
SA	Community Foodies
SA	Get Healthy

The following map highlights the disparity of logos and messaging. The only program focused on vegetable consumption and the only national program, is the children's program VegKIT.





2. The collective investment represents a lost opportunity

Although it is impossible to quantify the resources invested in this quest by both the public and private sectors, collectively it would be likely to amount to many millions of dollars. Despite this large effort, not only is vegetable consumption significantly below that recommended under the healthy eating guidelines, it is steadily declining with no sign of the trend line flattening.

Supermarkets alone spend tens of millions of dollars each year promoting fresh fruit and vegetables and the two major retailers have their own children's healthy eating programs and initiatives like the Woolworths weekly Fresh Market Update. The major supermarkets are heavily promoting their fresh food offer based on freshness and price but in recent years they have been more strongly pursuing recipe ideas and meal inspiration.

Within the public health space, the combined budgets of the various government agencies aimed at improved nutritional outcomes would be tens of millions of dollars. Collectively, this investment pool would be more than enough to finance a large, on-going program that could deliver real impact. Through a collaborative approach, a national program could be mounted for a fraction of the current fragmented spend, freeing up resources for other projects. A strong umbrella brand, which links the messaging would greatly improve the impact.



To date, none of the programs have delivered a sustained turnaround in the declining consumption levels. Some of the programs have generated a degree of local success or short-term success but once they ended, consumption reverted again emphasising the point that long term and sustained investment is required.

In the case of the commercial marketing activity, the key motivation here has been more about taking market share from competitors, which is perfectly understandable, but the retail sector has collaborated in the past on other issues in the national interest such as packaging waste.

There is very little industry advertising or promotion of vegetables (the onion and mushroom industries have a marketing levy) although some industries are proactive in providing information to educators. Some of the processed vegetable companies do advertise their products and brands, but even they could leverage this spend better by partnering in a project that pushed more inspirational vegetable recipe ideas to consumers using their products and promoted vegetable consumption more broadly.

To some extent, all of these many activities do drive vegetable consumption, but there is a lost opportunity to harness this collective momentum to lift consumption by finding a way where each party can contribute in a manner that delivers to their own individual commercial agendas (either in-kind or financially) as well as strengthening the overall effort to improve national health outcomes.

3. Most of the public and industry programs are under-resourced

Despite the very large collective spend on health campaigns, predominantly the individual programs are underfunded relative to the task at hand as highlighted in a number of their own reviews. To be effective in driving behaviour change at a national level requires a large and recurring budget to support a high saturation, on-going multi-media and multi-intervention strategy. As noted already, the Grunseit *et al* study (2016) identified that most mass media marketing in this space was underfunded by more than 50% of the required budget.

Those operating in the public health space must always compete for their share of the budget pool, often having to compromise with a heavily cut down version of the ideal campaign. Such campaigns are usually light on traditional media and heavy on social media, publicity and events, which have limited impact in isolation without being anchored to a high profile paid advertising campaign. When mainstream media is not possible, the reach and weighting of the message tends to be shallow.

Lack of resourcing also impacts the continuity of approach. Government funding it is often disrupted by the machinery of government factors e.g. changing governments, priorities, policies or strategies of a new minister or department leader of the day. This lack of continuity in strategic approach is counterproductive to driving long term shifts in behaviour where consistency of message is critical (Civic Creative, 2015). A bi-partisan approach is called for.



While there are a number of public forums where the various agencies engaged in healthy eating programs meet to share their experiences, the activities still largely run as separate silos, with the opportunity being lost to leverage synergies and economies of scale and reduce overlap and wastage.

4. The messaging about vegetable consumption has been inconsistent

Most marketing campaigns about healthy eating in the past have been driven by the health sector and yet the consumption blockers for vegetables are not all health issues. They include cooking skills and general food literacy as well as lack of inspiration, time constraints and limited menu planning. The strategic intent of much of the messaging to date has been misplaced. Most people already know that vegetables are good for them and that they should eat more.

The fundamental blocker to vegetable consumption can largely be summarised as follows:

Consumers are not having a consistently enjoyable, stimulating nor fulfilling experience with vegetables because they lack the skill, confidence and inspiration to buy, prepare, store and serve them.

Food and health marketing tend to be based around narrow and objective messaging. The commercial parties are focused on building market share or competing for 'share of stomach' or 'share of wallet', rather than growing the total category. Their messaging is focused on convincing consumers to buy their vegetables rather than the competitors. Public health agencies on the other hand are becoming more willing to collaborate but the partnerships are on single issue messages (e.g. sugary drinks, with obesity being a common issue) rather than the broader story about vegetables.

Historically, much of the messaging by the public health authorities tended to be negative and prescriptive, illustrating the consequences of poor dietary habits. The behavioural change experts are now of the view that negative messaging tends to quickly lose its effectiveness as people turn off or disassociate, believing that it does not apply to them (*source: Stakeholder research for this project with various health authorities*).

The marketing programs addressing vegetable consumption have focused on the nutritional qualities of vegetable and tend to be quite prescriptive, e.g. Go for 2&5 rather than inspirational. There has also been a tendency, in the messaging to classify foods into 'good' or 'bad' (e.g. the star rating system) or 'eat more' and 'avoid' foods and vegetables can fall into both of these categories. There is a growing body of opinion that such instructional messaging is losing its effectiveness because consumers tend to resent being told what to do. The shift now is to more subtle, positive and inspirational messaging based on healthy, balanced lifestyles, wellbeing, feeling good and enjoying life and using language such as 'everyday foods' and 'special occasion' foods.

Even in the commercial sector the messaging has been based on the nutritional benefits of vegetables, rather than on the enjoyment and appetite appeal (e.g. low carb potatoes or hidden onions in the secret serve campaign). Yet, as stated



already, awareness of nutrition is not a significant blocker of consumption. Although the nutrition message is of interest to the health conscious consumers, it will not in itself positively change behaviors.

There is also some potentially damaging messaging about vegetables in existence from the commercial health sector. Most of this is driven by social media popularising the latest fad diets, some of which promote excessive amounts of consumption of a particular vegetable and total abstinence of others. Some say that garlic or legumes should be avoided, whilst others promote them as superfoods. This type of mixed-messaging is counter-productive.

There are many negative messages about health and what one should *not* do. Vegetable consumption has the opportunity to be a very positive message about what one *can* do to improve life.

5. Previous programs have lacked the buy-in of the all stakeholder groups

A reason given in many of the reviews as to why the fruit and vegetable promotional programs to date have not reached their potential, is the failure to engage all stakeholder groups, particularly industry. To date, much of the contact between the food industry and the public health sector has been of an adversarial nature, particularly with respect to products high in fat, sugar and salt and heavily processed foods. The issue of food labelling remains a divisive issue.

In this instance, the vegetable industry shares a common interest with the public health community in increasing the consumption, albeit with quite different motivations. However, generally speaking, the engagement between the operators of vegetable supply chain businesses and health bodies at a national level has been minimal until recent years. The VegKIT program has facilitated engagement with industry via its advisory group for input into its activity targeting increased children's consumption of vegetables. The Fruit & Vegetable Consortium attempts to take industry engagement further with its shared mandate for broader community action.

By their very nature, behavioural change programs include more than a marketing campaign, they involve multiple interventions at all points in the vegetable experience and to deliver this will require collaboration from both industry and the health sector. Government has a pivotal role to play in facilitating this collaboration.

Virtually all of the previous programs aimed at lifting vegetable consumption have been run by government and public health NGOs, with minimal involvement of industry. Most have been based around a single message and delivered through a narrowly focused communication campaign which only addresses one element of a multi-factor problem. Involvement of industry provides the potential to engage with consumers at all points in the consumption journey.



Industry can bring three essential elements to the program:

1. Resources

The commercial sector could leverage many existing resources into the program by integrating these activities in a coordinated manner. The consumer vegetable experience involves multiple touchpoints with industry and at each of these points, consistent messaging could be projected around a common theme. The supermarket sector alone is spending millions on vegetable marketing which could be harnessed through a collaborative approach.

2. Governance and management expertise

This program will be a large and complex business in its own right and will need to be well-managed but with the rigorous governance and transparency required for a public project such as this. The commercial sector is accustomed to managing large complex projects, marketing programs, budgets and timelines.

3. Networks

Business is strongly networked with influential parties both politically and in the private sector.

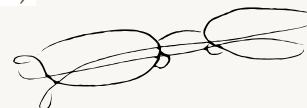
Globally, two of the most successfully vegetable consumption programs the Canadian 'half-your-plate' and the Danish '6-a-day' program both have strong industry input. In fact the Canadian program is administered by industry through the national Produce Marketing Association. The success of these two campaigns has been largely attributed to the fact that they involved industry collaboration.



Proposition 6: There is much goodwill among stakeholders to collaborate on addressing this national crisis

Evidence base:

- Consultation conducted for this project indicated a strong willingness to collaborate amongst stakeholders from both industry and the health sector (McKINNA *et al*, 2020).
- Consultation with the vegetable industry for a study on implementing a marketing levy indicated an almost unanimous willingness to endorse a collaborative marketing program (McKINNA *et al*, 2018).
- Supporters of the Fruit & Vegetable Consortium include over 130 organisations across both health and industry domains and the 12 founding members have made substantial financial and in-kind contributions to the project, indicating a deep commitment to the initiative (Fruit & Vegetable Consortium, 2020).
- Government can play an important role in facilitating collaboration between all players in the food system (Morgan, 2009).



There is widespread support from Governments, public health NGOs, the vegetable industry and retailers to be involved in a collaborative approach to address the issue of very low rates of vegetable consumption in Australia.

1. There is a large amount of goodwill among key stakeholders to attempt a collaborative approach

The starting point for developing this project for the Fruit & Vegetable Consortium involved a comprehensive qualitative research exercise with representative stakeholders, which confirmed strong in-principle commitment from the majority to participate in a national program, subject to seeing the detail of the behavioural change strategy and business model. There is a shared view that such a program is logical and long overdue and that the current efforts are wasteful of resources and too siloed.

A common response from the respondents was that *“it’s the right thing to do and it makes a lot of sense”*. There is general agreement that a unified and coordinated approach was badly needed because of the many organisations across many jurisdictions trying to achieve the common goal of increasing vegetable



consumption (albeit with differing motivations). It was acknowledged that this situation was resulting in considerable overlap of both effort and investment. The caveat in this willingness to collaborate was understandably, that their involvement would in no way compromise the objectives of their own organisation.

The stakeholders consulted did not underestimate the difficulty of implementing a truly collaborative effort between both industry and the health sector. A number of the health organisations emphasised that, if left to the health sector alone, nothing is likely to change and that without strong industry and business support, the program will not get off the ground. Many stakeholders noted the need to get the right balance of industry and public health agencies in the management of the program. Getting industry involved early in the program development will bring commercial insights and more marketing knowledge to the collective effort.

2. The lack of a national vision for preventative health has created a void in the nutrition agenda that this project could fill

A common view from the health sector stakeholders during the consultation was that the collective effort to address poor diet is being heavily compromised by the lack of a cohesive national preventative health strategy, the development of which is currently in progress.

The national health landscape comprises a collection of siloed programs, each with their own brand, involving a large number of agencies, all doing their own thing in their own way. This is largely to do with the state-based nature of Australia's health system. Although the stakeholder parties liaise and connect with each other through various alliances, committees and what was formerly COAG, these connections are mostly in the nature of information sharing and networking rather than active collaboration. The State bodies argue that nutritional issues are all different in their State. Even many of the NGOs are fractured at a state level in their operations, operating as a coalition with a common brand, meaning that there is further fragmentation within one body.

The genesis of the issue is believed to be the absence of an overarching national vision and strategy which has universal buy-in across all stakeholders. There were two major national initiatives in play at the time of preparing this business case: The National Obesity Strategy (being driven by the COAG Health Council) and The National Preventative Health Strategy (being driven by the Department of Health). Both of these strategies are likely to have important implications for this proposed project to drive vegetable consumption and conversely, this project could contribute to both in that it is planned to be a 'shovel ready' solution to one of Australia's most pressing nutrition issues. The timing is right for a national focus to be revisited with the restructuring of COAG and implementation of a National Cabinet following COVID 19.



3. Government can play an important role in facilitation

A study for the Victorian Government on food waste (Morgan, 2009) clearly identified that poor communication and lack of collaboration between all players in the food supply system was a key failure leading to waste and low consumption. It emphasised that all tiers of government have a role to play in instigating and facilitating change. This facilitation role is particularly critical in a situation like this project where there are implications for both industry and national health. Morgan describes the need as follows:

“This role includes supporting the private sector to function more efficiently and guiding a cultural shift to increase population-wide appreciation for healthy eating. A whole-of government approach to tackling the low consumption/high waste paradigm must be taken.”

The genesis of the Fruit & Vegetable Consortium did in fact come from government. The Victorian Government was proactive in encouraging the early members to begin the conversation (which is why the Fruit & Vegetable Consortium is run from the Victorian arm of Nutrition Australia, although it is very much a national initiative).

While this project aims to be independent of government, it will need support in the development stages. Because the agenda crosses over portfolios of regional development, trade and agriculture as well as health, government has much to gain from encouraging industry to participate in this one program. Furthermore, an important part of the behaviour change program will involve advocacy to change government policy and influence existing programs and initiatives.

It is likely that industry in Australia will need some encouragement from government to come to the table as the national track record of continuity in such programs is poor as evidenced by the research quoted in this document. Industry will need to be confident that this is a serious project that will have some longevity in order to invest their time and effort. Healthy eating programs in the USA and Canada have been strongly driven or supported by their respective produce marketing associations including current campaigns such as Half Your Plate (Canada) and children’s program Eat brighter! (USA). The behavioural change strategy needs to involve all the various parties in a manner that is complementary to their individual existing programs but government can play a part in bringing the parties together to discuss what that might be.

4. Suggestions from the feedback that must be considered in bringing the parties together

The consultation feedback has highlighted a number of key points that need to be addressed in communication with the interested parties:

- Demonstrating to the commercial partners how they get involved in a way that complements their own individual agendas and recognises the highly competitive nature of some industries, such as supermarkets



- Demonstrating how this program is different
- Getting the funding model right
- The critical importance of an independent management and governance model
- The need for well-defined KPIs and rigorous and independent evaluation methodologies
- The need for tight guidelines and protocols balancing the health and commercial agendas
- Keeping various stakeholder groups informed at every step of the journey
- Having a clear mechanism for balancing the differing agendas of commercial players and health organisations when they arise (i.e. this project is about increasing consumption of *healthy* vegetable dishes only)
- Strong industry engagement in the process.

5. Collaboration must include strong industry representation

Healthy eating campaigns in Australia have been heavily driven by the health sector in the past and this has been a reason offered for the lack of success. The importance of having commercial collaborators in the program cannot be overstated, not just for the reasons of the financial contribution but more importantly to capture direct and timely market feedback and better understand the shifting blockers to purchase of vegetables from those who know how to read the consumer best.

Clearly, the motivations for involvement of the commercial parties will be distinctly different to that of the public health fraternity; in the final analysis commercial partners will only be involved if there is a commercial benefit. Notably supermarkets operate in a fiercely competitive environment and the major retailers would want to be involved in completely different ways.

Rather than attempting to get commercial partners to buy-in to a specific program, the chances of success will be greatly enhanced by finding ways to complement their existing programs in a manner that contributes to the objectives of the program.

6. Successful collaboration will require clear communication

It will be critical to keep all stakeholders informed at every stage of the program's development and implementation. This includes the senior management and senior bureaucrats, politicians and their advisors.

To maintain the attention of the various stakeholders during the development process it will be necessary to demonstrate that this program will be significantly



different to what they already doing or add value in another way. For example, the two supermarkets are already heavily promoting fresh fruit and vegetables through their own programs. To get buy-in will require demonstrating that this program brings incremental and tangible benefits over and above current investment. In this regard, the key selling point is the fact that this program involves a long-term, multipronged, integrated approach with multiple touch points and an over-arching, national brand. Retailers will be critical partners because they can influence behaviour at the point of purchase, where a large part of the meal planning process occurs.

Government departments in particular have long planning cycles and budgetary processes (3 to 5 years), meaning that most need at least 12 months' notice to be able to commit resources and alter any strategic plans to accommodate a major program such as this. For this reason, communication will need to be ongoing so that it is top of mind when long term plans and budgets are being formulated. A key advantage of this business case is that it outlines a 'shovel ready' program where much of the thinking and analysis has been prepared.



Part B: Governance, management & funding model



Section 1 | Organisational purpose

This section of the business case for a national collaborative program to increase vegetable consumption in Australia outlines the proposed governance, management and funding model.

The driver of this initiative, The Fruit & Vegetable Consortium, brings together committed organisations from across the health sector and fresh produce industry to collectively advocate for comprehensive joint action to address Australia's complacency about poor rates of fruit and vegetable consumption in Australia. It has a broader agenda than this business case.

This business case outlines the governance and funding model for only the foundation project of the Fruit & Vegetable Consortium, i.e. the vegetable behavioural change program. It does not outline the strategy for the Fruit & Vegetable Consortium overall. For clarity, this program and its primary entity will be referred to from this point as 'The Vegetable Collaboration Company', which is a working name only.

It is proposed that the vegetable program would be operated and branded separately to the Fruit & Vegetable Consortium with the new vegetable brand being used as the umbrella brand of the behavioural change/marketing campaign.

The scope of vegetables included

The vegetables to be promoted by The Vegetable Collaboration Company include both fresh and processed vegetables, including those that are technically classified as fruit (e.g. tomatoes) or fungi (e.g. mushrooms). While the Australian definition of vegetables includes legumes, they will not be a focus of this activity. The program will exclusively support 'Australian grown' produce and healthy use of vegetables.



The Vegetable Collaboration Company is just one of the initiatives and activities that will flow from The Fruit & Vegetable Consortium.



It is likely that The Fruit & Vegetable Consortium will expand its activities over time beyond this initial vegetable project to include various projects in fruit, healthy eating generally, wider advocacy on healthy eating or programs targeted to key demographic cohorts as well as playing the broader role of connecting the various stakeholders with an interest in this area and driving social good. The Fruit & Vegetable Consortium is not the appropriate entity to manage this vegetable program and a separate entity is proposed for the following reasons:

1. It gives The Fruit & Vegetable Consortium the flexibility to run multiple projects outside of vegetables, which may include different stakeholders and have different objectives.
2. To be financially sustainable, the operating company needs to reflect the preferences of its key funders – the NGO-style, consensus model of the Consortium may make this more difficult.
3. The operating company would need to run on highly commercial principles that delivers a clear ROI to all funders, from both commercial and health organisations. It would therefore require a different leadership skill set to The Fruit & Vegetable Consortium.



4. It may be advisable to leave the recommended interventions around regulation and legislation advocacy (see Part C) with The Fruit & Vegetable Consortium in order to separate the functions so that the Vegetable Collaboration Company can focus on the consumer-facing aspects of the program.

The alternative is to rename The Fruit & Vegetable Consortium to the 'Vegetable Consortium' and restructure it as per the model proposed. The stakeholder consultation clearly indicated that there is confusion about The Fruit & Vegetable Consortium's current mandate, based on its name.

Proposed Mission

The mission of The Vegetable Collaboration Company is to bring together parties from the health sector, government, NGOs and the vegetable supply chain to collaborate in order to deliver:

1. Reduced chronic disease and generally improved long term health outcomes for Australians through increasing consumption of vegetables.
2. Reduced national health costs through the preventative health benefits associated with increased vegetable consumption.
3. Economic benefits to all parties in the supply chain but particularly to regional farming communities engaged in vegetable production.
4. Environmental benefits to all Australians and the planet.

Operational objectives

1. **To inspire increased daily consumption of vegetables by Australians through building consumer engagement, confidence and eating enjoyment of vegetables using the behavioural change/marketing program.**
2. **To integrate and reinforce the messaging already in the marketplace about the nutritional qualities, quality and integrity of Australian grown vegetables.**
3. **To take a leadership role in leveraging the collective directions and activities of the various other stakeholder groups with the common goal of increasing national vegetable consumption. (This would include collaborating with existing programs like VegKIT).**
4. **To engage with retailers to gain maximum impact and product pull through from the behavioural change/marketing program at the point of sale.**
5. **To improve the accessibility and convenience of vegetables for consumers by strategic R&D investment in new product formats and improved packaging and labelling.**



6. To identify and develop programs to offer more vegetable options in food service outlets.



Section 2 | Operations and governance

Entity structure

The most appropriate structure for the Vegetable Collaboration Company would appear to be a not-for-profit Company Limited by Guarantee as registered under the *Corporations Act 2001* (although this decision should be subject to advice from legal and financial advisers once the business case has been adopted). The shareholders of this entity would be its founding and contributing member organisations. The reasons for this recommendation are:

1. This structure would enable the organisation to enter into contracts, licensing agreements and other business arrangements.
2. Not-for-profit status provides important concessions, for example, eligibility for making donations tax-deductible, which would open up an important revenue stream.
3. A regular company structure, which is limited by shares, has more onerous reporting requirements and is more costly to administer.
4. The not-for-profit company is the structure most commonly used for this type of organisation.

The entity will need to apply for deductible gift recipient (DGR) status to be eligible to accept philanthropic grants. As mandated by the Corporations Act, the not-for-profit company would be required to hold an AGM and issue an annual report.

The other potential options are a trust, incorporated association, joint venture, or partnership, none of which seem appropriate. Ultimately, the decision regarding the structure of the entity will be determined by the founding members and financial backers after appropriate legal advice.

A company constitution will need to be drafted which outlines the function of the Vegetable Collaboration Company and the rights and responsibilities of members and directors. A taskforce would be established to oversee development of the company structure and the drafting of the constitution. Only contributing collaborators would be invited to become shareholders of the company, although there should be provision for other parties to join should they wish to contribute in the future.



Organisational structure

It is proposed to administer the Vegetable Collaboration Company through the following three bodies:

1. A skills-based governance board
2. A core management team supported by appropriate contractors
3. A behaviour change expert panel



BODY:	FUNCTIONS:
Governance Board	<ul style="list-style-type: none">• Ensure that the company delivers to its mission and guiding principles• Oversee governance, financial management and accountability
Management Team	<ul style="list-style-type: none">• Delivery of the behavioural change strategy• Development of organisation and team members
Behavioural Change Expert Panel	<ul style="list-style-type: none">• Provide expert analysis and advice on marketing and social change interventions to the management team

The program's success will be heavily dependent on two quite distinctive skill sets embracing both commercial skills in marketing and public health skills in nutrition. Attempting to merge these two different mindsets and agendas could lead to damaging compromises, therefore, the Behavioural Change Expert Panel (explained below) will play a critical role in contributing objective marketing and social change advice to the management team.



Governance board

It is proposed to form a governance board of nine representative and skill-based directors, one of whom would be an elected chair. The process for appointing directors will need to be agreed by the founding shareholders and detailed in the company constitution. It must reflect the fact that there needs to be a balance between the public health interests on the one hand and the industry's commercial interests on the other. The directors could be nominated by the member organisations, but ideally, would be independent of each organisation. Furthermore, any government departments providing significant funding may also wish to provide nominations.

The skill set of the board members presents a challenge because at board level, there are multiple skill sets needed covering a deep understanding of the workings of public health and nutrition, knowledge of the modus operandi of the vegetable supply chain, a practical knowledge of implementing and managing a complex behavioural change and program, sustainability and environment and skills in corporate management and governance.

While the recommendation is to specify at least one director with government liaison and advocacy skills, in practice, all directors will be advocates for the organisation and both formally and informally lobby on its behalf. A key aspect of driving change will be to influence government policy and with a broad mix of director skills this can be advanced through multiple touch points with government including health, agriculture and trade at both departmental and ministerial levels.

Skill area	Number of directors
Public health	2 Directors
Vegetable industry production	1 Director
Vegetable industry supply chain or retail	2 Directors
Corporate governance (finance or legal)	1 Director
Marketing and communications	1 Director
Government policy/liaison/advocacy	1 Director
Sustainability and environment	1 Director

It is important that one of the directors is recruited on the basis of having the required leadership skills to effectively chair the board and is a respected high-profile and inspirational person with previous experience as a chairperson.

Because of the public good nature of the project, all of the directors on the governance board should be prepared to sit on an honorary basis without expectation of sitting fees.



Behavioural Change Expert Panel

A critical part of the organisational structure is to ensure cutting edge expertise is accessible to inform all the investment decisions. The successful Danish vegetable program ensured that there was one of the nation's most high profile marketing experts on the board to guide their campaign direction. The case study of Australian Milk Marketing presented later in this document also illustrates the importance of capturing high level marketing expertise in collaborative marketing programs. Other models were explored such as the Australian Industry superannuation structure whereby an entirely independent entity manages the marketing function while the sister entity manages the stakeholder relationships between all the contributing industry superannuation funds and collects the member contributions. Given the size of this vegetable program that approach would present a prohibitive cost overlay, although it does have the same intent of the structure proposed.

The Behavioural Change Expert Panel would advise the management team who would in turn act on their recommendations and report them to the board. It is proposed that the expert panel would provide high level advice on the following:

- All marketing and branding decisions
- Selection and management of creative and media agencies
- Overseeing and approving the communication materials
- Advice on behavioural change strategies and interventions
- Social change theory, research and global best practice in behavioural change.

It is proposed that the Behavioural Change Expert Panel would be a five-person advisory committee comprising industry-leading specialists with 'real world' experience in:

1. Marketing strategy and branding
2. Advertising and communications across all media forms
3. Behavioural change
4. Public health communication and intervention.

It is proposed that this expert panel meets quarterly to review all public-facing activities and the messaging of the Vegetable Collaboration Company. Because of the high profile nature of this program and the social good element, it is expected that the experts would contribute their time on a pro-bono basis and that none of the experts would have any affiliation with the appointed creative agencies or other service providers.



Stakeholder engagement

Facilitating two way communication between the wide range of stakeholders who may wish to be actively involved, affiliated or simply connected to this project will be important. While the CEO's role will be to deliver this at a high level, there will also be a great deal of internal and external communication required at a general level. Collecting feedback on the program will be just as important as communicating outwardly, particularly in the early years. For these reasons it is proposed to include a communications professional on staff.

Potential communications tools to be considered may include:

- Electronic newsletter
- Stakeholder only access to communications page on website and social media
- Regular 'in-depth' discussion groups with individual stakeholder cohorts
- Annual symposium
- Engaging an informal reference group to test marketing concepts and ideas.

The annual symposium could be run as a program within other industry conferences or conventions such as Hort Connections. It would entail a number of guest speakers on vegetable consumption and behavioural change with a briefing on the planned program for the next 12 months and progress on the program to date.

Careful selection of collaborators will be called for

As already mentioned, the stakeholders with a vested interest in driving vegetable consumption are very broad. It also includes those with extremist views in the 'anti meat' vegan movement, some of whom are overtly militant with a propensity for unlawful behaviour. This strategy is not intended to address the 'meat replacement' issue nor advocate for exclusively plant-based-diets, nor become a forum for special interest groups. While environmental considerations are certainly a driver of vegetable consumption for many Australians, including this discussion in the consumer marketing messages to any great extent would be a diversion from the intent of the program. However, the sustainability issue is important and as noted in Proposition 4, increasing the proportion of plant based foods in the national diet is an environmental sustainability imperative as elaborated on by the EAT Lancet Commission work at a global level (see Proposition 4). To that extent, sustainability should be on the agenda, as well as highlighting the Australian vegetable industry's advancements in the achievements such as reducing water and chemical use.

By the same token, it may be necessary to avoid inviting collaboration with some food processors who process vegetables in an unhealthy manner or major fast food retailers who claim to offer healthy foods but in reality, do not. It will be important to vet all collaborating partners to some extent to avoid clouding the issue and to ensure that all partners are aligned to the same objectives.



There are risks inherent in a multisector alliance

As a multisector alliance, the Vegetable Collaboration Company faces an elevated risk of failure on the basis that there will be two very different cultures and agendas within the organisation i.e. the commercial agenda of selling more vegetables and the health agenda of improving public nutrition outcomes. Having a mechanism to address conflicts or differences will be critical in the organisation's constitution, because to succeed in this instance the two agendas will need to be balanced.

The VegKIT program was the catalyst for an Australian academic study into the effectiveness of multi sector alliances (Wiggins *et al*, 2020). The study found that the longevity of an alliance is dependent on it reaching alliance goals as well as partnership satisfaction. The study found that the most successful alliances also had high levels of coordination, achieved by establishing clear roles for each partner and clear input from all parties on administrative processes such as meeting times, locations, and structure. The study found that synergistic alliances generally had one or more of the following attributes:

- A clear project purpose
- Effective coordination and information sharing
- An alignment of partner motives
- Clear governance structures
- Committed partners
- Effective leadership for decision-making.

Managing the potential conflicts that could exist between the public health agencies and the commercial sector regarding messaging is likely to be necessary at some point. It is essential that very clear guidelines and protocols be developed around what can and cannot be included in the messaging to ensure that the public health and nutritional aspects are not compromised by the interests of the commercial partners (e.g. the inclusion of heavily processed vegetables, etc.). Industry need to acknowledge that in order for them to benefit from collaboration on this agenda, the focus will have to be on 'healthy fresh and processed vegetables' not just 'vegetables' *per se*.

Ultimately, both parties must accept that in this case, the commercial interests are strongly aligned with the health interest and if the commercial partners are successful in selling more vegetables, then the program is more likely to have longevity. The commercial culture also requires a stronger focus on action than analysis.



Resourcing

It is recommended that the organisation be kept as lean as possible, outsourcing the operational functions to specialist service providers. Team members required would be:

Position:	Functions/skill set:
CEO	<ul style="list-style-type: none">• Leadership• Advocacy• Consultation
Marketing Manager	<ul style="list-style-type: none">• Delivery of the behavioural change strategy
Finance & Administration Manager	<ul style="list-style-type: none">• Financial Management and reporting• Administration
Administrative Assistant	<ul style="list-style-type: none">• Support services
Stakeholder Communications Officer	<ul style="list-style-type: none">• Stakeholder Liaison
Public Health and Nutrition Manager	<ul style="list-style-type: none">• Recipe development and coordination of material• Information translation• Engagement of health partners• Liaison with health departments• Behavioural science

The company would operate out of an office co-located or donated as an in-kind contribution by one of the shareholder members. A virtual office is also a possibility in the post-COVID 19 world.

The selection of the **CEO** will be critical with the appointee having the ability to be the ambassador for the program and manage as well as gain the respect of a diverse stakeholder group and build strong relationships with the board, expert panel, shareholders and government.

The **Behavioural Change Manager** will be responsible for managing the day to day activity of the behavioural change program, briefing and managing the communications agencies and conducting the performance monitoring.

The **Finance and Administration Manager** would be responsible for managing the funding partners, collecting and accounting for the finances, preparing the board financial reports and the budgeting.

The **Stakeholder Communications Officer** would be responsible for two-way communications with the wider body of stakeholders and supporters.

Because the program is likely to require a large amount of content development, a **Consulting Nutritionist** may be required to compile and vet recipes, liaise with the various health partners and government health departments and work closely with the **Marketing Manager**.



The **Administrative Assistant** would support the executive team and board administration as well run the office.

An annual business plan would be required with an operating budget but the first years budgets will need to be developed in line with the available funding and be responsive to the aims of the founding funders.





Case study: Australian Milk Marketing Business Model

The Big M flavoured milk brand was launched in Victoria in the late 1970s by the Victorian Dairy Industry Authority (VDIA). The authority was set up by Victorian Minister of Agriculture, Ian Smith, in anticipation of deregulation. He appointed a chair from the oat industry for independence.

Marketing manager of the VDIA, Peter Granger, developed a plan to introduce collective marketing, because at the time, over 27 small dairies in Victoria were all trying to market their own brands of flavoured milk, few of whom had any economies of scale or marketing expertise. The industry had tried to launch a collective reduced fat milk brand in the mid 70s and failed, so there was some resistance to his idea. This time however, a sound licensing and governance model was introduced, and the professional marketers were called in.

The VDIA engaged Australia's largest and most prestigious advertising agency George Patterson's to devise a fresh approach to milk marketing, creating the Big M brand, which was licensed to the participating dairies. The 27 local brands of flavoured milk were soon usurped by the Big M brand. As momentum grew, the VDIA made the important decision of setting up a brand management entity that was independent of the authority called 'Australian Milk Marketing' (AMM). AMM was a highly sophisticated organisation staffed by skilled marketers. AMM shareholders were the industry peak bodies representing producers and processors. The General Manager appointed to run AMM was a professional marketer with a FMCG background.

Over time, licencing fees would be collected for a suite of milk brands including the Rev reduced-fat milk brand. Licensing fees funded the brand and pack designs, advertising costs and market research as well as the technical development of the unique flavours for Big M and the formula for better tasting reduced fat milk. Product consistency was important to ensure that each product from the many dairies was true to the brand promise.

The important feature of the governance model was that AMM's marketing operated at arm's length from the industry shareholders, each of whom had their vested interests. AMM had two important separate structures:

1. A traditional **Governance Board** that reviewed the financial administration of the industry funds collected and monitored the return on industry's investment
2. A **Marketing Advisory Committee** with external experts who advised on the campaign strategies, the brand management and the underpinning market research.

The important act of separating the governance board from the marketing advisory committee enabled the AMM to bring in industry-best marketing expertise to validate their work and reassure the board. With endorsement from the advisory committee, the board had confidence to approve controversial and sometimes risqué campaigns and the appointment of brash new advertising agency, The Campaign Palace, who enabled the Big M brand to achieve the massive feat of outselling Coca Cola in route trade in Victoria. In 2000, when the Victorian dairy industry was deregulated, Big M alone was generating licence fees of more than \$6 million p.a. to fund the cutting edge marketing and the suite of trademarks were sold for more than \$60 million. These funds were donated to The Gardiner Foundation which invests in R&D to advance the Victorian Dairy Industry. The new owners of the Big M brand launched it nationally, but it never regained the success it had when guided by the expert committee of marketers.

The visionary investment in seed funding by the Victorian Government became responsible for one of Australia's iconic milk brands and the legacy of important industry development work from The Gardiner Foundation.



Section 3 | Funding

Seed funding

The Fruit & Vegetable Consortium will need to raise further seed funding to establish the Vegetable Collaboration Company because substantial development costs will be incurred before the entity can generate its own funds, including:

- Legal and accounting fees associated with registration of the company structures and documentation
- Development or resource materials for fund-raising
- Salaries
- Consultants and service provider fees
- Travel costs
- Costs associated with recruitment of the board, advisory committee and core staff.

While members of The Fruit & Vegetable Consortium may be willing to contribute the in-kind human capital to prepare much of the conceptual thinking, there will be escalating costs as the project gains momentum, meaning that development capital will be needed.

It is proposed to approach the Commonwealth Government for seed funding to commence the project. A budget for the project inception and funding application would need to be prepared before any investment is made in developing the creative elements of the campaign. It is estimated that a grant of over \$2 million would be required to establish the company, bring together the stakeholders and prepare the behavioural change campaign to the point of being ready for execution.

On-going funding

Given that the on-going benefits that flow from this program will be shared by multiple stakeholders across the health sector, government and industry, it is appropriate that a collaborative funding model be used. The program benefits of reduced health costs will flow to all tiers of government as well as well others such as health insurance companies; while the benefits from increased consumption will flow to all in the industry supply chain from input suppliers and growers through to retailers and food service businesses. A hybrid funding model is therefore proposed comprising:

1. A recurring annual grant from government
5. Annual corporate and supporter membership fees
6. Hort Innovation funds (representing levies from all vegetable growers)
7. Health industry contributions



8. In-kind contributions from program partners and NGOs
9. Sponsorships
10. Philanthropy
11. Self-generating revenue from operations such as licensing fees or web advertising.

Preliminary thoughts on how each of these funding sources might work are provided in the following pages.

1. An annual grant from government

It is proposed to seek recurring annual government grants totaling \$15 million per annum to fund the paid media components of the program. The Deloitte Access Economics model estimates that a 10% increase in consumption levels would deliver a \$100 million per annum savings in public health expenditure with the benefit shared by the Commonwealth and the States/Territories. This analysis only factors the impact from some cancers and CVDs and does not include the flow-on collateral of social and economic benefits. Based on this rate of return, the business case for investment for governments is compelling.

The ask of governments is for a long term, rolling 5 x 5 year funding agreement subject to performance review and renegotiation at the end of each five-year term.

Given the shared nature of the benefits and the cross-portfolio benefits to agriculture, regional development, industry and health, it is logical that the government funding be facilitated through what was the COAG platform and is now the National Federation Reform Council (NFRC). The issue has sufficient significance to justify that it be raised at the recently formed National Cabinet.

Although this ask of government comes at a time when the COVID 19 pandemic has strained all budgets, it could be argued that the need to improve the national diet has never been more important or timely, with more Australians cooking at home and evaluating their health more closely. Pre-existing chronic diseases associated with low vegetable consumption are also a risk factor for morbidity and mortality from COVID 19.

2. Membership fees

Corporate member

It is proposed that corporate members of the Vegetable Collaboration Company pay an annual membership fee that will largely cover the operating costs of the organisation. Corporate members would not just be from industry and may include the significant health organisations that are currently supporting The Fruit & Vegetable Consortium. A Corporate Membership would entitle participation in the decision-making process and may include other benefits such as:



- Usage of the brand and logo for product endorsement (with appropriate caveats as outlined later)
- Ability to nominate and vote for directors
- Access to the knowledge base and learnings from the various experts associated with the project.

The annual fee would need to be set by agreement, but in light of the significant funding levels being asked of the prime funding partners and the potential financial benefit to those with a commercial interest, the annual membership fee would need to be commensurate, so it is proposed that membership would cost something in the order of \$50,000 to \$100,000 per annum.

Supporter member

It would be appropriate to have a lower level of membership where members who are not participating in the decision-making can still be publicly affiliated with the program and use the logo, but on non-commercial branding only. The fees for supporter members would be an affordable fee but would allow interested parties to make a contribution to the cause and remain 'in the loop'.

3. Hort Innovation support

The proposal is that the bulk of the horticultural industry funding would come from Hort Innovation (this assumption is based on the premise that AUSVEG would be a business member and the fact that the vegetable levy does not cover all categories). Given the significant direct benefits that will flow to the industry and growers of all vegetable crops, an annual contribution of \$1 million per year would be equitable. In the absence of a vegetable marketing levy, it is proposed to make a funding application to the Hort Innovation Hort Frontiers Strategic Investment Fund, intended for step out projects such as this. Furthermore, Hort Innovation managed R&D levy projects (matched on a one for one basis by Government funds) could contribute to fund significant 'in kind' contributions such as market research and other activities that qualify under the terms of the Levy Act.

4. Health insurance companies

Given that health insurance companies would be major beneficiaries of any cost savings from improved health and the associated patient claims, a strong case could be mounted for each of the major insurers to participate as Corporate Members or they could potentially make a direct contribution as an industry through their peak body Private Healthcare Australia. Given the magnitude of the annual cost savings to national health as illustrated in the Deloitte Access Economics analysis, a \$2 million per annum contribution would deliver a strong return to the insurance industry over many years.



5. In-kind contributions from program partners

Rather than asking all partners to make direct financial contributions through membership (it is likely that corporate membership will only attract the most committed organisations), it is proposed to request in-kind contributions with the aim of a collective impact being equivalent to \$10 million per annum. The intention is to leverage and harvest the already existing investment in vegetable marketing through integrating everyone's efforts under an umbrella brand.

By design, the behavioural change program involves a multi-touch point, multi-intervention model with each of the collaborating partners contributing in a manner appropriate to their organisation and fit with their individual strategies is possible. The clear message from the stakeholder engagement process was that there is a high level of interest in being actively involved in the project but with the caveat that involvement would in no way compromises existing competitive advantage or organisational mission. For example, the highly competitive nature of food retailing means that each of the major supermarkets would want to be involved in very different ways from each other.

Many of the health organisations have a different concern whereby they wish to be involved but their mission means that their first commitment is to supporting people with the chronic condition they represent. These organisations could contribute in-kind by offering their data base or collaboration via tying in their own events and promotional activities.

The nature of the involvement of each contributing partner will need to be skillfully integrated with the overall strategy and the negotiated with each party. The following are some examples of the types of in-kind contributions possible:



Position:	In-kind contributions:
Growers and industry bodies	Market research through industry R&D levies, product donations for advertising and promotions, industry spokespersons for promotional events.
Supermarkets	In-store activity, POS materials, messaging in media advertising, meal solution ideas and convenience tips, value meal and 'what's in season' promotions, children's programs
Foodservice outlets	In-restaurant activity and vegetable menu promotions
Wholesale markets	Promoting independent retailers, weekly media on what's in season, supporting independent retailers with program branded point of sale materials.
Processed vegetable brands	Integration with their brand marketing campaigns
Packaging Companies	There is the potential for packaging companies to collect a voluntary levy on each unit of packaging sold, which they would be encouraged to match. This would generate a significant funding stream that could be used to sponsor branded events. Suppliers of retail packaging could print messaging on packaging materials.
Kitchen appliance brands and retailers	Educational advertising on usage ideas, featuring hero vegetable dishes. In-store promotions and cooking demonstrations.
Vegetable transport companies	Banner advertising on trailer curtains
Public Health and NGOs	Endorsement through association with the program brand will provide a halo effect. Data bases, websites and other communications vehicles could be leveraged. Content appropriate for these organisations would be developed as part of the program.
Media	It will be critical to get the media actively involved in the program each with their own dedicated programs. In particular there is an opportunity to integrate content into food and cooking shows/features.



Where possible it is desirable that the commercial partners would be encouraged to link the program brand to their own activity to gain maximum reinforcement of the program.

6. Supporter sponsorships

It is proposed to seek sponsorship funding for specific activities and events from parties with a vested interest in the program. The behavioural change program may include a wide range of events such as cooking and recipe competitions, specific vegetable promotions, sporting club activities, integration with existing schools programs, etc., many of which will lend themselves to sponsorship. For example, it is proposed to hold an annual summit to provide a forum for participating stakeholders.

Targets for sponsorships are likely to include businesses such as input suppliers, equipment and service providers, packaging companies.

7. Philanthropy

The organisation is likely to appeal to charitable foundations that have a mandate to improve health outcomes for Australians. The Vegetable Collaboration Company would need to seek Deductible Gift Recipient status to be eligible to attract funding from foundations and individuals who wish to support the cause. Philanthropy tends to be a highly irregular source of funding so this income stream has not been factored into the budgets but a significant bequest or charitable gift could be channeled to particular programs (e.g. cooking skills for youth). Grant funding through philanthropic trusts carries a significant administrative burden in funding applications and reporting so an administrative resource would be required to deliver this.

8. Self-generating revenue

As the consumer-facing aspect of the website and social media activity eventually comes to be a key influencer and information portal on all things to do with vegetables, this may drive increasing traffic and create the opportunities to link to other commercial websites (e.g. supermarkets, recipe or product websites) and eventually generate some on-line advertising revenue. There may also be opportunities to leverage revenue from licensing fees for use of the logo.

Funding agreements and code of practice

All funding arrangements would need to be secured by formal, contractual funding agreements that outline in specific terms the rights and responsibilities of each party.

The funding agreements need to include a code of practice component that binds funding partners to the guiding principles to protect the integrity and credibility of the program. It will be necessary to retain legal and accounting advice to advise on the details around the structure of these agreements.



Use of logo and brands

As the intention is to maximise involvement in the program and to rapidly build awareness of the brand. It is not proposed to charge a licensing fee to other organisations to use the logo if they are using it for the purpose of an 'endorsement' brand. However, there will need to be rigidly enforced agreements with respect to the use of the logo, given the associated intellectual property. This might take the form of a simplified licensing agreement permitting free usage of the logo within strict parameters. It is possible that the Corporate Members could be offered more extended use of the logo on packaging and in promotions as part of their membership arrangement, subject to compliance with the brand guidelines.

In time, as the profit and commercial value of the brand grows, it may be feasible to charge brand licensing fees.

A brand style manual and usage agreement would need to be commissioned.

Funding targets and indicative budget

The goal is to achieve a recurring annual funding stream comprising \$19 million in direct financial contributions and \$11 million in in-kind contributions as illustrated in the table below.

Funding targets

FUNDING SOURCE	ANNUAL TARGET
Government grants (Federal & State)	\$15 million
Membership fees	\$1 million
Hort innovation (including grower levies)	\$1 million
Health insurance companies	\$2 million
In-kind contributions from program partners	\$10 million
Sponsorships	\$1 million
On-line revenue	(longer term)
Total	\$30 million



Section 4 | Development & implementation

Development Process

The process for initiating this project will be to canvass the level of interest and commitment to invest/ participate in the project on the basis of the business model proposed. Communicating the proposed business model will require a 'road show' of presentations and entail meeting many potential partners to identify those who are the appropriate match. A resource kit would be required including a PowerPoint presentation, explanatory video and prospectus style document. Much of the information for these summary documents can be drawn from this document.

This initial round of discussions would then be followed up with negotiations and the signing of a MOU with those parties who have indicated a preparedness to be involved under the terms outlined.

At the end of this process, when there is an understanding of the level and nature of funding possible, the organisation will be in a position to start developing the details around the business plan. It will take at least a year to negotiate the funding agreements and develop a detailed business plan.

Development task force

Getting the detail right about the model and implementation plan will be critical to the success of the program. It is suggested that the CEO be recruited at the outset of the project to lead the implementation of the project. It is further recommended that a skill-based taskforce be appointed to oversee the development of the implementation plan. This would comprise personnel skilled in setting up a new business entity as well as those with marketing and communications and government lobbying experience. It will be necessary to retain a panel of advisers to draft the required legal, accounting and administrative documentation. During the development stage, the CEO and task force would report to the F&V Consortium board.

Researchers at the Australian Prevention Partnership Centre (APPC) have developed a useful framework for implementing integrated mass media behavioural change campaigns such as this one, based on their detailed forensic examination of previous preventative health campaigns in Australia. Once a CEO and working group has been appointed, it would be most useful to apply the APPC's so-called 'FLOWPROOF framework' in the development of this campaign, the steps of which are outlined below:

1. Formative research
2. Logic model/ use of theory
3. Objectives (including performance indicators)
4. Well-resourced (adequate resources and necessary partnerships)



5. Process evaluation (Did we implement as intended? What did we implement?)
6. Run the campaign (media weight TARP/gross rating points, type of scheduling and duration)
7. On-the-ground support (infrastructure, services associated with the campaign, public relations and earned media)
8. Outcomes (campaign impact/outcome evaluation)
9. Financial and summative (integrated) evaluation of the campaign, including breakdown of all costs incurred and returns on investment.

This framework is intended to be implemented cyclically reverting back to Step 1 as the program is refreshed (for details see Grunseit *et al*, 2016).

As noted in the above framework, a program logic model would need to be developed with clear, measurable program goals as well as specific campaign goals.

Program monitoring and review

It is recommended that a research partner be appointed to provide ongoing, independent monitoring of the organisation's activities and project outcomes against the logic model. The logical body to do this would be Australian Prevention Partnerships Centre.

The program will need to be reviewed from the perspectives of both commercial return on investment as well as impact on health outcomes. For the academic stakeholders and government, a program logic model will be required to measure success on health outcomes specifically; while for commercial partners a series of ROI performance targets will need to be nominated, measured and monitored. Communication of these health and financial measures would be included in the entity's Annual Report.

Check list of the recommended implementation steps

- ✓ Approval of this business case by The Fruit & Vegetable Consortium Members
- ✓ Preparation of briefing presentation
- ✓ Preparation of prospectus
- ✓ Preparation of MOU
- ✓ Briefing to government
- ✓ Briefing to potential industry partners
- ✓ Briefing to potential health sector partners
- ✓ Signing of MOU with committed parties
- ✓ Drafting of constitution



- ✓ Establishment of entity
- ✓ Appointment of CEO and working task force
- ✓ Review and validation of the formative research (FLOWPROOF STEP 1)
- ✓ Development of logic model (FLOWPROOF STEP 2)
- ✓ Setting of objectives and performance indicators (FLOWPROOF STEP 3)
- ✓ Assessment of resources i.e. confirming financial commitments and budget setting (FLOWPROOF STEP 4)
- ✓ Recruitment of additional team members
- ✓ Development of the behavioural change strategy creative concepts
- ✓ Delivery of the creative campaign and corporate branding.
- ✓ Appointment of a research partner to independently monitor and review activity and results



Part C: The behavioural change strategy

This part of the business case has been developed in collaboration with behavioural change experts The Shannon Company.

**Behaviour
Change.**
The Shannon Company



Foreword to Part C

Part C of this document has been prepared with the intent of it ultimately becoming the basis of a briefing document to brief creative, media and promotional agencies so that they can prepare detailed proposals to deliver the specialist work required. Some of the detail for the creative agencies is in the report appendix.

Part C is essentially the blueprint for the mechanics of the behavioural change program outlining the foundation for a branding strategy and the advertising component of the program as well as suggesting a range of potential behavioural change interventions that could be adopted. This blueprint will also guide the development of an annual business plan (which will have specific budgets and timelines) as well as guide the implementation of the program by the new management team. The entity's first business plan will assess which of these activities should be prioritised, based on the available budget, partners, the advice of the creative agency and the theme of the branding and advertising component. The first years of the program may need agile management and some flex in the business plan to maximise *ad hoc* opportunities as they arise. The founding funding partners will also require a say in the shaping of the early years of the program.

Part C also attempts to provide a broad description of the underpinning science of behavioural change in order to provide assurance to members of the collaboration that this is the correct approach for the vegetable consumption challenge. The depth of thinking on behavioural change has been drawn from The Shannon Company's practical experience and long term association with Monash University's BehaviourWorks. The collaboration with McKINNA *et al* for this project has included several briefing and brainstorming sessions and an expert discussion group.

As is standard practice in marketing, a vegetable consumer segmentation model has been developed to assist the creative agency to understand the range of vegetable consumers in Australia and their motivations so that interventions and advertising campaigns can be targeted effectively. The model has been developed by McKINNA *et al* with input from the Shannon Company. While there has not been sufficient budget in this assignment to validate this specific model with broad quantitative research as is academic practice, it is founded on a robust evidence base of McKINNA *et al*'s many years of researching grocery buyers generally and vegetable buyers specifically, across all states of Australia. The intent is that this segmentation model would be validated by ongoing qualitative and quantitative research over the life of the project.



Section 1 | Why a behavioural change strategy?

The blockers to increasing vegetable consumption are varied and complex – these have been well documented in many reports available on the Hort Innovation website. As the behavioral segmentation model in this part of the report indicates, there are five distinct clusters of behaviors evident in Australian vegetable consumers, each of which requires completely different messaging and interventions.

Although advertising can be targeted to some degree, it is essentially broad brush, focusing on just one touch point with a ‘one size fits all’ messaging. A behavioral issue such as vegetable consumption needs to be far more nuanced in its approach, with distinctly different interventions for each segment and sub-segment that infiltrate their various meal occasions. Furthermore, the strategy needs to evolve over the years to reflect the changing dynamic as behaviors begin to shift.

A behavioural change campaign drives sustained change of habits, whereas an advertising campaign drives sales spikes

Behaviour change programs are not advertising campaigns, although advertising can be one of the critical components. Behaviour change programs usually include a type of social marketing that ‘stitches together’ a range of interventions and coordinates the collective efforts of multiple interested parties around a common framework. In this case, the advertising and interventions will be linked by a common umbrella brand.

A US study by the US Produce for Better Health Foundation (Thomson, 2011) reviewed over 57 programs to increase consumption of fruit and vegetables and found that statistically significant increases in consumption can be achieved with a behavioural change strategy. It also emphasised the importance of a collaborative approach in implementing behavioural change programs with input from government, industry and the community. In Australia, we are fortunate to have global best practice examples of behaviour change programs that have all been evaluated and also provide hard evidence about what is required to achieve sustained success.

TAC road toll

Victoria’s road safety journey started with a media-driven campaign by The Sun newspaper called ‘Declare War on 1034’, which was the number of deaths in 1969 on Victorian roads. As a result, Victoria became the first place in the world to make seat belts mandatory. It was the first instance of community engagement pressuring significant policy change that led to profound behaviour change.

The campaign was followed by a series of regulatory interventions including road safety cameras, random breath testing, new licensing regimes L and P plates, stiffer penalties, a demerit system, as well as driver education, better road design, intelligent roads, wire barriers, variable speeds and of course evolving marketing



and advertising campaigns over the years. This program of 50 years is a world exemplar in road safety.

Quit

The Quit program similarly has drawn on increased taxation and retail laws prohibiting the display of cigarettes and selling to minors, banning advertising and sponsorship, medical influencers, plain packaging laws, warning signs, banning smoking in restaurants, pubs, public spaces, etc., as well as consistent mass and targeted marketing. The combination of activities was effective in changing the social norm of smoking to non-smoking.

It is important to note in this effort, that even after commencing activity in the 1970s, Government continues to spend heavily at approximately \$30 million p.a. from 2010 to 2013; and \$8 million p.a. from 2013 to 2018. This consistent and strong activity aligned to initiatives of increased taxation, no point of sale, plain packaging, and blunt warning images. Current smoking rates are just above 10% and importantly within the 12 to 15 years age group they are under 5%.

Established frameworks underpin these successes

The above two examples are programs that harness both collective impact principles and behavioural change science applied through a tested framework.

All successful sustained behaviour change programs are founded on a number of organisations working together with common purpose e.g. reduce the road toll, reduce the number of workplace accidents, increase the savings rates of working Australians, reduce smoking rates and harm, reduce gambling harm, increase the number of women exercising, etc.

The groups that typically come together include governments of all tiers, government entities, the not-for-profit sector, industry and media.

Collective Impact

Five conditions of collective impact that John Kania and Mark Kramer originally identified in the Stanford Social Innovation Review (Winter 2011) are still considered the core in 2020:

1. **Common Agenda:** All participants have a shared vision for change that includes a common understanding of the problem and a joint approach to solving the problem through agreed-upon actions.
2. **Shared Measurement:** Agreement on the way success will be measured and reported, with a short list of common indicators identified and used across all participating organizations for learning and improvement.
3. **Mutually Reinforcing Activities:** Engagement of a diverse set of stakeholders, typically across sectors, coordinating a set of differentiated activities through a mutually reinforcing plan of action.
4. **Continuous Communication:** Frequent and structured open communication across the many players to build trust, assure mutual objectives, and create common motivation.

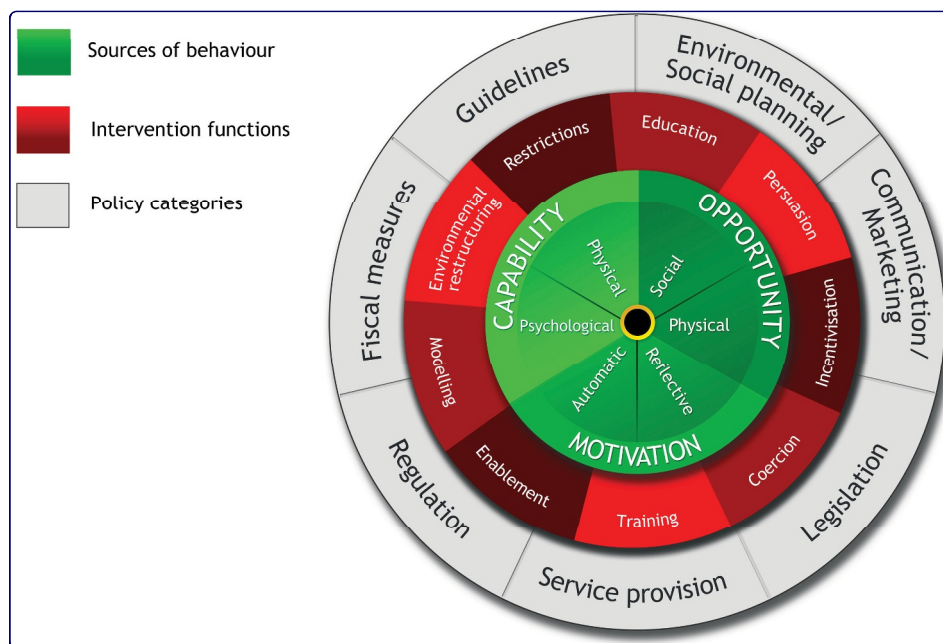


5. **Backbone Support:** Ongoing support by independent, funded staff dedicated to the initiative, including guiding the initiative's vision and strategy, supporting aligned activities, establishing shared measurement practices, building public will, advancing policy, and mobilising funding. Backbone staff can all sit within a single organisation, or they can have different roles housed in multiple organisations.

These principles, when applied through the behaviour change framework to ensure integration and coordination of all actions, drive sustained change.

Professor Susan Michie of University College of London has developed a widely used model 'The Behaviour Change Wheel' to frame the way the 'systems' approach needs to be integrated across key components:

The Michie behaviour change wheel



Source: The Shannon Company

Analysis of all successful, long term change programs demonstrates that elements of all components are at play over time and in varying degrees of weighting of importance in the journey.

The recommendations that follow are built from twenty-five plus years of practical experience in working on major behaviour change programs , and ongoing study of Behavioural Science through BehaviourWorks at Monash University <https://www.behaviourworksaustralia.org/> .

BehaviourWorks was co-founded by The Shannon Company, Monash University and seven government departments from the Australian, New South Wales and Victorian governments. BehaviourWorks has over 50 full time researchers and PhD students undertaking practical research programs on behaviour change. The



mission of the organisation is to bring leading behaviour change researchers and practitioners together to find behavioural solutions to real-world problems. The behaviour model and process has been developed on the basis of a study of global best practice.



Section 2 | The proposed behaviour change model

The examples of behaviour change strategies cited already have been based on two behaviour change models:

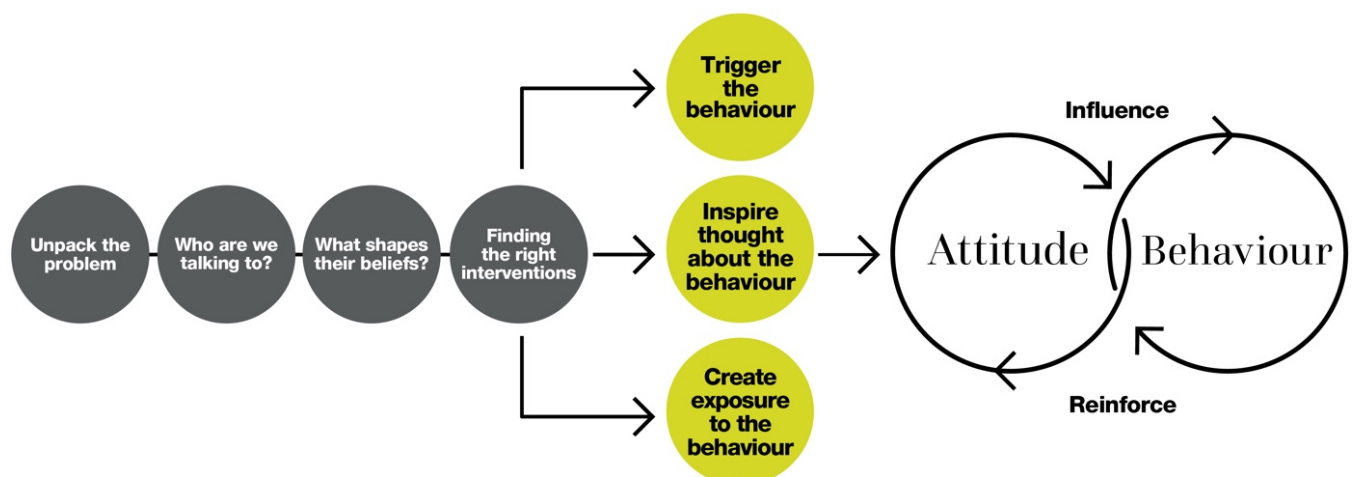
1. The Shannon Company Behaviour Change Model
2. The Shannon Company Intervention Tool Kit.

Both models have been developed in conjunction with Monash University's BehaviourWorks' Directors, Professor Liam Smith and Dr Jim Curtis and are designed to make the academic theory more accessible and relevant as practical tools in building comprehensive behaviour change programs

The Shannon Company's 'Behaviour Change Model' and 'Intervention Toolkit' are both tried and tested and confirmed by other successful programs such as conservation of water (Victorian Government Our Water Our Future/Target 155), encouraging superannuation savings and the reduction of workplace injuries with WorkSafe. While a key aspect of many of these government managed programs has been regulatory change accompanied by highly targeted advertising campaigns, the framework and lessons learned can be applied to this challenge of driving vegetable consumption.

The Intervention Toolkit framework has been developed in collaboration with Monash BehaviourWorks and is based on the Behaviour Change Wheel model for societal change developed by Professor Susan Michie of University College of London as outlined below.

Behaviour change model



Emotional Truth



Elements of the model

Context and biases

- What is the context in which we are asking our audience to perform a specific behaviour?
- What biases are in action, e.g. confirmation bias, status quo bias, etc.?

Beliefs

Gaining a deep understanding of the belief structures of our audiences is critical:

- Is there habitual behaviour at play?
- What norms are in action?
- Do people have the knowledge, skill, autonomy and access to perform the desired behaviour?

The power of an emotional truth

We are emotional beings and there are a number of emotional motivators (e.g. sense of wellbeing, feeling secure, belonging, self-image, etc.) to draw on. These are essential to ensuring our communication connects.

The building blocks of the behaviour change model

Belief structures are based on our habits, the context of our lives, motivators and barriers (including biases), the attitudes, the perceived norms, our capability and opportunity to perform the behaviour.

These belief structures are the predictors of behaviour and the areas to be addressed through the chosen interventions. BehaviourWorks define them as outlined in the following table.



BehaviourWorks belief structures

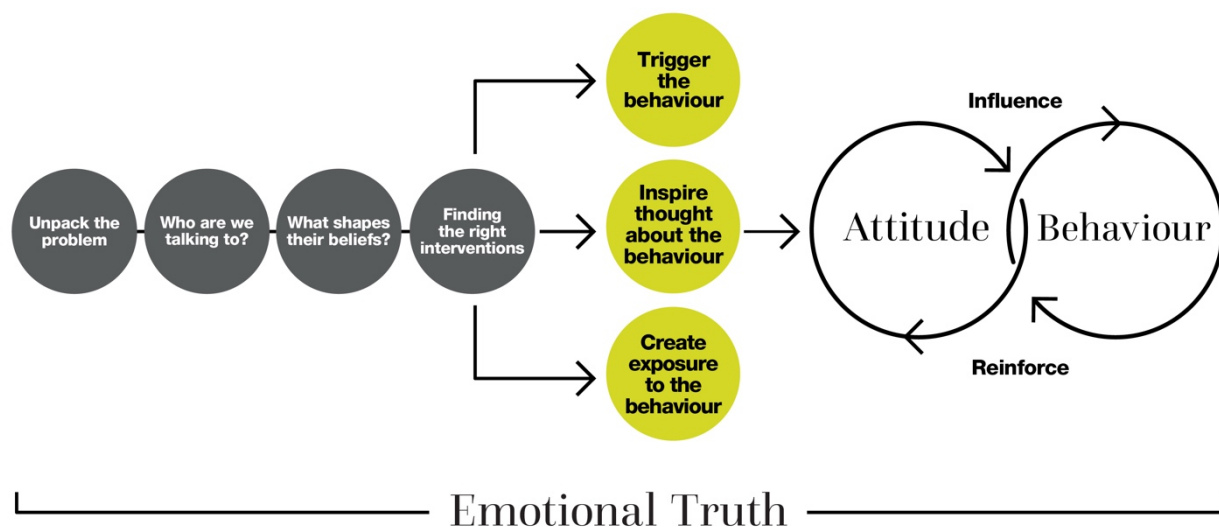
Habits	Ingrained habits help us predict behaviour. The best predictor of future behaviour is how we behaved in the past. The challenge is that habits are also the hardest to break and reform.
Attitudes	An attitude is whether we think the behaviour is a good or bad thing to do, based on the outcomes we think will result from doing it. Attitude towards the behaviour predicts the behaviour.
Perceived norms	There are two types of norms: injunctive & descriptive. 'Injunctive norms' are our perceptions about what people who matter to us would think about us doing a behaviour. 'Descriptive norms' are our perceptions of what most people are doing i.e. when most cars speed past you on the freeway, it sends a collective message that it's ok for you to speed.
Perceived control	Our perception about how hard or easy a behaviour will be to take on, influences whether or not we will do it. Control is usually grouped into ability (Do we have the physical, mental and financial capacity to do the behaviour?) and autonomy (Is there the opportunity to do the behaviour, or are there factors outside our control)?
Biases	Biases are inclinations or prejudices we hold. 'Conscious' or 'explicit' biases are attitudes and beliefs we know we hold. 'Unconscious' or 'implicit' biases are social stereotypes about certain groups of people or things we form outside our own conscious awareness.

Source: BehaviourWorks, Monash University, The Shannon Company



Section 3 | Application of the model

This behavioral change strategy has been structured around the tested Shannon Company model below:



Unpack the problem

The core problem is that Australians are not eating anywhere near the recommended number of serves of vegetables per day and that this is leading to poor health outcomes, the exponential growth of the public health costs and flow on economic, environmental and social impacts.

There has been a large amount of consumer market research conducted over the past decade to gain an understanding as to the reasons for the low consumption levels of vegetables. The list below has been drawn from the literature scan of Hort Innovation documents (McKINNA *et al*, 2018), feedback from the project reference group and various reports reviewed for this study:

- Unsatisfying eating experiences due to lack of preparation skill, routine habits, lack of inspiration and poor meal planning skills
- Lack of knowledge, confidence and skill around buying and storing vegetables
- Fear of wastage
- Perceived high cost of vegetables
- Poor sensory acceptance - vegetables lack sensory characteristics that align with innate preferences
- The failure to learn to like vegetables at a young age leading to a lifelong aversion



- The stigma of vegetables for kids and the resulting impact on family meals
- Family dining compromises due the differing schedules, age differences in blended families and diet needs
- Inconsistency of quality, availability and price
- Lack of convenience relative to other foods
- Availability of unit size relative to household needs
- Strong distribution and marketing by the snack sector
- Low presence of vegetables in snack and convenience outlets
- Access to fresh food, particularly in rural and remote communities.

In summary, consumers do not consistently have a good experience with vegetables for a multitude of reasons. This clearly indicates that there needs to be a set of quite diverse interventions to neutralise these blockers.

Who are we talking to? (market segmentation)

The foundation for the development of the behavior change strategy was to first understand the market. The accepted technique that marketers use to do this is to develop a consumer segmentation model. In this case, that model identifies the various clusters that exist in terms of Australian behaviors and motivators around vegetables.

For marketers generally, the purpose of a market segmentation model is to provide a framework to address a particular aim, be it to build household penetration, increase frequency of consumption, build brand loyalty or other. A market segmentation model enables the following:

- To break the market down into groups of defining segments according to their differing behaviours and motivations, so that marketing messages can be more targeted and therefore, more effective
- Provide profiles that outline how each segment can best be reached
- Provide clear cues as to the different strategies required to motivate each segment.
- The global study by Raaijmakers *et al*, (2018) found that tailoring of messages in fruit and vegetable consumption campaigns was critical for successful campaigns and interventions. A number of other studies reviewed in the research reinforced the finding that when messaging and tactics are customised to suit specific market segments, the results were more pronounced. The cluster analysis study by Darian and Tucci (2013) in the USA also proved the importance of tailoring marketing messages using consumer segmentation for improving vegetable consumption specifically. They noted that segmentation



based on beliefs and attitudes crossed all household sizes, education and income levels as per the assumptions made in the segmentation model for this study.

- It must be noted that segmentation models are highly specific to purpose and in the case of food, specific to cultures. A qualitative study by McKINNA *et al* into the drivers of milk consumption in several English speaking countries, found that different cultures drink milk in different ways and for different motivations. The same may be argued for vegetables.

Most market segmentation models are based around demographics and socioeconomics. However, after reviewing the extensive array of consumer research reports commissioned for the vegetable industry by Hort Innovation (McKINNA *et al*, 2018), it became clear that such a model would not work for this project because the various behavioural segments span all demographic and socio-economic cohorts.

A Hort Innovation study by Colmar Brunton (2015) did produce an Australian vegetable segmentation model, but this was based on a very small sample of six focus groups with household shoppers (one in each state and only four of which were conducted in-person), although it did also deliver 12 in-store interviews and have a supporting quantitative study of 1,032 respondents. This segmentation model was essentially developed to provide insights for vegetable marketers specific to each of the major commodity categories. The model produced four segments that do broadly align with the segmentation model developed for this project. It was elected not to use the Colmar Bruton model because in authors' view and much broader experience, it did not articulate the segments in a manner that would help marketers to design advertising and communications responses that capture the nuances of each segment. The Fruit & Vegetable Consortium members are also aware of global vegetable consumer segmentation studies, but in this case, the Australian context is critical.

The customised segmentation model developed for this campaign has been designed specifically to address the issue of low and declining consumption. The model draws on the McKINNA *et al* team's extensive body of knowledge and insight gained from over 30 years of conducting consumer focus groups on vegetables specifically and grocery shopping and meal planning generally. The segmentation focuses on adults because they are the key grocery buyers and decision makers and, while it is undisputed that children do have an impact on family meal choice, there are already many programs targeting children that could be embraced by this umbrella program (e.g. INFANT, VegKIT and state based programs).

Marketing and behavioural change is essentially dealing with human behaviour. Although science and market research can provide some guidance, ultimately judgements need to be made by skilled behavioral change and marketing professionals. A market research project to develop a segmentation model with any degree of rigour involves a very large investment with both qualitative and quantitative research of large sample sizes to cover all cohorts. It also involves complex multivariate analysis. McKINNA *et al* has delivered such projects



previously, which have had budgets in excess of \$1,000,000. An investment of this size would be difficult to justify at this stage of the project.

What shapes their beliefs?

Consumers are bombarded with information and misinformation from a myriad of sources, particularly social media. This is especially the case around diet and nutrition where conflicting advice is commonplace.

According to the Colmar Brunton vegetable consumer research (2015), key influencers that shape consumer beliefs on vegetables include:

- Recipe inspiration from books, magazines and on-line searches
- Talking to independent retailers and farmers at markets
- Word of mouth from friends and relatives
- TV cooking shows
- Websites
- In-store displays.

The body of consumer research projects from the past decade commissioned by Hort Innovation were reviewed in the McKINNA *et al* report that preceded this business case (2018). This exercise identified a number of consistent themes around the blockers to vegetable consumption. Many of these barriers are summarised by Costantoura in a literature review for project VG12092 (2014). These blockers are all part of the consumer belief system regarding vegetables:

- The less than satisfying eating experience
- The lack of skill and confidence in buying, preparing and serving vegetables
- The fact that vegetables are treated as secondary, side of plate accompaniments to a main meal
- Intense competition for the food dollar
- The convenience factor
- Perceived high cost
- Fear of wastage and unit size relative to the needs of the household
- Accessibility to vegetables in out-of-home situations
- Children tend to apply a stigma to vegetables which influence what is eaten by the whole family
- Lack of knowledge of the specific nutritional and health benefits of each vegetable.



Finding the right interventions

Behaviour change programs are designed to create new societal norms of behaviour that improve our way of life. They are implemented through an integrated program of interventions across multiple layers of audiences as previously highlighted. The interventions are designed to work in harmony with each other and to evolve over time through learnings established from the ongoing measurement and evaluation of activities. The intervention framework used by The Shannon Company is a simplified tool of Professor Michie's Behaviour Change Wheel and is outlined on the model following:



An essential element of the proposed behavioural change program is to adopt the collective impact model and integrate and leverage the vast amount of activities that are currently being undertaken by the commercial parties and various public health agencies. The project is likely to have a strong focus on coordinating current activity, rather than reinventing new versions. Examples include:

- Coles runs good value cooking tips with Curtis Stone
- Woolworths conducts weekly 'market report' TV commercials
- The Heart Foundation has a database of beautiful recipes and a number of resources on nutrition
- Many schools now have their own veggie gardens due to the Stephanie Alexander Kitchen Garden program
- Then there are also popular media shows MasterChef, My Kitchen Rules, etc., which have changed Australian thinking about food and have been highly influential and inspirational.
- There are a myriad of programs run by State Governments and others around the country.



With 50 plus members of the consortium this behavioural change strategy has been designed to embrace and integrate existing activities and partner programs such as VegKIT and INFANT including databases around an agreed strategy and to encourage each of these parties to become part of the collective effort, some of which may be an in-kind contribution rather than cash.

The proposal is to link all of these activities under an active umbrella brand which serves to reinforce and enhance the visibility and impact of the collective effort. When integrated with broader intervention strategies outlined on the following pages and under a unifying 'brand', enduring change will happen.

Attitudes and behaviours

The following schematic outlines the linkage between attitudes and behaviours.



Source: The Shannon Company



Section 4 | Australian vegetable consumer segmentation model

About this segmentation model

- The segmentation model that has been developed especially for this project is a conceptual, working hypothesis and like most marketing projects, it is not statistically validated. It is intended that over time, the Vegetable Collaboration Company would invest in research to build a deeper understanding of these segments.
- The model is an informed judgement based on many years of qualitative and quantitative consumer market research by McKINNA *et al* and the in-depth research for this and prior business cases associated with this project. The McKINNA *et al* team estimates that the body of this work spans more 300 focus groups on vegetables alone across all states and territories; and thousands of survey responses including the management of Australia's largest fresh food diary study for four years.
- While existing segmentation models were considered, they were discounted because the overseas studies are not tailored to the motivations of Australian consumers and the most recent Australian study was based on a relatively small sample size compared to the body of research undertaken by McKINNA *et al* over the past 20 years.
- Because these are 'behavioural' segments rather than 'demographic' segments, they span all demographic and socio-economic cohorts, e.g. Veg Avoiders range from blue collar workers to stockbrokers and Veg Resisters are not all children. Within each segment there are sub-segments which to some extent, may fall along demographic household structure and socio-economic lines.
- The segment names are intended for use in briefing the creative agencies and categorising and analysing behaviours. They will never be used in public. They are important because they reflect the emotions of the segments so the choice of names may well spark a moment of creative genius in the creative team .

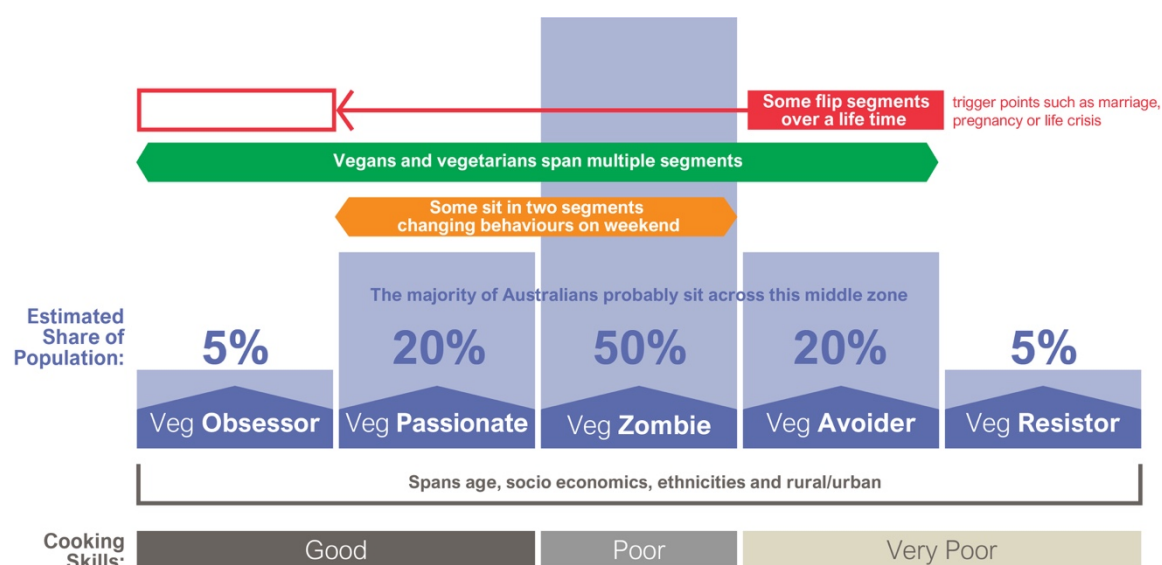




Source: McKINNA *et al*

The proposed vegetable consumer segmentation model essentially segments the market based on the relative consumption levels of vegetables and the degree of motivations for eating them. A Wageningen University study on segmentation specific to fruit and vegetable consumption (Raaijmakers *et al*, 2108) claims that this approach delivers a higher level of insights for development of interventions and marketing campaigns and that when consumer consumption levels and motives are combined in the segmentation model, it is possible to draw out a fuller picture of each consumer cluster. This segmentation model aims to do just that describing the positions that consumers hold on vegetables from 'live for them' with the high consuming Veg Obsessors to 'hate them' with the very low consuming Veg Resistors.





Source: McKINNA *et al*

Key points on the spectrum of vegetable consumers

The above schematic serves to illustrate the spectrum of Australian vegetable consumers and where they sit within the broader community. Noteworthy comments are:

- Some cohorts may change segments over their lifetime and that move may be triggered by a key life milestone or crisis
- Some people span two segments because they behave differently mid-week compared to weekends when they have time to be a Veg Passionate and cook more.
- Vegans, vegetarians and pescatarians span multiple segments.
- Socio-economic factors are not as pronounced in this model because poor vegetable consumption is a population wide issue i.e. if 92.5% of the population is not eating the mandated serves of vegetables, it cannot be claimed that this is primarily an issue for low socio-economics cohorts only.
- It could be argued that previous campaigns have often been targeted at the smallest segments of Veg Resistors or young children and as such, have missed an opportunity to influence the mass of the population across school aged through to adult Australians who are Veg Passionates, Veg Zombies and Avoiders.



- The proportion of the population in each segment is a rounded off estimate for the purposes of illustrating the consumption curve, but the breakdown is broadly in proportion with the indicators of vegetable consumption evident in the National Health Survey. Although there are variances in the data, it indicates that around 7.5% of Australian adults consume five or more serves of vegetables per day (arguably Veg Obsessors); around 85% of adults consume between 1 and 4 serves per day (arguably Veg Passionates, Zombies and Avoiders); and around 6% of adults consume less than one serve per day or none (Veg Resisters).

The five behavioural segments are profiled in brief on the following pages. Details about the core beliefs of each segment, their behaviours and influences are tabled in the appendix. The detail in the appendix should be included in the creative brief as it will help the creative team develop targeted messages.





"I cook everything from scratch, no chemicals if I make it"

"Eating more veg is better for us and the planet"

"Organic is a small price to pay to keep my children healthy"

"My training program means I follow a strict menu plan of mostly vegetables"

Diversity of Veg Obsessor



The Veg Obsessor spans urban and regional dwellers of all ages. It includes fitness fanatics of many sports, elite athletes, lovers of vegetable gardening, organic consumers and those who aspire to a natural, chemical-free and more wholesome lifestyle. Some other segments may flip to become Veg Obsessors later in life after a serious health crisis such as a cancer scare, a new sporting obsession, pregnancy or other life event.





"All my kids can cook. It's a life skill I insisted that they have"

"I relish the seasonality of veg - soups in winter and salads in summer"

"I'm not familiar with a lot of Asian herbs – I'd love to learn more"

"I love cooking for the whole family and passing down my Nonna's tips"

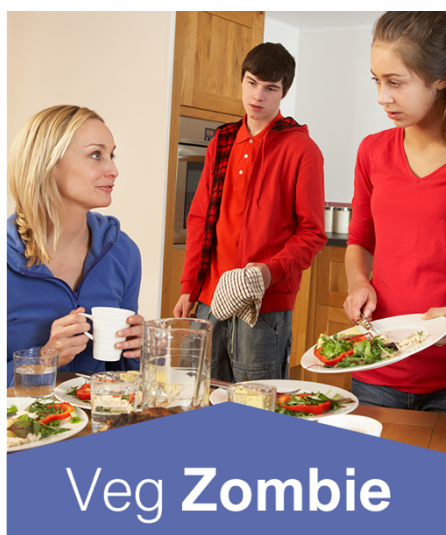
Diversity of Veg Passionate



Veg Passionates love cooking and indulging friends and family. The segment embraces Australians of all ages and ethnicities. Vegetables are core to that as they believe that they are truly delicious and it is simply not a meal without them. They cook around the vegetable seasons and it influences their menu planning. They associate food with social connections and so preparing vegetables is an important part of keeping their family healthy as is passing on cooking skills and family recipes.

Balancing health and deliciousness can sometimes be a challenge. For some overindulgent Veg Passionates, there may be a time in life when they verge towards becoming a Veg Obsessor due to high blood sugar or cholesterol becoming a problem.





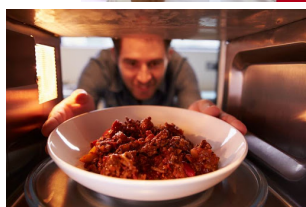
"It's a nightmare trying to get kids to eat their veggies"

"With everyone's food issues, I have no idea what I am going to cook for dinner tonight"

"I tend to cook the same veg, the same way everyday – its easy but does get boring"

"I don't buy too many vegetables because I'm sick of throwing them out and wasting food"

Diversity of Veg Zombie



Veg Zombies know that they should eat more vegetables but it is a constant challenge. Their vegetable dishes are usually boring and unappealing largely due to limited cooking skills, lack of time and inspiration. For many it is family pressures that make cooking a drag but there may also be Veg Zombie singles who simply cannot be motivated to make the effort to cook for one. Advertisers actively target this group with 'meal solutions' such as supermarket meal promotions, home delivered meal kits or meal components (e.g. taco kits).





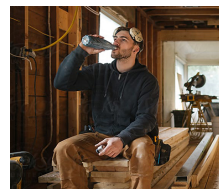
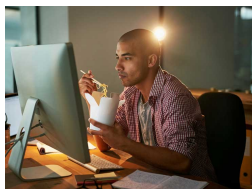
*"I never learnt cooking at school
I'm OK on the BBQ"*

*"It's not as easy to get the
weight off as it once was"*

*"It's easier to make
toast than muck
around cooking
vegetables"*

*"We've got a nutrition program
at footy now, so I'm psyched to
get fit again"*

Diversity of Veg Avider



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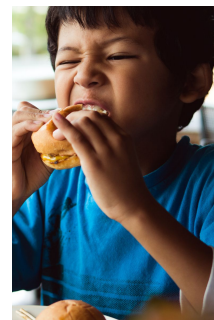
Veg avoiders are not just young single males with poor cooking skills. They may include the children who throw away their lunch everyday (probably because Mum is a Veg Zombie and it is unappealing) or the single household older person who has simply given up caring. The Veg Avider usually knows that they should be eating more vegetables, but why bother when Uber Eats is so convenient and delicious or sometimes a piece of toast is easier?





*"I don't care!
I'm just not eating them, and
you can't make me."*

Diversity of Veg Resistor



Veg resisters are the most difficult behavioural segment. They usually have psychological issues associated with their behaviours such as an eating disorder, depressive disorder or alcoholism. Their views are fixated.



Section 5 | Strategic targeting of segments

Primary targets



The intention in this behavioural change strategy is that there will be an ongoing, sequenced behavior change campaign which selectively targets each behavioural segment. It is important to the ongoing success of the program that it has some early wins. For this reason, priority will be given to the larger segments which will produce the biggest gains or a low hanging fruit.

There is most to be gained through focusing on the Veg Zombie segment as one of the primary targets as it may represent as much as 50% of the population. The aim is to migrate Veg Zombies into the Veg Passionate segment. The common ground being family wellbeing and desire for more in life.

While designing the interventions primarily for the segments of Veg Zombies, and Veg Avoiders there will be some core activities that will be seen and experienced by other segments. This 'spill over' effect will positively impact the Veg Passionate segment, who may represent as much as 20% of the population, to lift their consumption of vegetables. It should be relatively easy to increase the consumption of the Veg Passionate segment, as they are already on the journey. They just need consistent reminders and timely inspiration to eat more.

Secondary target



Over time, the interventions and programs of activity will evolve to embrace a second phase opportunity. As the behaviour change program evolves and we gain more insight into what is working against these groups through



‘eavesdropping’ on the broader behaviour change activity, we can begin to design interventions for different cohorts.

The secondary target will be the Veg Avoider who will either migrate to Veg Zombie or with a more drastic response, could even ‘flip’ to Veg Passionate or even Veg Obsessor. Such a drastic flip can be initiated through providing the appropriate stimulus for them so that when a life event e.g. a new relationship, health scare, career move, pregnancy or new sporting interest, etc. does arise, they have the tools, support and messaging to make that flip.

While the broader population can be actively addressed through mass marketing activity and interventions targeted at each segment, the Veg Resistor segment is unlikely to respond to marketing, and will require specialist interventions from dieticians, eating disorder specialists, educators or psychologists. Programs such as VegKIT are active in influencing this cohort.



Section 6 | Behavioural trigger points

There are two key trigger points that need to be targeted:

1. The touch points in the vegetable consumption experience journey
2. Life stage milestone

Trigger point 1: Touch points

Meal planning :	Resolving the question of ‘what do you feel like for dinner?’ as well as opening up the idea of vegetables for other meal occasions.
Shopping:	Selecting vegetables for fitness for purpose, (e.g. the variety for a particular cooking style), eating quality and to avoid wastage. Price specials.
Storing:	How to get the best eating result and avoid wastage.
Preparing / cooking:	Time saving tips, pre-preparation, cooking styles, recipe variations on the same theme
Serving:	Garnishing and presentation, this goes with that, etc.
The eating experience:	Meal enjoyment
Left overs:	Ideas for lunches, breakfasts, re-purposing and reducing waste.
The place and time:	School, home, work, restaurant Breakfast, lunch, snack, dinner, snack

In addressing these trigger points, the campaign creative team need to answer these key questions:

1. What are the required interventions at each stage of the journey?
2. What is the required messaging at each touch point?
3. What is the best media or delivery vehicle?



4. How do we engage the supply chain as well?
5. What is already in place that we can leverage?

Trigger point 2: Life stage milestones

The market research tells us that household behaviors and motivations with respect to food choices and meal planning change dramatically at different lifecycle stages, for example.

- Toddler - developing a taste for real food
- Starting school - the school lunch box
- Puberty
- Partnering
- Leaving home - fending for yourself
- The first home
- Pregnancy
- Growing family
- Empty nest
- Single again or home alone.

Each of these points provide natural trigger points to change behaviors. Importantly, lifelong eating habits and attitudes to food are strongly formed in the childhood years and bad behaviors commonly continue through life.

As with many of the challenges there is much good information and activity targeting life stages, but again it is not integrated with other interventions.

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Section 7 | Behaviour change interventions

As has been noted earlier in the document, once the core campaign message and the advertising component has been established, there is need for a program of multiple interventions that are unified and coordinated within a central framework. The interventions should evolve over time through evaluation, partner requirements and to effect change in sub-segments or specified cohorts. The Intervention Tool Kit illustrated below is the framework used by The Shannon Company.



The following pages summarise activity under each intervention category that addresses the core motivators and barriers identified through the development of the vegetable consumer behavioural segments.





Intervention area 1: Regulation Legislation

Governments at all tiers play a fundamental role in successful sustained behaviour change outcomes through the introduction and enforcement of laws that define the desired behaviour or shape the context in which the behaviour is to be adopted. There are opportunities for governments to introduce a number of policies that are likely to increase vegetable consumption but, as many of these fall under the broader healthy eating agenda, the responsibility for the regulation/legislation intervention may be better placed within The Fruit & Vegetable Consortium rather than the Vegetable Collaboration Company, particularly because some issues may be controversial across the funding members. Consideration and agreement between the Vegetable Collaboration Company members on matters of policy will be critical to long term success on this intervention.

It is well understood that increasing vegetable consumption is a key part of improving Australia's health, economic, social and environmental well-being. These fundamentals provide a strong platform to advocate for policy change across the three tiers of government.

Federal Government

- Options for consideration:
- Taxation of other food types to improve the relative value and affordability of vegetables e.g. supporting a sugar tax /sweetened beverage tax or fast food /junk food tax.
- Vegetable supply chain subsidies on key components of farming or logistics to control cost or reduce waste, particularly in remote communities.
- Industry funding for R&D in projects to improve functionality of vegetables or processing of vegetables to reduce waste.
- Limits on retailer markups or GST on fresh vegetables.
- Advertising and promotion restrictions for fast food outlets.
- Legislating a compulsory offering of healthy, vegetable options on institutional foodservice menus at places like schools, universities and child care centres, or at least improving accessibility to vegetable options.



- Improving the monitoring of national vegetable consumption.
- Attempting to align different state government health agendas to a national strategy on the issue of under-consumption of vegetables in Australia.
- Supporting the seed funding and ongoing funding of this project and other national projects like VegKIT.

State Government

- Options for consideration:
- Education policy on curriculum to ensure all children leave school skilled in food preparation and dietary knowledge with programs across primary and secondary schools.
- Guidelines on provision of vegetable options in school canteens, child care centres, hospitals, residential care, prisons and other institutions.
- Supporting infant and children's education programs.
- Advertising and promotion restrictions on fast food.

Local Government

- Options for consideration:
- Local planning restrictions on the location and number of fast food outlets per capita.
- Ensuring vegetable options are mandatory in all catering contracts for local facilities such as pools, sporting facilities and other community centres.
- Encouraging the development of community gardens and local food systems that feature vegetables.
- Supporting local healthy eating initiatives.
- Leading by example within Council Chambers and at Council events.





Intervention area 2: Information Education

There is no shortage of information/education on vegetables and how to prepare them. Information is sourced from cooking TV shows, social media (Instagram/Facebook), traditional media, retailers, government resources and messaging, NGOs and proponents of various diets, many with their own websites.

Critical to improved consumption is building vegetable ‘literacy’ across the community and the know-how on cooking/preparing/repurposing, purchasing and storing. Again, there is no shortage of information available, but it is disconnected from other interventions, not readily accessible and it usually requires someone motivated to source it.

This project proposes integrating all this information under a branding framework in a format that is easy to access and use, as well as being ‘social’ and shareable. The integration will require the engagement of all supply chain actors including retailers to put forward consistent messaging tailored to specific cohorts. The planned website portal and app that would be central to this is discussed under the ‘products and services’ intervention. The website would be an aggregator and disseminator site to partner sites, based on specific needs.

It has been recognised for some time that fundamental to long term change is the use of the education system to improve vegetable literacy, cooking and preparation skills, and the emotional connection to vegetables. Indeed, there are a number of programs active in this space already among the collaborating partners that can be integrated into this program.

Messaging tonality

The education messaging and tonality needs to be positive and inspiring rather than negative and instructional. The focus of the messaging should be on ‘making it easy’, guiding, inspiring, up-skilling and empowering consumers to have a great experience with vegetables with a strong emphasis on appetite appeal and eating enjoyment i.e. ‘the deliciousness factor’. Other messaging around vitality, feeling great, nutrition, value for money, avoiding wastage, etc., need to be secondary reinforcement factors.



The research shows consistently that instructional or prescriptive messaging quickly loses its effectiveness because people turn off. Rather than telling consumers that they *should* eat 5 serves per day it must be aimed at motivating them to eat 5 serves or more because eating vegetables is a delicious experience. It will be the role of the public health agencies to communicate the secondary messages about diets for specific health issues through their various programs (e.g. Heart Foundation, Cancer Council, etc.) and these messages should be strongly linked to the campaign.

The school/home disconnect

Schools are a key touch point for nutrition education. Unfortunately, the impact is often not optimised or sustained as observed by BehaviourWorks research, which identified a disconnect between what goes on at school and at home.

A program such as VegKIT that integrates schools, retailers and other partners supported by the rest of the collective is ideal. Supporting and leveraging this and other existing school-based initiatives should be a focal point and priority of the Vegetable Collaboration Company. Programs such as VegKIT are founded on the understanding that knowledge gained at school can change household behaviours. This influence is evident in missions such as recycling and waste reduction. An enhanced schools program could also embrace ideas such as those profiled below.

In Victoria, the Department of Health and Human Services has instigated a mobile dentistry service to visit primary schools. There is an opportunity to borrow this idea with vans visiting schools in every state to inspire children and parents on strategies for maximising the enjoyment of vegetables.

Research and evaluation of Jamie Oliver's Ministry of Food showed that the use of mobile resources had a significant impact on specific geographic and socio-economic cohorts. Clearly, a mobile option could be built with the involvement of retailers and media partners. Such an intervention could be complimentary to current programs like Stephanie Alexander's and The Ministry of Food in Queensland or it could become an evolution of them.

Community and sporting groups: VegAwesome

There are many avenues through which to integrate information interventions including media, cooking classes, community/life skills groups, sporting groups, as well as the program's own brand website/platform outlined in the Products and Services intervention.

Community groups and sporting groups provide opportunities, through their associations and networks, to provide information and skills on making vegetables 'VegAwesome' by improving meal planning and preparation skills, serving them in all catering and strongly linking diet and nutrition to the sporting or social activity. Sporting clubs are particularly powerful at engaging young men at a pivotal time in their lives when they are one of the lowest consuming cohorts.



Environmental partner programs

Programs such as Sustainability Victoria's 'Love Food, Hate Waste' help households to avoid waste through either better and more considered meal planning, purchasing, appropriate storage or how best to make use of leftovers. A number of local councils have programs to foster the development of more local food systems including encouraging vegetable buying from local farmers markets, community vegetable gardens, shared allotment vegetable gardening and recycling of vegetable waste. Leveraging this activity with healthy eating messages and encouraging wider community participation would be an example of an environmental positive that the program could support.

Meal preparation and planning skills

Currently there are a number of live streaming services inspiring and educating Australians on meal planning and food preparation. Melbourne's top chefs are running one inspired by COVID 19 every Friday at 4pm where people log on to cook with a chef after picking up ingredients from a recipe emailed earlier in week. The supermarkets are also active in this space e.g. Coles series with Curtis Stone and Woolworths program with Jamie Oliver. Overlaying these skill building activities with a strong message about the inclusion of vegetables in the diet is where the Vegetable Collaboration Company could intervene in these existing activities.





Intervention area 3: Incentives

Incentives for eating more vegetables include a broad spectrum of factors including:

- Personal/family health and vitality
- Meal enjoyment and social engagement
- Positive impact on the environment.

On top of these inherent incentives, behavioural change can be driven by price promotions, giveaways, awards, free experiences, competitions and other coordinated incentives.

The type of incentive activity that The Vegetable Collaboration Company could facilitate or endorse would be promotions across a multiple funders of the program that bring together the causes of the NGOs with the commercial aims of the growers and retailers. These may include promotions for particular varieties for the peak week of each vegetable season to drive demand with a strong price promotion, emphasise seasonal affordability, and at the same time, educate consumers on a particular health issue e.g. linking high lycopene tomato varieties with prostate cancer prevention, leafy spinach with eye health, mushrooms with the importance of Vitamin B for vegetarians, etc. The NGOs could play a role in providing free health checks, recipes or information.

To ensure all retailers participate, different promotional incentives could be organised around different vegetables and different health messages. Analysis of the VegPower program in UK found that the timely integration of retail pricing specials with other interventions designed to increase demand had significant impact on increasing consumption.

The timely, coordinated integration of incentives with broader marketing and information activity through the trade can range from price specials to promotional give-a-ways such as seed packets and recipe booklets, according to the retail channel.

Incentives do not need to be restricted to retailers, for example, there is potential for select local councils to offer incentives for increased community vegetable composting, similar waste reduction has been done on energy and water initiatives in the past. By the same token, vegetable growers could be involved by



offering free or discounted product to the NGO members to support their promotional events and effectively cross-promote.

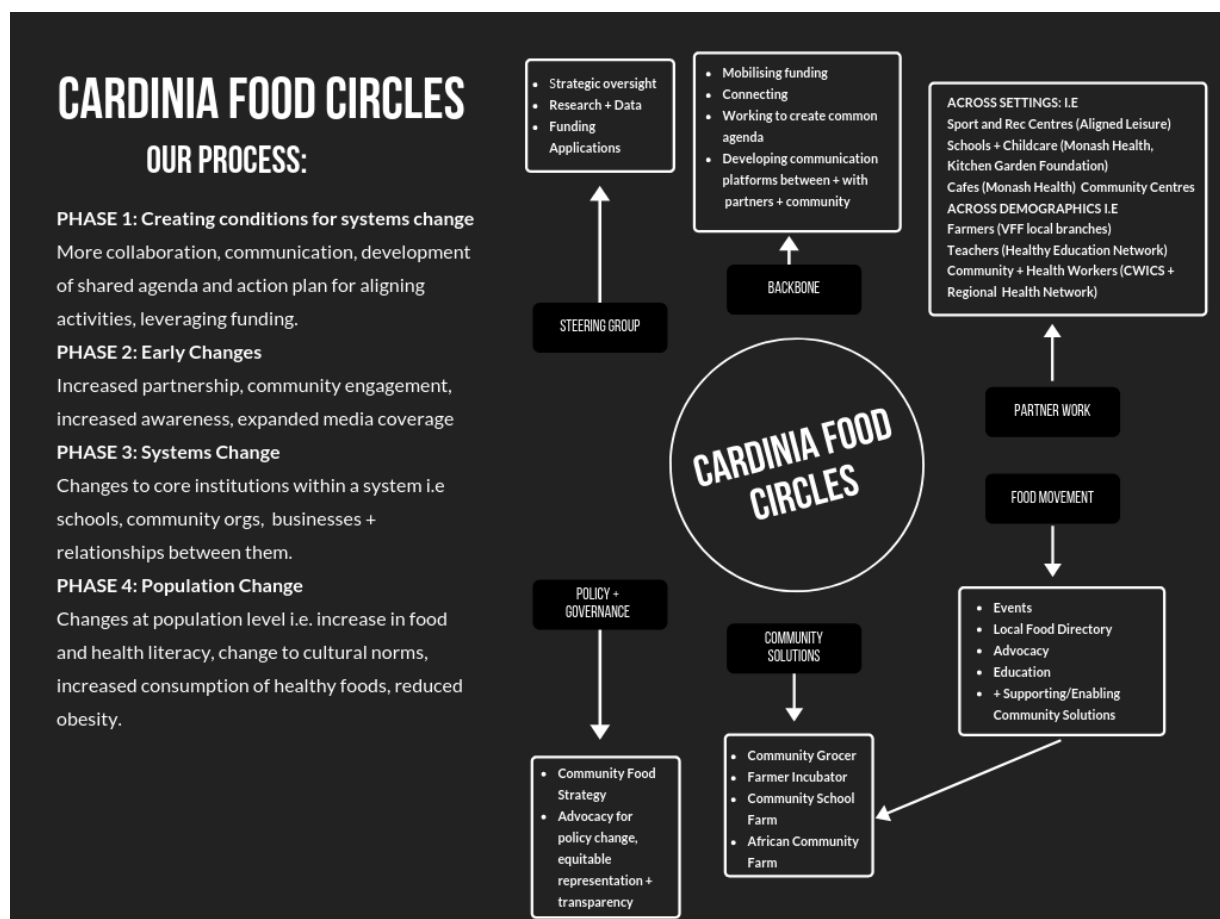


Intervention area 4: Community Engagement

Ensuring a strong presence of the program and its brand in multiple places and contexts will strengthen awareness, ultimately normalising a life with more vegetables in the same way that 'Slip, Slop, Slap' has become part of summer lexicon for Australians. The program should have a ubiquitous presence in our daily lives. Local sporting clubs, community groups, festivals and markets are all places where the program could build awareness. Retailers can also be involved in the community engagement at a national community level through promoting it in its own media advertising and at a local level through sponsorship and store level promotion.

The collective impact model used in Victoria by Cardina Shire Council for their Food Circles project, provides a common framework to work through local government to form localised programs around the country. Local governments are becoming increasingly active in activities for driving community health.





Local and regional community programs can also be developed in concert with State Government bodies such as VicHealth who have already established a network of community groups/sporting groups.





Intervention area 5: Marketing

The marketing strategy is integral to the behavior change program for three main reasons:

1. It unifies the program through a common brand and theme, based on a powerful emotional truth.
2. It enables targeting of specific cohorts and can address specific issues at a regional level.
3. It inspires people, normalising the new behaviour in different ways, at different times.

A key plank of the marketing strategy will be to link existing programs under a common umbrella brand and connect all the different activities of the collaborating partners, thereby strengthening the message. Central brand elements will be the program's website hub and inspirational recipe portal (covered later in this document).

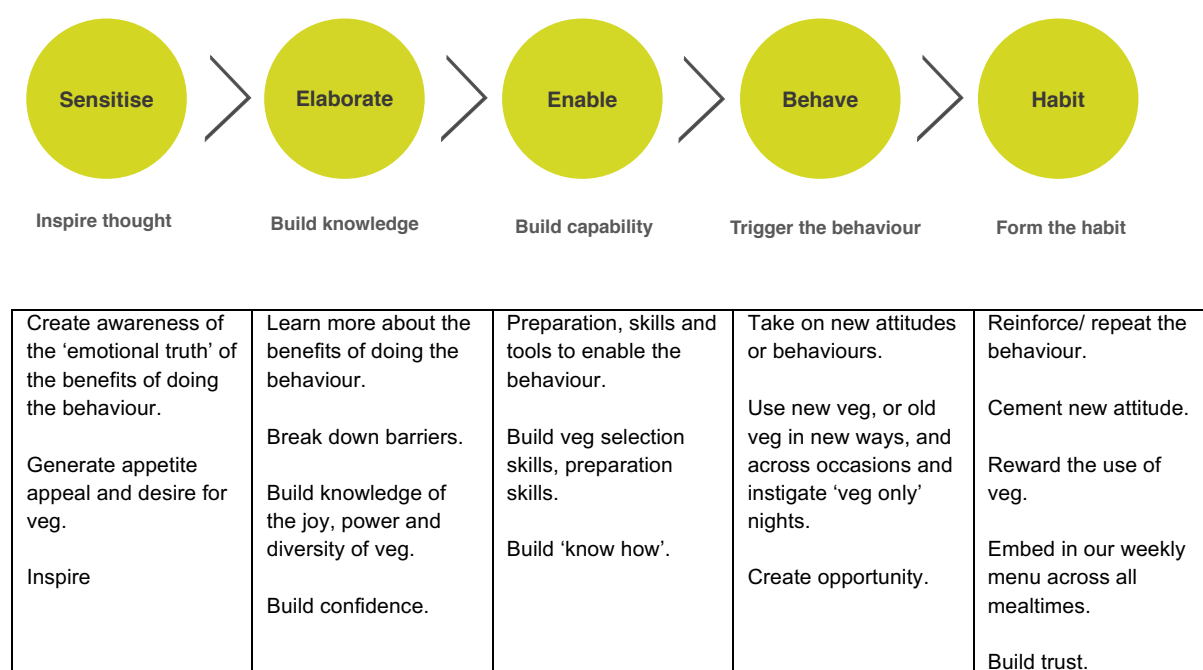
The advertising and communication aspects of the marketing program would be based around the following key planks:

1. Nominating a key media partner(s) to leverage content activity:
 - For TV and digital media, Channel 10 may be a potential partner across Living Room, Jamie Oliver and early news
 - For news (digital and papers), a partner with a mainstream audience would be selected.
2. Utilising multiple points of validation of key messages to include TV, catch up TV (e.g. on demand), outdoor, radio, digital media, social media and key ambassadors/influencers via their social media reach. Multiple touch points ensures the frequency of message and an 'always there' presence as people typically get reassurance when they see and hear from multiple sources including social influencers or ambassadors.
3. Planning media activity to coincide with peak meal planning and shopping hours, in particular scheduling digital and social media activity with timing of lunch breaks or driving home.
4. Leveraging and coordinating partner activity and programs.
5. Leveraging supply chain assets e.g. coordinating seasonal messages on trucks and delivery vehicles.
6. Establishing a unifying brand platform and communication assets that all partners can apply through their own channels and promotional activity



7. Designing activities that connect consumers with the message at multiple food service and retail eating experiences e.g.
 - *Fast veg offering with uber eats/fast food outlets*
 - *Restaurant menu endorsements*
 - *Food court messaging on trays*
 - *Paper cup/container messaging for take way vegetable soup winter promotions or summer salad promotions.*
8. Endorsements for companies providing pre-packed meals, ready to cook delivered meals (in response to changed shopping habits since COVID 19).

The marketing, advertising and media planning would all be designed through a behavioural change lens and seek to ensure a person sees multiple messages to 'validate' the information across the spectrum of daily activities. An example of how this works in practice is to design the program to influence an average customer journey as follows:



All messaging in the advertising and broader marketing activity should be focused on:

- **Appetite appeal:** Taking vegetables from 'yuk' to 'yum'.
- **Ease:** It must be as easy as it looks to inspire confidence in the average cook, but have enough interest to engage those with more gourmet aspirations.
- **Social engagement:** It should show enjoyment of vegetables by the whole family and the social enjoyment of sharing healthy food.



- **Normalising vegetables:** showing vegetables as the hero of the meal across all mealtimes and eating occasions, i.e. front of plate at a BBQ, in snacks, an important part of breakfast, quick lunch ideas as well as at in their full splendor at dinner.





Intervention area 6: Research

The research aspect of a behavioural change program usually includes:

1. Informing intervention design and messaging through evaluation of research.
2. Evaluation of previous literature and evaluations of other programs globally like Veg Power in the UK.
3. Establishing an aggregated evidence base on which to inform all intervention design, from policy to product development, marketing to environmental restructuring.
4. Evaluation of the main program and specific contributing programs and interventions by behavioural scientists, building an evidence base of what works and what to improve
5. Offering the findings as open source so that partners and other associated organisations with the same objectives can improve. Global networks could be formed to do this.
6. Acting as knowledge portal by being part of the wider behavioural change movement on vegetable consumption and healthy eating in Australia.





Intervention area 7: Products Services

A number of Hort Innovation studies for the vegetable industry indicate that there are still many opportunities in innovating around packaging and services to improve the accessibility and ease of purchase for vegetables. In recent years a new era of vegetable products has already emerged including cherry tomato or carrot stick snack packs, portioned fresh cuts, single serve microwave packs, ready meals, meal component kits, QR codes on packs or at point of sale to share recipes or tell provenance stories, seasonal dishes or meal suggestions for inspiration and better fit for purpose information (e.g. tomatoes for sauce versus those for salad). There are of course unlimited new products and services to come and this intervention will assist in the broader effort to identify opportunities and take these to market.

New products and services will give rise to addressing a key issue of convenience, access to vegetables and vegetable literacy, this program could be involved by engaging with industry to workshop the research on consumption blockers to identify opportunities and assist through facilitating connections to get them to market.

Information portal

A key service that the Vegetable Collaboration Group will manage will be the website platform. The website should become an aggregator of information and facilitator of the journey towards vegetable 'literacy' through linking partners and specialist sites with more detailed information (e.g. linking Heart Foundation approved recipes on the site to those living with the disease). It could also link to funding partners websites, other health sites and community projects.

The website/portal effectively becomes the facilitator in the online vegetable ecosystem. Unlike the Veggycation site, it would be totally consumer facing however, it could offer a closed section as a resource to partners to share learnings about what is working to enhance veg consumption.

There is an opportunity to bring the end consumer closer to our growers by building a connection to the vegetables through them and understanding seasonality and freshness. The website could include stories from growers on provenance, links to farms and the industry's efforts to continuously improve environmental sustainability, etc. The website could explain how vegetables are not only good for you, but also the planet.



And finally, the site should have an element of consumer engagement in its functionality to ask questions and share ideas. The aim is to normalise conversations about delicious, versatile vegetables.

The inspiration factor

Key to taking vegetables from 'Yuk' to 'Yum', will be using the website (with links to social media) to stimulate inspirational ideas, and provide storage and preparation tips. The Canadian Half Your Plate program does this to great effect linking the website to YouTube videos of their celebrity chef. The website for this program does not need to replicate the other numerous cooking sites. It can link them instead, highlighting those focused on healthy vegetable recipes.

Consumer research conducted by Coles Supermarkets indicates that recipe inspiration is a key influencer of grocery purchases (source: article in mediafederation.org.au), which stimulated its strategic relationship with Taste.com.au. Coles and Taste.com.au have developed a highly sophisticated linkage between their systems which includes the ability to monitor traffic from one site to the other, extract data on the types of recipes that consumers are searching for and engage their customers in the shopping process.

Recipe development and content is an expensive exercise, yet recipes are amongst the most searched subject matter on the internet on any given day, so they will be important to include in as part of the behavioural change program. It is therefore suggested that the website acts as a 'recipe portal' providing links to recipes on the websites of strategic partners (including health partners such as Heart Foundation, Diabetes sites, etc.).

Findings from a review into the CSIRO VegEze app (Hendrie *et al*, 2016) suggested that there is a need to target recipes at the appropriate skill levels in order to engage with a wider audience of Australians and because, if the recipes are too easy or too hard, users will tune out. It is therefore proposed to provide vegetable recipe links in two categories 'Quick & Easy' as well as 'Gourmet'.

It may be possible to come to a commercial arrangement with a strategic partner like Taste.com.au to provide the content via links. Taste.com.au is the largest Australian recipe website with an audience of over 2 million people and a data base of over 40,000 recipes. It is, however, aligned with Coles Supermarkets exclusively. The Woolworths on-line recipe offer is a lot smaller because its corporate strategy has a focus elsewhere. Sponsored links could also be worked into other areas of the knowledge portal to raise revenue e.g. Mr Fothergills Seeds or Decor.

Unlike the Veggycation website, which functions more as an education tool for older school children, the focus of the program's website would be primarily inspiration. Logically, there would be links through to the Veggycation site and others.



Website hierarchy of messaging

Primary message:	Vegetables are delicious!	<i>Here are some great recipe tips</i>
Secondary message:	Making vegetables taste great is easy.	<i>Here is some practical information about buying, storage, growing</i>
Endorsement message	Vegetables are also good for you	<i>Here's a few quick facts on health benefits</i>

The appendix includes more information about the inspirational content of the website.





Intervention area 8: Social Rules Norms

The behaviour change program seeks to establish norms and habitual behavior. It's all about normalising eating more vegetables by making them delicious and mouthwatering and inspiring confidence.

Leveraging social rules and norms can be done a number of ways in the campaign marketing materials:

1. Through language, e.g. “like most people”, “more and more people” are eating more vegetables than ever .e.g. “More and more people are using vegetable leftovers the next day at breakfast or lunch.” In this way, the social rules language can be linked to specific inspiration or ‘hacks’ to make consuming vegetables easier.
2. Visually showing lots of different people, from all walks of life, culturally, economically, gender all enjoying and giving vegetables equal billing at all meals and snacks.
 - *The builder having breakfast of left over veg from night before in an omelette*
 - *Vegetarian lasagne for lunch for the businesswoman*
 - *Vegetable salads and veg on the BBQs with the usual snags and steaks for big family gatherings.*
3. Using role models as ambassadors to influence behavior e.g. AFL’s elite footballers eat half a plate of vegetables at lunch and dinner.

We are all influenced by someone whom we either know and care what they think about us, or those whom we don’t know directly, but look to for ideas on how to live better/be better. This impulse goes beyond recipe ideas from a celebrity chef.

While the program should form connections with partners and their ambassadors such as Curtis Stone, or look to creating some, it should also seek to include those who influence us in other walks of life i.e. comedians, media personalities, sports stars, musicians, actors. The people with active social media profiles and followings are ideal. Many of the current program partners already have strong ambassador networks that could be leveraged at key times and around specific issues.

These intervention tactics will be worked into the communications and advertising elements of the program.





Intervention are 9: Environmental restructuring

Environmental restructuring can be used a number of ways to increase consumption of vegetables. Providing cues and prompts at the places where people make decisions about whether or not to eat vegetables is the aim e.g. on entering the supermarket or while viewing the restaurant menu. Some potential examples are outlined in the partnership discussion in Section 8 , but these all come with a cost, so priorities will need to be set. Ultimately, the skill of the program managers will be in harnessing activities that are already occurring and ensuring that vegetables have a high profile in all the environments where decisions about ‘what to eat’ are made. These include both discretionary and non-discretionary environments since it is often the provider of food that will need to be influenced and not the person consuming it. Examples of critical environments are:

- **The retail point of sale:** supermarkets, independent fruit & vegetable stores, farmers and metropolitan markets, organized community food systems, farm gate sales, the garden centre (for vegetable plants).
- **Commercial foodservice point of sale:** restaurants (from café’s to fine dining), sporting and entertainment venues
- **Institutional foodservice:** Prisons, hospitals, work canteens, school canteens
- **Community meeting and sporting facilities:** sporting and special interest clubs, swimming pools, local halls.
- **Events:** key food forums e.g. the major agricultural shows, food festivals, etc.

Note:

While nudging and other choice architecture techniques are known to be effective in swaying consumer choice at the point of sale, ultimately restaurants and retailers will sell more vegetables if there is a greater incentive for them to do. This is assessed in terms of margin or overall return on shelf space in store; or return per cover in a restaurant. Australian supermarkets are very sophisticated retailers so the program managers will need to work closely with them to understand their business model in fresh produce and then identify appropriate interventions that deliver commercial returns, within their operational terms.



Section 8 | Intervention partnerships

As noted already, the program does not intend to replace existing programs but rather to embrace them and integrate them into a holistic movement by linking through a common management platform and a compelling active brand. The new program will serve to amplify the best existing programs and work with partners to extend them onto a national arena. For example, existing programs that target specific cohorts like INFANT could be a collaborator, VegKIT is already an existing program that could be the key partner for influencing at primary school age; the Stephanie Alexander Kitchen Garden program could be the link to the nursery and garden industry; The Good Foundation's Jamie Oliver program may be the best model for teenager intervention; the culinary colleges may be the ideal touch point for influencing young chefs; the regional programs could be delivered in collaboration with the Country Women's Association; and programs for younger men through football and sporting associations like AFL, etc. What this program will do that is different to the existing ones, is that it will target the mass market at a national level with an overarching advertising campaign and umbrella brand.

Commercial partners will be needed for the interventions but it is not possible in this document to assume how each of them might wish to participate at this stage. Each of them will offer different opportunities to the program and there will need to be some spontaneity and creativity in the team to seize a new opportunity.

Health organisation partners will be encouraged to overlay their existing activities that are particular to the diet needs of their own constituents with this program. They will also play a key role as endorsing, authoritative voices.

The following table suggests the type of partners who could participate in each of the intervention areas proposed in the Shannon Company model.

INTERVENTION	SAMPLE PARTNERS
Regulation Legislation:	National Obesity Strategy Research partners NGOs
Information Education	Home Economics Association Retailers Good Foundation Jamie Oliver Stephanie Alexander Kitchen Foundation Appliance retailers TV Shows



Incentives	Retailers Restaurants Health insurance companies
Community Engagement	AFL Local health bodies Country Women's Association Sporting clubs Health NGOs
Marketing	Health insurance companies Retailers Sponsors Food processors Corporate vegetable growers Government health messaging Transport business's (truck advertising)
Research	Hort Innovation via vegetable levies Research partners
Products services	Packaging companies Retailers Restaurants Vegetable growers
Social Rules Norms	AFL Celebrities (pro-bono)
Environmental Restructuring	Food retailers Foodservice businesses Institutional foodservice Vegetable growers Nursery and garden industry

Potential interventions by partner

The following suggestions serve to illustrate the types of interventions that the program could partner on with key stakeholders. They are thought starters from a list that is potentially limited only by the imagination of the program managers. Ideas could be added to this list from effective programs elsewhere in the world such as Half Your Plate in Canada and Veg Power in the UK. The Food Foundation, UK shares details of its interventions on its website.



Growers

- **Packaging:** In an era where messaging is restricted in supermarkets, packaging is a key communication tool at the point of sale. The program could work with growers to improve packaging to maximise shelf appeal. Although there is an anti-packaging movement, packaging can be a critical tool to overcoming blockers to consumption such as portion size and they improve product quality in storage. The use of the program logo on packaging should be encouraged within the terms of the open licensing agreement.
- **Product development:** Encouraging growers and their value-adders to expand their product ranges and variety repertoire to respond to the blockers to consumption such as unit portion size, easy to prepare, pan-ready and ideas including processed vegetables
- **Innovation:** Provide input into industry R&D to overcome blockers to consumption such as shelf life or in-home storage
- **Supporting food charities:** Many growers are already highly active in supporting charities with excess produce. This is a great story to highlight in building awareness of eating more vegetables.

Supply chain partners

- **Endorsement branding:** Encourage endorsement branding of the program on cartons, truck bodies and in advertising campaigns.
- **Corporate contributions:** Multi-national suppliers have a lot to gain in growing the size of the Australian vegetable industry and should be encouraged to support their grower customers in this program.

Vegetable processors and value-adders

- **PR and messaging:** Work with processors to help drive health messaging and the convenience of processed, healthy vegetables
- **Endorsement branding:** Offer opportunities to buy licensed pack endorsements on approved processed vegetable products.
- **Corporate contributions:** Multinational processors have a need to build their credentials as good corporate citizens by contributing to projects such as this.

Retailers

- **Co-branding:** Major retailers would be encouraged to co-brand on elements of the program (each of the majors would need a different element). This could include negotiating co-branding on all retailer promotional activity related to vegetables e.g. Woolworths weekly market report.
- **Point of sale:** Where permissible, branded signage at the point of sale in independent retail outlets on shelf talkers or wobblers (supermarkets rarely permit the use of such tools, although have been changing their thinking on this in recent times).



- **Peak season promotional events:** one week of each of the four seasons could be nominated for vegetable promotions to enhance accessibility and affordability and emphasise the joy of vegetable seasonality and variety. The retail promotion would be integrated with activity across community engagement, social marketing, media partnerships and use of all ambassadors.
- **Consumer education and information:** retailers have their own magazines, websites and promotional activity. The program could provide information and resources that help educate consumers about vegetables particularly in areas such as seasonality, purchase and storage as well as meal planning.
- **Celebrating provenance:** Retailers have a vested interest in promoting the Australian provenance of our hero vegetables and sharing grower stories to build an emotional connection with consumers. The provenance story should have a focus on the health benefits of buying both Australian grown and Australian processed.

Commercial food service operators

- **Chef engagement:** to increase vegetable options on menus:
 - *Vegetable ideas for children's menu*
 - *Vegetable menu inspiration – side dishes and main dishes*
 - *Seasonal promotions – winter soups and summer salads*
 - *How to reduce plate cost with vegetables*
 - *How to increase average meal spend with vegetable side dishes*
 - *How to store vegetables in commercial kitchens*
 - *Adding vegetables to desserts*
 - *Goal setting to increase vegetable side dishes sold per cover.*
- **Menu branding:** Using the logo to identify menu items that are healthy vegetable options
- **Chef black box competitions:** culinary student programs and other promotional events that elevate chef skills with vegetables.
- **Commercial food service programs:** that are channel specific, to increase vegetable usage e.g. a café program highlighting variations on smashed avo toast, inspiration for caterers on vegetable ideas for canape menus.
- **Celebrity chef endorsement:** in the era of celebrity chefs, they can be highly influential in menu trends and provide a source of inspiration for home cooks. Chefs are large users of social media.

Nursery and garden industry

- **Point of sale:** Because nurseries and garden centres need a lot of information at the point of sale, they are more open to using signage.
- **Inspiration:** Home gardeners usually have a glut of vegetables at certain times and need inspiration about how to cook, preserve them.



- **Lifting vegetable gardening skills:** Teaching people how to grow their own vegetables is a common activity in independent garden centres. Overlaying this activity with information about the importance of eating more of them would be effective.

Meal Home delivery companies

- **Menu design:** Supporting home delivery companies to profile ‘vegetable hero’ options in their meals and meal kits.
- **Endorsement branding:** Licensing the use of the brand on particular menu items that offer a large vegetable component

Institutional food service:

- **Menu design and recipes:** programs for increasing vegetable availability in school/ work canteens, child care centres, prisons, hospitals, etc. *e.g. a program for institutional caterers on cost savings with vegetables or health benefits.*

Media:

- **Providing content** and stimulating story generation for general media as well as food, gardening and health media.

Insurance companies

- **Promotions and incentives:** Providing customer incentives and discounts with participation in healthy eating programs that profile more consumption of vegetables
- **Communication and messaging:** Most insurance companies have retail outlets at which material could be displayed and distributed and large customer data bases as well as a web presence.
- **Co-branding:** Using the brand to underpin all messaging about health eating and building a strong brand association would be powerful
- **Corporate sponsorships:** Health insurance companies have a lot to gain by improving the national diet which would justify corporate sponsorship investment

Public Health Agencies

- **Coordinating messaging:** Although the focus on the program is on emphasising the ‘deliciousness’ of vegetables, it is also important that the messaging about the consequence of low vegetables consumption and generally poor dietary habits are emphasised by health partners
- **Brand association and endorsement:** The association of public health agencies with the brand is important to give the brand a degree of authority and trust, so that the program does not look like an exclusively commercially motivated marketing campaign.



Section 9 | Branding strategy

A pivotal element of the program will be an active brand for the program that links the various activities to amplify the collective impact and which promotes and symbolises the desired behaviour.

Branding of the program will play a critical role in building a bridge between existing activities to promote vegetable consumption with new interventions. Because it will be used across multiple and diverse partner programs (including in-store and on products, and across multiple media channels) the design elements will need to be carefully considered.

Before any design work is commissioned, the brand architecture for the program needs to be carefully crafted to capture the essence of the vegetable consumption value proposition. It should be built around defining the differentiating features of vegetable consumption, how this translates into benefits for the recipient and the value that it brings.

The aim of a brand is for the audience to understand, relate to, believe in and evangelise what the brand stands for. Ultimately, it is the customer who defines the brand because a brand is a position held in the minds of the audience, therefore, an organisation is the curator of the brand but never owns it.

A brand needs to powerfully and succinctly project the following:

- How we are seen by the market?
- What we stand for
- What we believe in
- How we behave
- Our personality.

Examples of successful active brands

The most successful case studies in branding in behaviour change programs highlight the power of so-called 'active brands'. Active brands are simply brands that evoke the desired behaviour in their name alone. Sometimes it is the name of the organisation, sometimes the program theme.

The following are some examples of 'active brands' that have become or are becoming iconic in Australia:

- Life be in it
- Quit
- Worksafe



- Slip Slop Slap
- This Girl Can
- TAC's sub-branding to align with intervention activity including Drink Drive, Bloody Idiot, Wipe off 5.

Importantly, the quality of the branding and creative message in this program will play a large part in convincing partners to come on board. Most will not want to associate their brands with any logo or creative asset that is not well designed or does not have a compelling proposition.

Brand purpose architecture

There are many models for structuring brand architecture. The Simon Sinek branding model 'The. Golden Circle' has been used below to illustrate the type of thinking that will be required to build a brand for the program. The model is simple and powerful and has been embraced across many creative agencies globally. It challenges an organisation to answer 3 simple questions, Why? How? And What? The most pertinent of these questions to collective organisations, is the first:

1. Why do we exist?
 2. How we do it?
- *Our strengths, values and guiding principles.*
3. What do we do?
- *Our role in the community, the products and services we offer.*

The. Vegetable Collaboration Company brand summary

INTERVENTION	SAMPLE PARTNERS
Why do we exist?	To improve the wellbeing of all Australians by inspiring them to eat more vegetables because they are delicious
How do we do it?	<p>We do this by:</p> <p>Inspiring a group of organisations to form and commit to the principles of collective impact with a:</p> <ul style="list-style-type: none"> • A common agenda • Shared measurement • Mutually reinforcing activities • Continuous communication • Backbone support: Ongoing support by independent, funded staff dedicated to the initiative.



	<p>Collaboratively and consistently implementing a broad based behaviour change program over ten plus years.</p> <p>Being evidence based in evolving the behaviour change program.</p> <p>Integrating a range of existing programs with each other and introducing new programs that build on evidence.</p> <p>Openly sharing the results amongst the partners and with broader industry and globally.</p> <p>Inspiring people with deliciousness of vegetables.</p>
What do we do?	<ul style="list-style-type: none"> • We lobby Governments for better policy • We educate people of all ages, all walks of life about the awesomeness of vegetables (diversity, seasons, value, health and deliciousness) and we skill them in the preparation of delicious vegetables. • We inspire people to enjoy more vegetables with social marketing and community partnerships • We innovate based on evidence • We share our knowledge and know how through an open source portal

Traditional brand pyramid

The brand pyramid is a powerful framework that can be used to define the brand architecture – there are a number of iterations in use. It provides a clear road map for the creative brand development process.



The above brand pyramid has been built from the bottom up to define the structure of the brand for the Vegetable Collaboration Company.

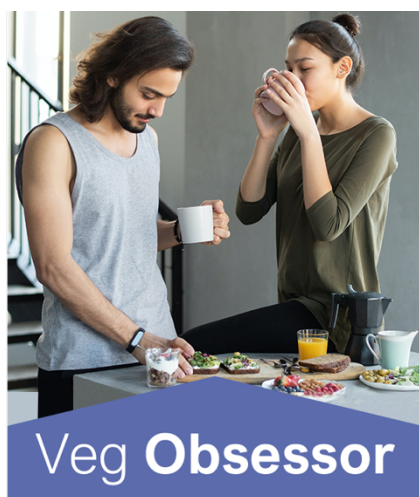
Features:	<p>Vegetables are:</p> <ul style="list-style-type: none"> • Nutritious • Fresh • Tasty • Versatile – a wide variety and many ways to cook them • Colourful • Affordable • Accessible
Benefits	<ul style="list-style-type: none"> • Eating enjoyment / appetite appeal • Nutrition, health, disease prevention, general well being • Weight management • Unlimited opportunities / styles / cuisines / formats • Complements any food style • Suitable for all eating occasions, = breakfast, lunch, dinner snacking • Inviting appearance • Convenient • Eat well cheaply • Good for the environment
Rewards	<ul style="list-style-type: none"> • Vegetables make a meal - it wouldn't be a meal without vegies • Makes my family happy - that make me feel good • There is always something I can whip up with some veggies in the fridge • I never get bored with vegetables, they change each season • I feel great, more energy and more alert when I eat more vegetables • My friends and family tell me how good I look when I eat well • Vegetables are quick and easy to prepare - leaves me time to do other things • I can afford to feed my family well with vegetables • I don't waste a thing with vegetables – there is always soups, stocks and leftovers for lunch
Values:	<ul style="list-style-type: none"> • Inspirational • Approachable and inclusive • Encouraging • Empowering • Knowledgeable • Helpful
Essence:	<p>Vegetables are delicious, satisfying and affordable. They are an integral part of a full, satisfying and vibrant life⁷.</p>



Appendix



Segmentation belief structures



“Eating more veg is better for us and the planet”

“Organic is a small price to pay to keep my children healthy”

“My training program means I follow a strict menu plan of mostly vegetables”

Core belief:	Vegetables are fundamental to the health of people and the planet
Drivers:	<ul style="list-style-type: none"> • Health & nutrition - for wellbeing or in response to a health crisis • Fitness & diet – recreational or high performance sports • Desire for natural and unadulterated food • Concern for environment • Seeking balance in quality of life • Love of vegetable gardening or desire to learn
Behaviours:	<ul style="list-style-type: none"> • Diet is centered around veg • Try to buy organic or pesticide free • Often vegan, vegetarian, flexitarian or pescatarian • Buy veg at farmers markets, organic or specialist stores • Favour restaurants/cafes that project their ethos • Would like to grow some of their own veg and herbs • Will compromise food choice and pay a premium for health or environmental benefit • Seek out bloggers and share recipe ideas with likeminded obsessors
Influencers:	<ol style="list-style-type: none"> 1. Health/wellbeing ‘gurus’ in the form of bloggers, authors, authoritative 2. Subscribe to websites on nature, health or fitness 3. Fellow ‘true believers’ in social set 4. Trainers and sports nutritionists 5. Natural and alternative health practitioners



Diversity of Veg Obsessor



The Veg Obsessor spans urban and regional dwellers of all ages. It includes fitness fanatics of many sports, elite athletes, lovers of vegetable gardening, organic consumers and those who aspire to a natural, chemical-free and more wholesome lifestyle. Some other segments may flip to become Veg Obsessors later in life after a serious health crisis such as a cancer scare, a new sporting obsession, pregnancy or other life event.

Veg Obsessor: Belief structure summary

Habits:

- Tend to shop at the same specialist stores or markets each week
- Like to try new nutritious recipe ideas from influencers or restaurant

Emotional truth:

"I want to know more: how to grow veggies, the heirloom varieties, the health benefits of phytonutrients, nutritious recipe ideas"

Normative behaviour:

- Weekly vegetable shopping is often part of weekend entertainment – e.g. market visit followed by coffee with friends
- Conscious of freezing or repurposing extra vegetables in soups or stocks to avoid waste
- Compost vegetable waste

Influencers:

- Health/wellbeing 'gurus' in the form of bloggers, authors, authoritative
- Websites on nature, health or fitness
- Fellow 'true believers' in social set
- Trainers and sports nutritionists
- Natural and alternative health practitioners
- Health/wellbeing 'gurus' in the form of bloggers, authors, authoritative



	<ul style="list-style-type: none"> • Websites on nature, health or fitness • Fellow 'true believers' in social set • Trainers and sports nutritionists • Natural and alternative health practitioners
Motivators: <ul style="list-style-type: none"> • Learning more about which vegetables are good for what and why • Learning more about growing vegetables • Learning more about preserving vegetables • Recipe inspiration – nutritious and healthy options especially 	Barriers: <ul style="list-style-type: none"> • Can be time poor like everyone else • Narrow diets with some having vegetable restrictions (e.g. FODMAP, potatoes) • Substitute share of stomach for other healthy foods (legumes, whole grains, bread, fruit, dairy foods)
Capability <ul style="list-style-type: none"> • Base level to advanced cooking skills • Keen to learn 'back to basic' skills like butchery, bread baking, preserving, composting, etc. 	Opportunity: <ul style="list-style-type: none"> • Information resources • Influencers • Workshops • Local retailer • Seasonal story





"All my kids can cook. It's a life skill I insisted that they have"

"I relish the seasonality of veg - soups in winter and salads in summer"

"I'm not familiar with a lot of Asian herbs – I'd love to learn more"

"I love cooking for the whole family and passing down my Nonna's tips"

Core belief:	Vegetables should be part of every main meal because they are versatile, delicious and good for you too.
Drivers:	<ul style="list-style-type: none"> • Passion for food, cooking • Eating enjoyment – presentation and flavour • Seasonality of vegetables • Social connections and rewards from pleasing family and friends • Family's lifestyle, health and wellbeing – a well-rounded life
Behaviours:	<ul style="list-style-type: none"> • Already skilled in the kitchen but always keen to learn more • Associate food with social connections • Inspired by new ideas and hungry for knowledge • Read recipe books and Google recipes to find inspiration • Wide repertoire of dishes but also some staple favourites • Enjoy food shopping and shop at specialists, on-line and supermarkets • Grow a few of their own herbs or summer vegetables • Some conspicuous consumption – like to impress and to feel like they know more • Cook from scratch – its seen to be more wholesome and authentic • Dine out regularly to try new food styles
Influencers:	<ol style="list-style-type: none"> 1. Google searches, Facebook and Instagram 2. Magazines 3. Friends and family (handing down recipes) 4. Educational TV cooking shows and celebrity chefs (not so much competitions) 5. Restaurants and travel





Diversity of Veg Passionate

Veg Passionates love cooking and indulging friends and family. The segment embraces Australians of all ages and ethnicities. Vegetables are core to that as they believe that they are truly delicious and it is simply not a meal without them. They cook around the vegetable seasons and it influences their menu planning. They associate food with social connections and so preparing vegetables is an important part of keeping their family healthy as is passing on cooking skills and family recipes.

Balancing health and deliciousness can sometimes be a challenge. For some over indulgent Veg Passionates, there may be a time in life when they verge towards becoming a Veg Obsessor due to high blood sugar or cholesterol becoming a problem.

Veg Passionate: Belief structure summary

Habits:

- New, including new vegetables
- Experiment often
- Look forward to the new season
- Well-used cook books
- Grow a few herbs and summer vegetables

Emotional truth:

"I'm hungry for more delicious, seasonal vegetable inspiration to delight my friends and family"

Normative behaviour:

Influencers:



<ul style="list-style-type: none"> • Strong base of good habits but also try new things regularly 	<ul style="list-style-type: none"> • Google searches, Facebook and Instagram • Magazines • Friends and family (handing down recipes) • Educative TV cooking shows and celebrity chefs (not so much competitions) • Restaurants and travel
<p>Capability:</p> <ul style="list-style-type: none"> • Good to very good at cooking and enjoy it • Well sorted equipment and pantry • Don't like to waste food when it can be transformed into another great dish 	<p>Barriers:</p> <ul style="list-style-type: none"> • Share of stomach competes with many foods • Potentially a limited awareness of nutrition • Hungry for knowledge about specific uses of vegetables e.g. variety choice, season, fitness for purpose (e.g. best potato for mashing)
<p>Motivators</p> <ul style="list-style-type: none"> • Self-improvement • Inspiration • Family/friends enjoyment • Well-being • Health issue such as high blood sugar or cholesterol 	<p>Opportunity:</p> <ul style="list-style-type: none"> • Meal planning • Shopping • Restaurants • Social media





"It's a nightmare trying to get kids to eat their veggies"

"With everyone's food issues, I have no idea what I am going to cook for dinner tonight"

"I tend to cook the same veg, the same way everyday – it's easy but does get boring"

"I don't buy too many vegetables because I'm sick of throwing them out and wasting food"

Core belief:	Vegetables just don't taste that good and I can't be bothered with them
Drivers:	<ul style="list-style-type: none"> • Lack of interest in vegetables until there is a trigger event impacting health or appearance e.g. relationship change, pregnancy, illness, sport interest, weight gain/loss • Can be responsive to interventions that drastically change skills and outlook • New experiences that prove vegetables can taste great (poor experiences in the past likely to have created avoiders)
Behaviours:	<ul style="list-style-type: none"> • Don't rate the taste of veg and don't see the need to eat them - takeaway is easier and more enjoyable • No interest in cooking beyond BBQ and microwave. Some do not cook at all. No interest in developing cooking skills. • Favour meat and carbs for eating enjoyment and satiety • Frequent consumers of takeaway or home delivery • Throw away packed lunches, scrape veg off their plate and resist family pressure to eat veg
Influencers:	<ol style="list-style-type: none"> 1. New relationship, friends and family (family often normalised a poor eating habits and skills in kitchen) 2. Mates and communities such as sporting clubs 3. Work colleagues 4. Instagram – self image 5. Sporting heroes and sport media 6. Health professionals – but only after problems occur <ul style="list-style-type: none"> • School programs



Diversity of Veg Zombie



Veg Zombies know that they should eat more vegetables but it is a constant challenge. Their vegetable dishes are usually boring and unappealing largely due to poor cooking skills, lack of time and inspiration. For many it is family pressures that make cooking a drag but there may also be Veg Zombie singles who simply cannot be motivated to make the effort to cook for one. Advertisers actively target this group with 'meal solutions' such as supermarket meal promotions, home delivered meal kits or meal components (e.g. taco kits).

Veg Zombie: Belief structure summary

Habits:

- Same shopping each week
- Takeaway 1 or 2 nights
- Staple meal repertoire
- Un-opened cookbooks
- High veg wastage

Emotional truth:

"I'd like to be able to switch veggies from 'yuk' to 'yum' for our family by making meals more colourful and delicious"

Normative behaviour:

- Peers and family all the same
- Same routine weekly, including same takeaway
- High wastage

Influencers:

- Family and friends
- Supermarket meal promotions
- Magazines and social media
- Mother's group (young families)



	<ul style="list-style-type: none"> • TV cooking competitions (MasterChef, My Kitchen Rules) • GP – when health issues emerge
Capability: <ul style="list-style-type: none"> • Ok at basics • Not confident in buying and preparing food generally beyond what they know. • No knowledge of best storing • Budget is tight for some 	Opportunity: <ul style="list-style-type: none"> • Shopping (supermarkets, on-line) • Schools • Mother's clubs • Kids engagement • 'Always on' social media
Motivators: <ul style="list-style-type: none"> • Family wellbeing and health • Social reward from kid's enjoyment • Budget • Boredom – need for some colour in life 	Barriers: <ul style="list-style-type: none"> • Skill • Lack of Inspiration • Perception of expensive • Time poor • Fear of family rejection • Fear of wastage • Knowledge gaps





*"I never learnt cooking at school
I'm OK on the BBQ"*

*"It's not as easy to get the
weight off as it once was"*

*"It's easier to make
toast than muck
around cooking
vegetables"*

*"We've got a nutrition program
at footy now, so I'm psyched to
get fit again"*

Core belief:	Vegetables just don't taste that good and I can't be bothered with them
Drivers:	<ul style="list-style-type: none"> • Lack of interest in vegetables until there is a trigger event impacting health or appearance e.g. relationship change, pregnancy, illness, sport interest, weight gain/loss • Can be responsive to interventions that drastically change skills and outlook • New experiences that prove vegetables can taste great (poor experiences in the past likely to have created avoiders)
Behaviours:	<ul style="list-style-type: none"> • Don't rate the taste of veg and don't see the need to eat them - takeaway is easier and more enjoyable • No interest in cooking beyond BBQ and microwave. Some do not cook at all. No interest in developing cooking skills. • Favour meat and carbs for eating enjoyment and satiety • Frequent consumers of takeaway or home delivery • Throw away packed lunches, scrape veg off their plate and resist family pressure to eat veg
Influencers:	<ol style="list-style-type: none"> 7. New relationship, friends and family (family often normalised a poor eating habits and skills in kitchen) 8. Mates and communities such as sporting clubs 9. Work colleagues 10. Instagram – self image 11. Sporting heroes and sport media 12. Health professionals – but only after problems occur <ul style="list-style-type: none"> • School programs



Diversity of Veg Avider



11

Veg avoiders are not just young single males with poor cooking skills. They may include the children who throw away their lunch everyday (probably because Mum is a Veg Zombie and it is unappealing) or the single household older person who has simply given up caring. The Veg Avider usually knows that they should be eating more vegetables, but why bother when Uber Eats is so convenient and delicious or sometimes a piece of toast is easier?

Veg Avider: Belief structure summary

Habits:

- Shop when need to
- Takeaway the majority of meals
- Do not shop for vegetables – buy ready meals which may have some vegetables in them

Emotional truth:

"Time to flip some bad habits - there's more to life"

"This tastes better than I thought"

Normative behaviour:

- Enjoy being a bit anti-social in eating habits, which perpetuates them
- Don't see the point in cooking when the other options are so good

Influencers:

- New relationship
- Mates and communities
- Sporting clubs
- Work colleagues
- Instagram – self image
- Sporting heroes and sport media



	<ul style="list-style-type: none"> • Health professionals – but only after problems occur • School programs
Capability: <ul style="list-style-type: none"> • If forced to cook, it is BBQ or microwave • No skills in shopping, preparation, storage or cooking 	Opportunity: <ul style="list-style-type: none"> • Relationship • GP • Self-image • Sporting or social club
Motivators <ul style="list-style-type: none"> • Partner • Health • Self-image and impact of poor eating on appearance • Life change (pregnancy, new relationship, new sporting interest, health scare) • Sport or sporting clubs 	Barriers: <ul style="list-style-type: none"> • Satiety • Lack of eating enjoyment • Absence of impetus to change • Belief that it vegetables cannot taste very good (likely to be based on family history)





*"I don't care!
I'm just not eating them, and
you can't make me."*

Core belief:	I will not eat vegetables and you can't make me.
Blockers:	<ul style="list-style-type: none"> • Eating disorders • Allergies • Taste hyper-sensitivity • Behavioural issues • Autism spectrum
Behaviours:	<ul style="list-style-type: none"> • Refuse point blank to eat vegetables • Families need to prepare separate meals for them • Some will eat only one or two foods • Minimal variety in diet • Create stress at family meal times • Some will eat if veg are hidden ingredient • Not concerned that behaviour will link to long term health impacts
Influencers:	<ol style="list-style-type: none"> 1. Psychologists 2. GP



Diversity of Veg Resistor



Veg resistors are the most difficult behavioural segment. They usually have psychological issues associated with their behaviours such as an eating disorder, depressive disorder or alcoholism. Their views are fixed.

Veg Resistor: Belief structure summary	
Habits: <ul style="list-style-type: none"> • Eat foods that are satisfying to them from a small repertoire 	Emotional truth: <p><i>"Really? That had carrot in it?"</i></p>
Normative behaviour: <ul style="list-style-type: none"> • Refusal to eat vegetables is ingrained from childhood • Family comes to accept the behaviours • Generational habit 	Influencers: <ul style="list-style-type: none"> • Dietitians • Psychologists • Health professionals • School programs
Capability: <ul style="list-style-type: none"> • Zero capability or interest in developing it unless it is preparation of the one or two food items that they will eat (e.g. toast) 	Opportunity: <ul style="list-style-type: none"> • GP • Counsellors • Mentors • School
Motivators:	Barriers: <ul style="list-style-type: none"> • Family to be accommodated



- | | |
|---|---|
| <ul style="list-style-type: none">• Extremely serious health issue such as blindness from lack of vitamins• Counsellors• School programs• event - health | <ul style="list-style-type: none">• Single so do what they want• Eating disorders• Allergies• Taste hyper-sensitivity• Behavioural issues• Autism spectrum |
|---|---|



Website hub and recipe portal

A critical aspect of the communication story that underpins the aim to take vegetables from 'Yuk' to 'Yum', will be stimulating inspiration to use more vegetables through tips, recipe ideas and skill building. Consumer research conducted by Coles Supermarkets indicates that recipe inspiration is a key influencer of grocery purchases (source: article in mediafederation.org.au), which stimulated its strategic relationship with Taste.com.au. Coles and Taste.com.au have developed a highly sophisticated linkage between their systems which includes the ability to monitor traffic from one site to the other, extract data on the types of recipes that consumers are searching and engage in the shopping process.

Recipe development and content is an expensive exercise, yet recipes are the most searched subject matter on the internet so they will be important to include in the behavioural change program. It is therefore suggested that the website acts as a 'recipe portal' providing links to recipes on the websites of strategic partners (including health partners such as Heart Foundation, etc.).

Findings from a review into the CSIRO VegEze app (Hendrie *et al*, 2016) suggested that there is a need to target recipes at the appropriate skill levels in order to engage with a wider audience of Australians and because, if the recipes are too easy or too hard, users will tune out. It is therefore proposed to provide vegetable recipe links in two categories 'Quick & Easy' as well as 'Gourmet'.

It may be possible to come to a commercial arrangement with a strategic partner like Taste.com.au to provide the content via links. Taste.com.au is the largest Australian recipe website with an audience of over 2 million people and a data base of over 40,000 recipes. It is however aligned with Coles Supermarkets exclusively. The Woolworths on-line recipe offer is a lot smaller because its corporate strategy has a focus elsewhere. Sponsored links could also be worked into other areas of the knowledge portal to raise revenue e.g. Yates Seeds or Tupperware.

Unlike the Veggycation website, which functions more as an education tool for older school children, the focus of this website would be primarily recipe inspiration. It is possible that some content from Veggycation could be adapted.



Sample of website content required: Carrot and Tomato pages only

Tabs	Carrots	Tomatoes
Try this	<ul style="list-style-type: none"> - Grate them into avocado salads - Toss steamed Dutch carrots in olive oil and sprinkle with Dukkah to serve 	<ul style="list-style-type: none"> - Experiment with different varieties: Roma in sauce, Tommy Toe in salads - Toss chopped tomatoes through cooked pasta with olives and a can of tuna
Put them in	Juices, cakes, coleslaws, salads, spring rolls, stir fries, meat sauces, hamburgers, soups	Pasta sauces, salads, casseroles, toasties, soups, tacos, hamburgers
Quick & easy recipes links	Spicy roast carrots Vietnamese chicken coleslaw	Tomato medley with fetta Fresh roma tomato pizza topping
Gourmet recipe links	Carrot and ginger veloute Lebanese carrot and black olive salad	Panzanella black tomato salad Gemista tomatoes Santorini style
For kids	Hide grated carrots in hamburgers, Bolognese, taco sauce or sausage rolls Carrot sticks with avocado dip	Pack a Tupperware container of washed cherry tomatoes in the car for road trips
For breakfast	Carrot and celery juice with a touch of fresh ginger	Slice on toast with a splash of olive oil or sardines Add diced fresh tomatoes and parsley to baked beans to give them a lift
For lunch	Mix grated carrot with light cream cheese as a sandwich filler or on crackers sprinkled with fresh dill	Tomato based leftovers reheat well in the microwave at work Slice very ripe tomatoes onto crusty baguette with spreadable cheese
In the kitchen	Wrap and store in crisper section of the fridge	Do not store in the fridge. Keep on an uncovered plate in the pantry. Buy tomatoes a few days before you need them, so they ripen up
In the garden	Carrots can be planted year round. Keep seeds very moist to germinate.	Sow seeds in July and plant seedlings on Melbourne Cup Day in southern States
Health benefits	Beta carotene is a powerful antioxidant which converts to Vitamin A for improved brain function and glowing skin	Tomatoes are high in antioxidant lycopene which is enhanced when they are cooked. Lycopene is linked to prostate cancer prevention.
Peak season	Great all year round	Best in summer and autumn



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