MT21011

Foodservice foundational market insights

Value Chain Mapping

July 2022

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MT21011 aims to uncover foundational market insights and opportunities in the Australian foodservice sector for the horticulture industry to pursue

Introduction

Hort Innovation aim to obtain market insights on the foodservice sector and identify targeted opportunities for growers to engage directly with foodservice channels in the following sectors:

- Commercial channels (restaurants, cafés, catering, airlines, tourism and meal kits); and
- Institutional channels (Defence, health, education and mining).

This project will prioritise the following 7 horticulture industries:


Avocados


Melon


Mushroom


Onion


Papaya


Sweet Potato


Vegetable industry

Objective

The objective of this project is to support Hort Innovation by providing foundational research into key commercial and institutional foodservice channels. The key objectives of this program are to:

- Produce timely and commercially relevant market intelligence reports;
- Understand the current foodservice macro landscape;
- Define who influences menu design and understand what criteria influences their decisions;
- Understand the role of provenance and supporting Australian produce;
- Identify what the foodservice sector like and dislike about specific Australian produce. Consider taste attributes, quality, price, supply, versatility etc.;
- Understand the nuances of each of the channels including requirements (currently met or not met), new or improved product formats, target foodservice 'consumer' segment/s and value ($) size of opportunity; and
- Identify targeted opportunities for growers to more effectively engage directly with foodservice providers.

Methodology

Two research methods were used to deliver the project objectives. Qualitative and quantitative data was analysed to offer a holistic perspective on the opportunities for the horticulture industry:

Quantitative analysis – desktop research:

- reviewed industry reporting;
- market sizing data;
- business directory scanning; and
- government directory scanning.

Qualitative analysis - up to 20 interviews were conducted with foodservices stakeholders spread across priority channels and SME's.


Market Profile and analysis

+


Stakeholder identification

+


Strategic market considerations and opportunities

MT21011's Phase Approach

Phase 1 Kick off and industry objectives

Phase 2 Macro insights analysis

Phase 3 Customer and channel preferences

Phase 4 Value chain map

Phase 5 Recommendations and reporting

MT21011 has a phased approach, with Hort Innovation leading the project with validation and guidance from the Project Reference Group (PRG).

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The Value Chain Map highlights practical considerations for each in-scope horticulture industry for their priority foodservice channels

MT21011's Phased Approach

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Kick off and industry objectives	Macro insights analysis	Customer and channel preferences	Value chain map	Recommendations and reporting

The Value Chain Map is a key output of project MT21011, and was delivered to Hort Innovation at the completion of Phase 4.

Value Chain Map

Through stakeholder engagement, workshops and supplemented desktop research, this report outlines the foodservice value chain at a high-level. This report further provides horticulture category specific value chains for two selected channels per horticulture category. As part of this, insights are provided on:

- Key touchpoints of the foodservice value chain and produce industry definitions, roles and responsibilities; and
- Opportunities and challenges for the horticulture industry across the foodservice value chain; and
- Value chain nuances between foodservice channels including key stages where commercial decision making occurs.

Approach

The below process was followed for the Value Chain Map development:

- Workshops with relevant supply chain stakeholders were conducted to gain a firsthand hand understanding of the end-to-end process of sourcing horticulture produce
- Desktop research was used to supplement, validate and allow for further understanding of process flows including opportunities and threats
- SME insights were sought to further develop understanding and embed richness

Purpose

The Value Chain Map will:

- support understanding of the value chain in which horticultural produce moves through; and
- outline key nuances between foodservice value chains to consider when targeting specific foodservice channels; and
- highlight value chain decision making points that need to be evaluated in order to better engage with the foodservice sector.

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There are various nuances between foodservice channels that horticultural categories must adapt to, however, at a high level all follow a relatively similar value chain process

Competitive pressure: Growers and manufacturers are facing competitive pressure against imported fresh and processed horticultural produce alternatives due to greater scale, cheaper labour cost and currency advantages. [1]

Fragmented supply chain understanding: Limited direct engagement between the horticulture industry and foodservice channels has constrained understanding of horticultural produce end-point use amongst growers.[2]

Potential for stronger intermediary positions: Certain horticultural category supply chains allow growers and wholesalers to make greater profit margins than value added produce. [1]

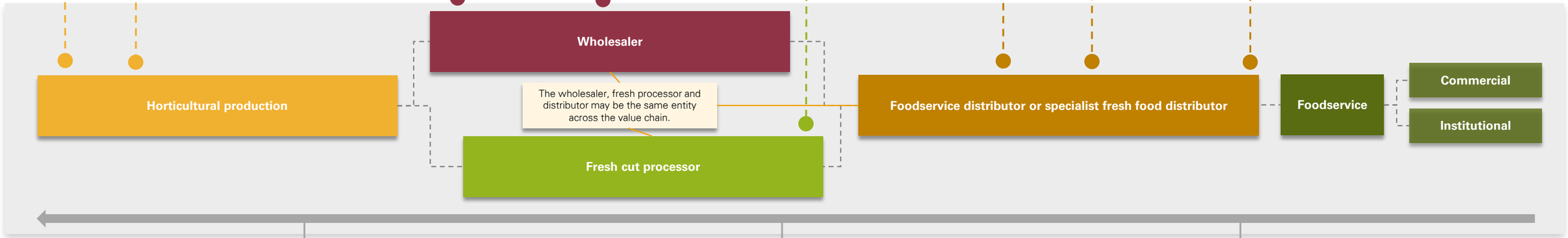
Access secure and committed supply: Unreliable local horticultural produce can lead wholesalers to increasingly procure from import sources.[3]

Innovation incentives: Strong demand from foodservice channels for processed and value added produce increases pressure to invest in market innovation.[4]

Fresh shelf-life: Growing demands and specific foodservice channel requirements on food safety and quality has increased the pressure on the shelf-life performance of fresh horticultural produce. [1]

Competition against retail: Foodservice channels need to compete against larger food retailer demand for produce from distributors.[5]

Value chain visibility: Distributors are challenged in gaining visibility of volume/value drivers in downstream market channels due to the nature of the supply chain having many touchpoints.[6]



Reduced demand signals: Horticultural categories and foodservice channels tend to have limited information flows and market visibility. This is heightened when fragmented suppliers and distributors operate in and through significant intermediaries. [1]

Value/margin capture pressures: With increasing competition and the desire to shorten supply chains and be closer to the consumer, the opportunity for value capture early in value chains is impacted by intermediary supply chain players. [4]

Supply chain costs: The pressures on performance of major foodservice channels has driven a strong focus on reduction of costs of supply, and greater onus on suppliers to balance supply and demand. [2]

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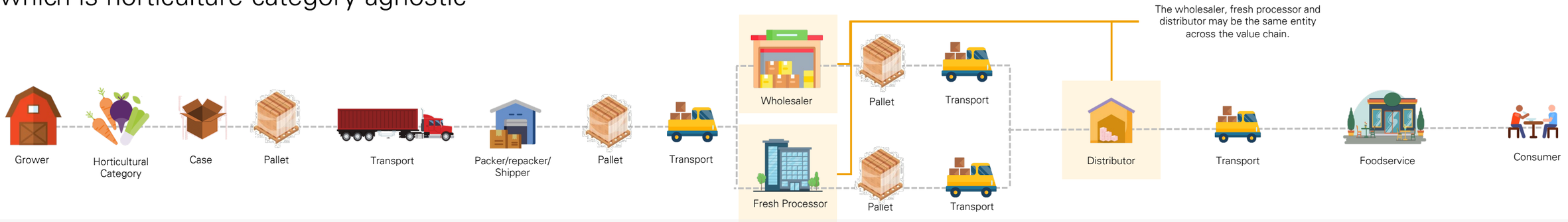
Source: (1) Rural Industries Research and Development Corporation, 2015. (2) CSIRO, 2021. (3) Department of Agriculture, Water and the Environment, 2020. (4) Innovation and Science Australia, 2017. (5) Sustainability Journal, 2022. (6) Austrade, 2020.

The value chain has core operations required for all of foodservice. The below value chain is a ‘whole of foodservice channel’ map which is horticulture category agnostic



Produce industry supply chain definitions, roles and responsibilities

Grower

The role and activities involved for a grower include growing, harvesting, storing and selling produce. Larger growers typically have their own packing sheds, whereas smaller growers may need to send produce to be graded and packed elsewhere in large bins.

Horticultural Category

A horticultural category will move throughout the supply chain in different packaging for transport purposes, and if required, in different value-added formats as it moves throughout the value chain.

Case

Case refers to any type of product at a packaging level. Cases are particularly important throughout horticultural value chains to ensure produce are protected and preserved.

Pallet

Pallets are also used as a logistical unit to move horticultural produce and also play a role in protecting horticultural produce.

Transport

Transport involves the logistical activities that move produce from one point to another. For horticultural produce, this is typically by truck or rail. Transport companies include Fruithaul, Lindsay Australia and Nolan’s Transport. Transporting can also be done by the distributor.

Packer/repacker/ Shipper

The activities conducted by a packer/repacker/shipper include aggregating, packing, selling and shipping horticultural produce. It can conducted by an agricultural cooperative or pack house.

Wholesaler

Wholesalers store, sell and ship produce. It is the point that determines lines of food distribution channels for horticultural produce once it has left the farm.

Distributor

Distributors are responsible for transporting from their horticultural produce to designated premises once sold.

Foodservice

Foodservices deals with the preparation and service of food outside the home.

Consumer

A consumer is an Australian who partakes or relies on specific foodservice channels as a source of food and nutrition.

Insights and value chain maps were informed by stakeholders in foodservice consultations.

The foodservice value chain holds various practical opportunities and challenges for the horticulture industry

Opportunities across the value chain	Specific categories of relevance	Challenges across the value chain	Specific categories of relevance
Horticultural categories which currently have limited familiarity, popularity and versatility in the foodservice sector have opportunity to showcase creative product formats through value adding processes (e.g. fresh processor).	Onion, Mushroom, Sweet Potato	The fresh produce supply chain has mature and established relationships. Consequently, there is a general resistance to supply chain operational change due to existing and established relationships across the value chain.	All
Foodservice channels with complex logistical challenges and that require large bulk volumes e.g. Defence and mining, provides opportunity to capitalise on value added (e.g. chopped, diced, frozen) lower grade produce.	Onion, Mushroom, Sweet Potato	Due to high perishability of certain horticulture categories, transport of produce along the value chain particularly for foodservice channels located in regional areas e.g. Defence and mining, requires cold storage, resulting in additional costs and logistical considerations. Certain horticulture categories also have greater fragility and are more susceptible to bruising through transport along the value chain, leading to higher food wastage.	Avocado, Papaya, Melon, Mushroom
With foodservice channels moving to more technologically savvy operations, growers can leverage similar networks to bridge the connection with foodservice channels. This will help better align supply to windows of peak demand through greater understanding and visibility of procurement patterns and the supply chain.	All		
Up to 65% of estimated waste across the food supply chain occurs at pre-harvest, post-harvest, processing and distribution. [1] Where high-quality is required for foodservice channels, improved cold chain management, storage and packaging facilities can be reviewed to ensure produce remain at the grade A standard and food wastage is minimised.	Papaya, Avocado, Melon	With Federal and State Governments and foodservice customers becoming more stringent in food safety regulation, it's become an even bigger challenge for growers, wholesalers and distributors to deliver safe, high quality produce to consumers. One of the most prevalent factors that impact the safety and quality of food produce include warehousing and storage practices and transportation delays along the value chain.[2] Foodservice channels are increasingly looking for food safety accreditation from a third party.	All
Consolidation of touchpoints along the value chain through vertically integrated processes will allow growers to more directly engage with foodservice channels through a shortened supply chain.	All	Factors along the value chain can be unpredictable and difficult to forecast. The horticulture industry currently has limited investment in data and analytics awareness and capability that informs seasonal demand fluctuations from foodservice channels which can improve response to demand signals. [3]	All

Category key

Avocado · Melon · Mushroom · Onion · Papaya · Sweet Potato · Vegetables

Source: (1) Food Engineering, 2018, (2) Department of Agriculture, Water and the Environment 2020, (3) VendorCentric, 2021.
Insights were informed by stakeholders in foodservice consultations.

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There are nuances between the various foodservice channel value chains. Two prioritised foodservice channel value chains per horticulture category have been highlighted in this report

Two foodservice channels have been selected by each in-scope horticulture industry to gain further insight into the specific opportunities, challenges and stakeholders of the value chain. These foodservice channels have been selected based on greatest practical use for each of the horticulture categories in the foodservice sector, leveraging insights from the Market Profile Report and Segmentation Report.

Avocado

1. **Restaurants**
   As a highly desired category in restaurants, understanding the dynamic of the current value chain can provide insight on how to further capitalise on this demand.
2. **Meal Kits**
   As avocados face challenges in the meal kit channel due to ripening timing, understanding logistics in the meal kit value chain can help position the avocado industry to better meet meal kit requirements.

Melons

1. **Mining**
   As a staple fruit provided in the mining foodservice channel, insights on how to better engage with the channel can benefit the melons industry.
2. **Health**
   Understanding food hygiene and safety challenges along the health foodservice value chain can help the melon industry better meet and overcome quality issues.

Mushroom

1. **Cafes**
   As a heavily incorporated ingredient in breakfast/lunch offerings, understanding the café value chain and its key touchpoints can provide insight on how to further capitalise on this demand.
2. **Health**
   Given forecasted growth in the health channel due to Australia's ageing population, building knowledge on the health foodservice value chain can help inform future strategies for the mushroom industry.

Onion

1. **Defence**
   Understanding the complex nature of the Defence foodservice value chain can help the onions industry best meet the logistical requirements of the Defence channel through transport, product format etc.
2. **Mining**
   As a frequently bulk ordered category in the mining channel, understanding how to better overcome logistical challenges in the mining value chain can benefit the onions industry.

Papaya

1. **Restaurants**
   Gaining robust market knowledge on the restaurants value chain can provide insight on key decisions and drivers that can help boost growth of papayas in restaurants.
2. **Cafes**
   With papaya familiarity gradually rising amongst Australian consumers, understanding the current state of the café value chain can help inform future strategies for papaya growers.

Sweet Potato

1. **Restaurants**
   With a surge in demand for sweet potatoes in the restaurant industry, insights on how to capitalise on this demand can be made through robust understanding of the current value chain.
2. **Cafes**
   Understanding the key touchpoints and decisions made along the café value chain can help sweet potatoes better meet café preferences e.g. product format, volume.

Vegetables

1. **Defence**
   Gaining insight into the Defence foodservice value chain given the increased focus on nutrition in the Defence channel can help inform market entry strategies.
2. **Mining**
   Understanding the nature of the extensive lead times in the mining foodservice value chain can help provide insight on how to improve freshness and quality of vegetables in the mining channel.

The selected Value Chain Maps for each horticulture category have been provided in the following section of the report.

Value Chain Maps

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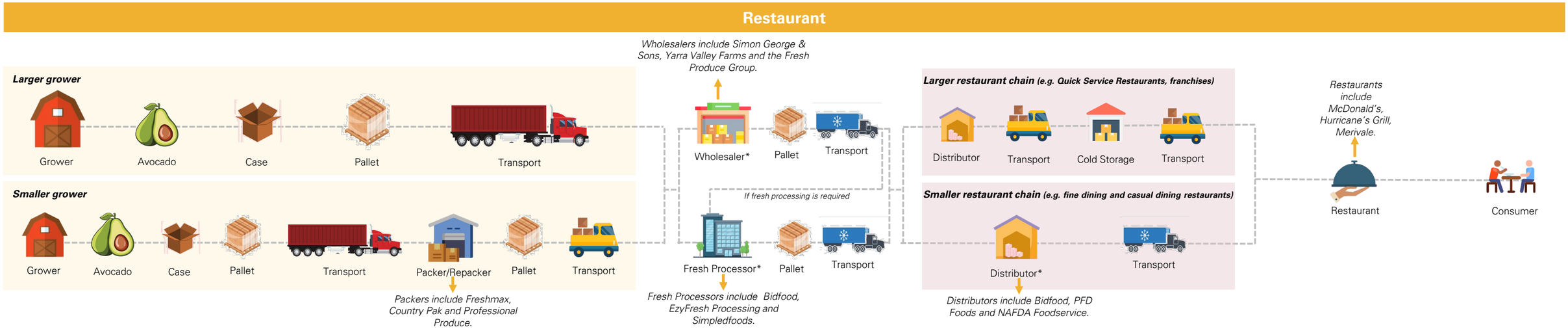
Avocados

Larger restaurant chains require a greater scale of logistics and more sophisticated cold chain management compared to smaller restaurant chains



Key insights for the restaurant value chain

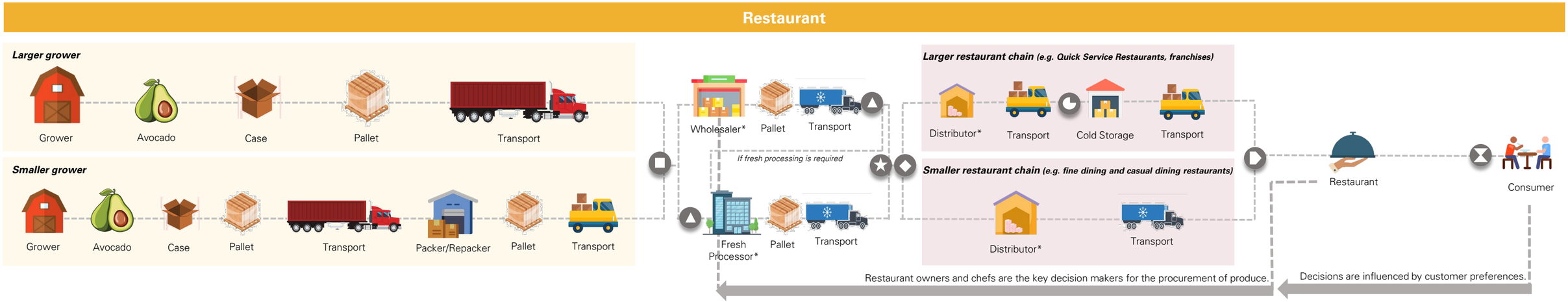
- Larger restaurant chains will typically require more sophisticated cold chain management compared to smaller restaurant chains. Cold storage spaces are used to store perishable produce like avocado at low temperatures, thus providing flexibility to larger restaurant chains to secure produce when price points and supply fluctuate. [1]
- Despite the various touchpoints in the restaurant value chain, restaurant operators are growing more conscious of where avocados are coming from. Restaurants are increasingly tracking produce to the original source to ensure food safety and anticipate disruptions in the supply chain in order to pivot accordingly. [2]
- Restaurant operators are shifting to technology for supply chain and inventory management to assist in replenishment orders, communicating with suppliers and tracking deliveries. For instance, restaurant POS systems with inventory management tools built in, or integrations with supply chain management solutions, will allow the automation of these steps. [2]
- Larger restaurant chains may have central kitchens which serves as one of the major centers for the storage and preparation of avocados (e.g. blend, salsa). Products will then be distributed to the various restaurant branches to ensure quality and consistency between outlets. This also helps eliminate the possibility of errors and discrepancies when the purchase orders are raised by different outlets. [3]
- More restaurant owners are looking at vertically integrating their supply chain by working with distributors and suppliers that are able to manage more than one step of the value chain. Operators also aim to procure various produce along with avocados from the same wholesaler to minimize transactions and negotiations for individual categories. [2]

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Source: (1) Restaurant owners, (2) Lightspeed, 2021, (3) Posist 2021

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Volume and frequency of avocado orders from restaurants are highly dependent on the size of establishment and product format requirements



Restaurant decision making across the value chain

- Key requirements that are sought after when procuring avocado which can be influenced by growers include sustainability, quality and ripeness.
- Processed avocados are yet to become a popular product format in Australia. Larger restaurants do tend to purchase processed avocados over whole fruits when it comes to avocado salsa, guacamole blend, avocado pulp, spicy guacamole, and avocado drinks.
- Larger restaurants typically order produce multiple times a week (2-4x), whereas smaller restaurants generally order produce on a weekly basis. Depending on the restaurant cuisine (e.g. Mexican restaurants incorporate more avocados in menu offerings), avocados may be included regularly in these orders. This would also vary depending on whether the restaurant is relying on processed avocado where procurement can be done in bulk and ordered less frequently.
- Quantity of avocado orders fluctuate based on in-house specials and menu changes. Consumer preferences towards avocados is steadily increasing in restaurants.
- Large restaurant chains rely on restaurant locations ordering from what is available in cold storage units directly for avocados. Inventory management systems indicate current volumes in real time.
- Menu changes at restaurants occur at least 1 to 2 times a year. Avocados are a more stable category in how much they remain on a restaurant menu.
- Avocados are increasing in popularity within restaurant customers, particularly as a add-on for burgers, salads etc.

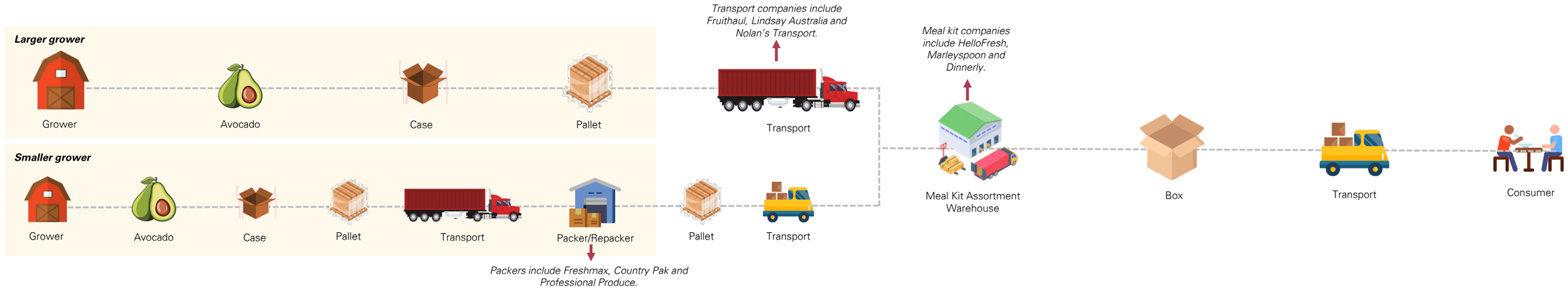
* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Source: (1) Restaurant owners, (2) Lightspeed, 2021, (3) Posist 2021

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Meal kit companies aim to maximise efficiency and margins along the value chain through predicting demand, calculating efficient delivery routes and reducing the use of third parties

Meal Kits



Key insights for the meal kit value chain

- Meal kits have relatively shorter supply chains, with avocado moving from growers → meal kit assortment warehouse → consumer households. Meal kit businesses typically aim to deliver food boxes to customers 3 days after produce leaves a farm. [1]
- Meal kit businesses are increasingly aiming to maximise efficiency and minimise food waste along the meal kit value chain. They employ a "weekly dynamic forecasting system" based on advanced algorithms to predict customer orders. Therefore, supply requirements of avocado from growers is known each week. In doing so, they prevent wasting unsold produce. [1]
- Meal kit businesses will aim to reduce food miles where possible. When delivering to customers, meal kits are shipped in batches on delivery routes calculated by a software to minimise fuel and transportation emissions. Decreased food miles also helps ensure fresh avocado is being delivered to subscribed households. [1]
- Meal kit companies aim to reduce the number of checkpoints along the value chain and minimise the use of third parties and additional processes (e.g. shipping from one warehouse to another, putting produce on display for customers). In doing so, meal kit companies have greater control over the channels, reduce transportation emissions and increase margins. [2]
- Meal kit companies will typically approach avocado producers between 2-6 months in advance of procurement. They then efficiently estimate the quantities and predict the costs of avocado and its availability through data systems. This enables businesses to have relatively high margins on produce (~60%). [2]

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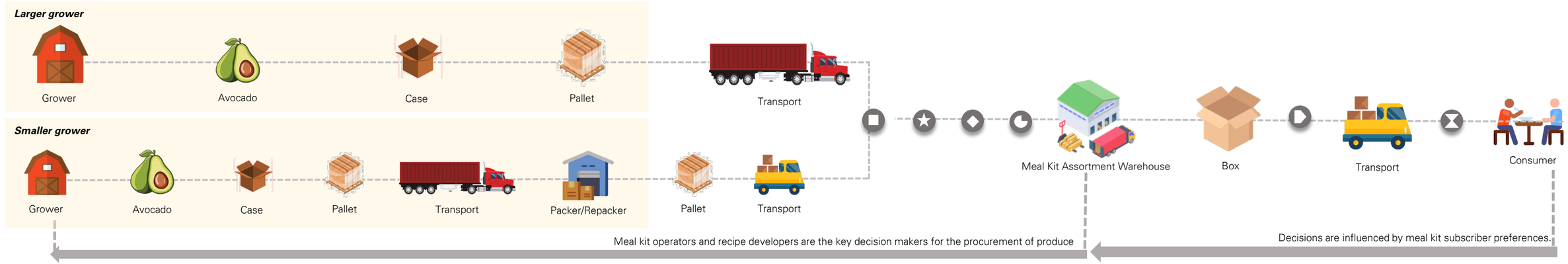
Source: (1) HelloFresh 2021, (2) Fabianpost 2021

Note: The Meal Kit foodservice channel was not validated by stakeholder insights and was mainly informed by desktop research.

Avocados face logistical challenges along the meal kit value chain due to its highly fragile and perishable nature, requiring extra consideration on ripeness when procuring produce from growers

Meal Kits



Meal kit decision making across the value chain

- The ripeness of avocados when procured is particularly important in the meal kit value chain as businesses aim to sufficiently time and deliver ready to use, ripe avocados to consumers.
- Meal kit businesses typically require weekly bulk orders of produce. However, frequency of avocados ordered is highly dependent on recipe offerings which change on a regular basis.
- Whilst avocado is incorporated in various meal kit recipes e.g. Mexican rice bowl with avocado, crumbed chicken tacos with avocado & parmesan, kits commonly only require a single avocado for 4 servings. Hence, avocados require relatively lower volumes of produce ordered.
- Meal kit businesses typically offer over 20 recipe options every week to subscribers and roll out new recipes every quarter. Whilst well-liked by consumers, avocado is not a staple ingredient incorporated in menus weekly due to the risk (e.g. bruised, browning, unripe).
- Decisions surrounding efficient transport routes in the value chain are particularly important for avocados to ensure fresh produce are provided to consumers on schedule.
- Avocados are popular and well liked amongst consumers due to rising trends in restaurants/cafes. However, due to logistical challenges, meal kit businesses find it difficult to meet this demand and have limited avocado menu offerings.

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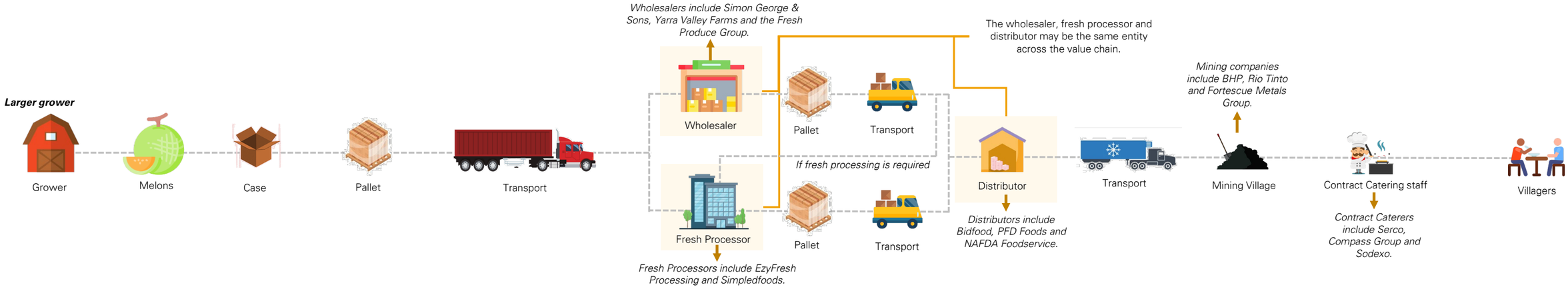
Note: The Meal Kit foodservice channel was not validated by stakeholder insights and was mainly informed by desktop research.


Melons

The mining foodservice channel faces challenges preserving the freshness of produce due to extensive food miles and significant lead times throughout the value chain

Mining



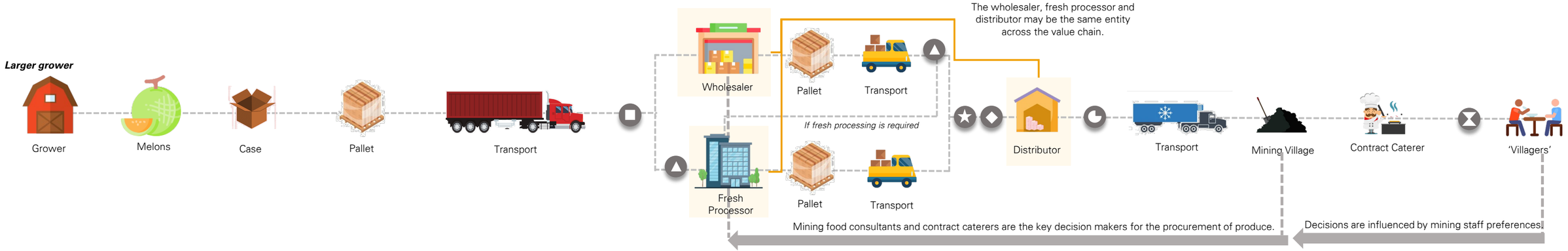
Key insights for the mining value chain

- Mining villages are typically in rural areas which means large scale transport and sophisticated cold chain management is critical to ensure freshness of melons which have a short shelf-life once cut open. Mining staff are typically eating 3-4 day old produce if transported from a distributor in a large city (e.g. Perth) to a mining site. [1]
- The mining foodservice value chain integrates the use of catering companies e.g. Compass Group. Contract caterers are third parties who are responsible for preparing and cooking meals at the specified location. Caterers also typically provide facilities management, including laundry and cleaning services. [1]
- Mining companies and consultants set produce procurement and quality standards which aim to improve the living standard of mining staff. Whilst catering companies make decisions guided by these food standards, caterers are predominantly focused on minimising costs along the value chain.[1]
- Contract caterers serve breakfast at mess halls. During this time, mining staff will pack their own lunch and heat it up at the mining site in the afternoon, further extending the time before melons are consumed and impacting freshness of produce. Dinner is served at the mess halls when mining staff return.[1]
- There is an increasing focus on preserving freshness and quality of produce along the value chain as improving the visual standard of food is becoming a priority in mining camps in order to enhance the living and eating experience of mining staff. This is particularly important as melon flesh will change colour and appear spoiled if not fresh.[1]

Source: (1) Mining foodservice consultants
Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.

Decisions made across the mining foodservice value chain are highly influenced by the need to procure and preserve produce with a long shelf-life

Mining



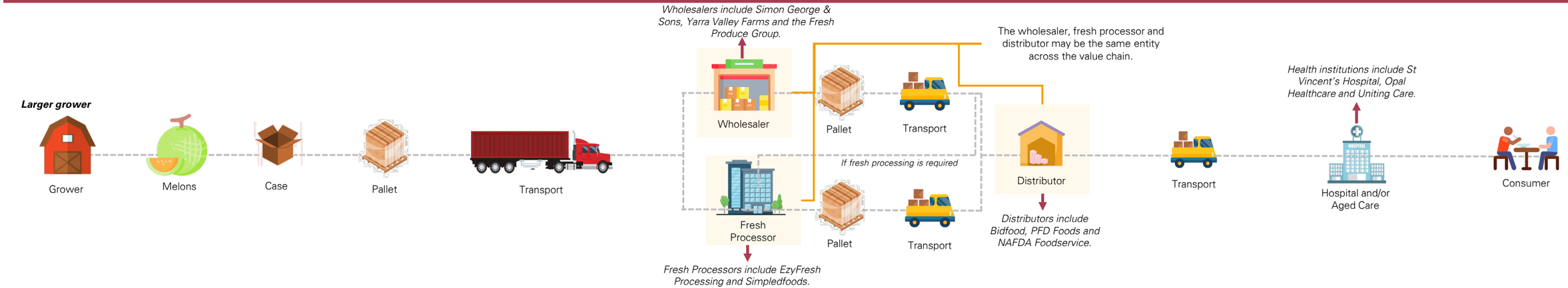
Mining decision making across the value chain

- Key requirements that are sought after when procuring melons that can be influenced by growers include sustainability, quality and freshness.
- Melons are typically preferred whole rather than processed due to its short shelf-life once it has been cut open and cubed. If pre-processing is required, mining caterers will aim to serve the melon as soon as possible.
- Mining camps are a large operation, requiring frequent bulk produce orders over the 14 day mining rotational period. As melons are large volume fruits, orders are typically made on a weekly basis.
- The quantity of melons ordered is relatively consistent throughout the year as it is a staple fruit offered for breakfast, lunch and dinner to mining staff. Melons are also regularly ordered by contractors due to cost-effectiveness and year round availability.
- Cold chain management and transport is particularly important for mining villages as they are located in rural areas. Consideration must be given to total transit times to ensure fresh melons.
- Melons are well liked by mining staff as a fruit served daily alongside meals. Melons are highly favoured for breakfast and dessert.

Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.

Consideration of strict food safety and quality requirements along the value chain is critical for market entry into the health foodservice channel

Health



Key insights for the health value chain

- Due to strict budgets, hospitals and aged care facilities will aim to minimise the cost of melons throughout the value chain as much as possible. This may involve consolidating steps or increasing efficiency in the value chain where plausible. [1]
- There are strict controls between the distributor and the hospital/aged care facility to ensure food hygiene, safety and quality assurance requirements are met. This is particularly important to consider as melons have had issues in recent years relating to food safety due to having traces with Salmonella and Listeria. [1]
- Hospitals and aged care facilities typically do not require the use of third party cold storage spaces to store melons before it enters the premises due to relatively close proximity to distributors as health institutions are predominantly located in metropolitan areas. [2]
- The produce procurement process, including determining the type, quality and quantity of melons ordered from wholesalers, is predominantly managed by health foodservice staff. These decisions are mainly guided by food requirements and standards set by in-house nutritionists.[2]
- There is increasing focus on environmental sustainability across the food supply chain in hospital foodservice. Health institutions generate more food waste than any other foodservice setting, with 322kg of food waste on average generated across three hospitals everyday. [3]

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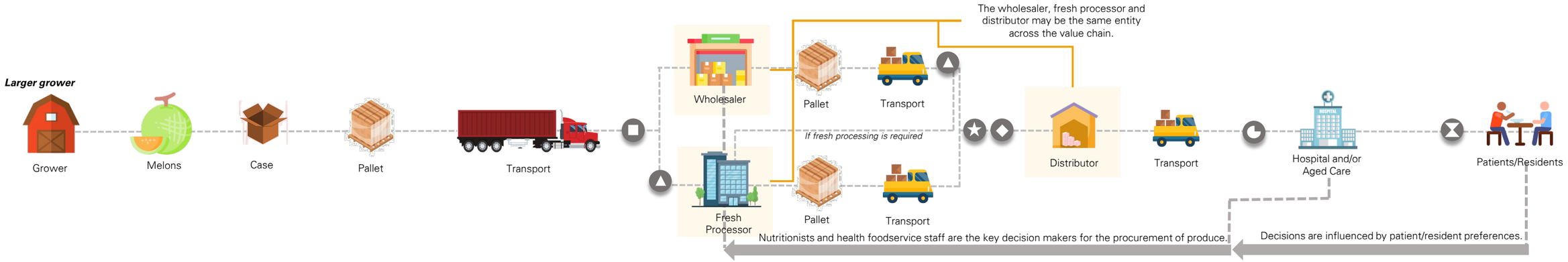
Source: (1) Management Data Science 2021. (2) Health foodservice staff, (3) Department of Health 2021

Insights were informed by stakeholders in consultations. Key stakeholders included a distributor for hospitals and aged cares, and health foodservice staff.

Volume and frequency of melon orders from health institutions depend upon cost effectiveness and availability of produce

Health



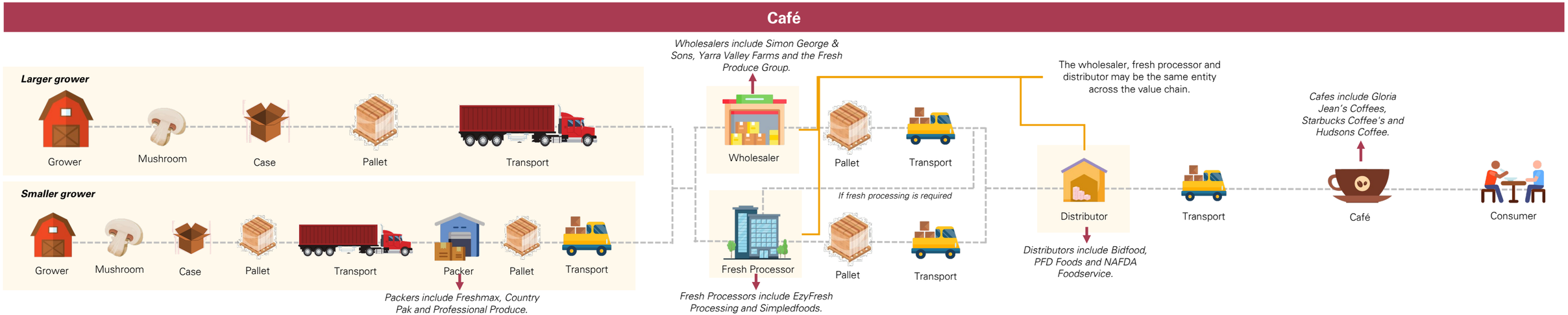
Health decision making across the value chain

- The health foodservice channel will typically aim to procure cost effective and consistently available melons, noting rock melon has been delisted as a fruit that is able to be served at health institutions due to food safety concerns.
- Melons are typically preferred whole rather than processed due to its short life once it has been sliced and cubed. If pre-processing is required, health facilities will aim to serve the melon as soon as possible.
- Hospitals and aged care facilities have relatively large operations and will typically order melons multiple times a week when incorporated in menu offerings.
- The quantity of produce ordered fluctuates based on menu items which rotate every 4-6 weeks. Melons are regularly incorporated in menu offerings due to cost effectiveness and consistent availability of produce.
- Though dependent on volume, the health foodservice channel will typically transport melons directly from the distributor to hospital and aged care facilities to store produce.
- Melons are well liked amongst patients/residents as a choice of fruit to accompany their breakfast, lunch and dinner meals.

Insights were informed by stakeholders in consultations. Key stakeholders included a distributor for hospitals and aged cares, and health foodservice staff.

Mushrooms

Cafés value good relationships with suppliers, distributors and vendors to ensure that the likelihood of receiving full and timely orders of quality produce is consistent



Key insights for the cafe value chain

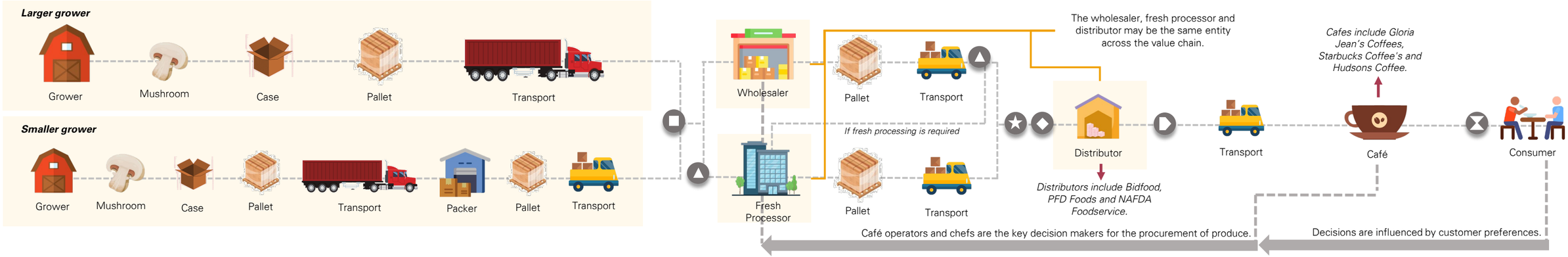
- Café operators tend to re-evaluate suppliers, distributors and vendors for mushrooms often. This is done at least once a year, if not more, and they look for new suppliers who provide more cost effective services whilst getting quality produce. [1]
- Café operators more generally value consistency and reliability for mushroom procurement above lower prices. This has increasingly become an issue due to availability and labour shortages along the supply chain due to COVID-19. [1]
- Similarly to restaurants, café operators are shifting to technology for centralised supply chain and inventory management systems to breakdown data silos, improving purchasing compliance and reducing mushroom costs through waste. [1]
- Café operators are growing increasingly conscious of the touchpoints in the supply chain and where their mushrooms are sourced from as café customers are interested in storytelling. Cafes that are able to tell a story about their mushroom origin and production have greater leverage to charge a premium. [2]
- Although most cafes are small, independent businesses, large café chains e.g. Starbucks Coffees or Gloria Jean's Coffees may require larger scale logistics and more sophisticated cold chain management for mushrooms.[2]

Source: (1) Lightspeed, 2021, (2) Café owner

Insights and value chain maps were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into cafes and café owners.

Mushrooms are typically demanded in whole form by cafes, often reducing the need for processing along the value chain

Café



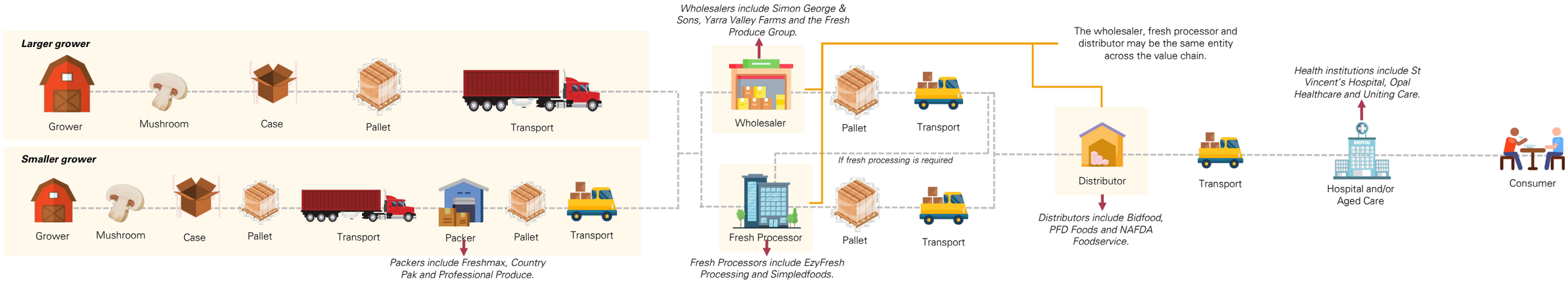
Café decision making across the value chain

- Key requirements that are sought after when procuring mushrooms that can be influenced by growers include sustainability, quality and freshness.
- Most mushrooms are typically desired in whole form by cafés, without additional processing (e.g. dicing). If pre-processing is required, it may be ordered as pre-washed and sliced.
- Cafés typically have smaller operations. They normally order smaller orders 1-2 times a week. Smaller cafés who rely more on selling beverages than food may order produce less frequently. Mushrooms are typically ordered once a week or once a fortnight due to their stable shelf-life when refrigerated.
- Due to the versatility and frequent use of mushrooms across café menu offerings, a high volume of mushrooms are typically required weekly.
- Menu changes at cafés occur at least once a year. Mushroom incorporation in dishes are relatively stable, however are higher in winter due to seasonal specials e.g. soups, stews.
- Mushrooms, particularly white button mushrooms, portobellos, shiitakes and porcini, are highly demanded by cafe customers. Simple pan-frying with fats, herbs and seasonings are preferred by consumers for best mushroom flavour and texture.

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into cafes and café owners.

The health foodservice value chain is relatively direct, omitting the need for third party transport and cold storage spaces due to sufficient capacity on-site

Health



Key insights for the health value chain

- Due to strict budgets, hospitals and aged care facilities will aim to minimise the cost of mushrooms throughout the value chain as much as possible. This may involve consolidating or increasing efficiency in the value chain where plausible. [1]
- There are strict controls between the distributor and the hospital/aged care facility to ensure food hygiene, safety and quality assurance requirements are met. Extra regulation and care should be taken to avoid bacterial pathogens during production and processing of mushrooms. [1]
- Hospitals and aged care facilities typically do not require the use of third party cold storage spaces to store mushrooms before it enters the premises due to relatively close proximity to distributors as health institutions are predominantly located in metropolitan areas. [2]
- The produce procurement process, including determining the type, quality and quantity of mushrooms ordered from wholesalers, is predominantly managed by health foodservice staff. These decisions are mainly guided by food requirements and standards set by in-house nutritionists.[2]
- There is increasing focus on environmental sustainability across the food supply chain in hospital foodservice. Health institutions generate more food waste than any other foodservice setting, with 322kg of food waste on average generated across three hospitals everyday. [3]

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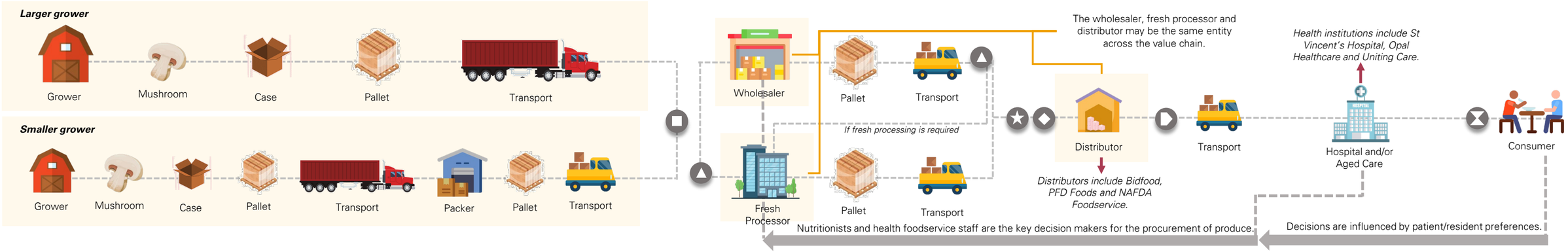
Source: (1) Management Data Science 2021. (2) Health foodservice staff
Insights were informed by stakeholders in consultations. Key stakeholders included a distributor for hospitals and aged cares, and health foodservice staff.

Mushroom procurement decisions across the health foodservice value chain primarily revolve around minimising cost due to strict food budget constraints

Health



Health decision making across the value chain

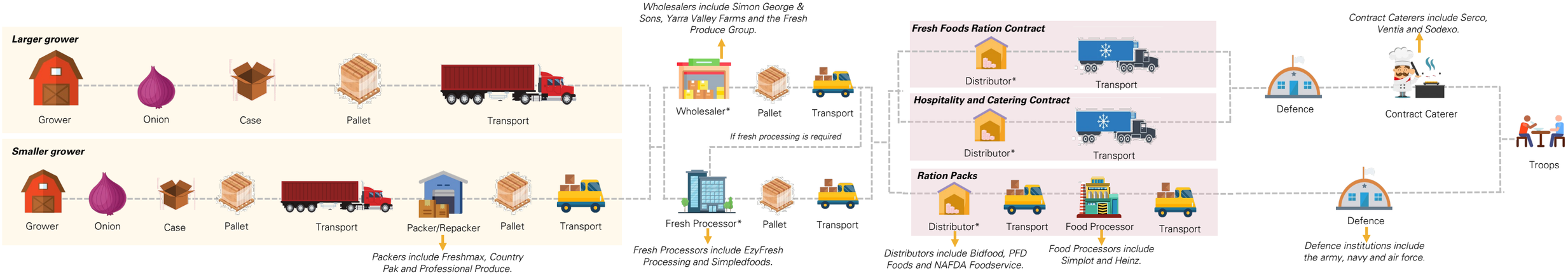
- The health foodservice channel will typically procure mid-range to lower grade mushrooms as it is commonly processed into sauces, stews and soups when served.
- Mushrooms are typically desired value-added in the health foodservice channel due to increasing labour shortages and labour costs. The procurement of pre-sliced mushrooms helps to reduce time, effort and costs.
- Hospitals and aged care facilities have relatively large operations and typically order large orders of produce on a regular basis. Mushrooms may be ordered once a week or once a fortnight due to their stable shelf-life when refrigerated.
- The quantity of produce ordered fluctuates based on menu items which rotate every 4-6 weeks. However, mushrooms are regularly incorporated due to cost effectiveness and consistent availability of produce.
- Though dependent on volume, the health foodservice channel will typically transport mushrooms directly from the distributor to hospital and aged care facilities to store produce.
- Mushrooms are well-liked amongst patients in hospitals, however can be more difficult to chew for residents in aged care facilities who have difficulty chewing.

Insights were informed by stakeholders in consultations. Key stakeholders included a distributor for hospitals and aged cares, and health foodservice staff.

Onions

The Defence foodservice channel has a relatively inflexible and complex value chain with limited points of entry due to set contracts

Defence



Key insights for the health value chain

- The two main points of entry for the Defence foodservice channel lies in the Fresh Foods Ration Contract and Hospitality and Catering Contract. Due to the mature and established relationships currently in place with these contracts, market entry is relatively more difficult for the onions industry and greater efforts must be exerted to build relationships with the involved parties. [1]
- Due to the nature of the Defence channel and its troop missions, food is often consumed at remote field locations. As such, bulk transport and cold chain management of onions is integral to the value chain. The complex and inflexible nature of the Defence value chain poses as a challenge for closer engagement between growers and the Defence channel. [1]
- Ration packs differ significantly from on-site cooked dishes. These packs are heavily processed and are designed to be consumed without cooking or heating. These meals are made ready to eat before arriving at Defence institutions. Ration packs have a shelf-life of up to five years. [2]
- Contract caterers are heavily involved in the Defence foodservice value chain. Contract caterers are third parties who are responsible for preparing and cooking meals at the specified location. Caterers also typically provide facilities management, including laundry and cleaning services. [1]
- The Defence Science and Technology Group (DSTG) are responsible for setting procurement and catering standards. These help guide decisions made by contract caterers who are heavily involved in the procurement and transport of produce in the value chain. [1]

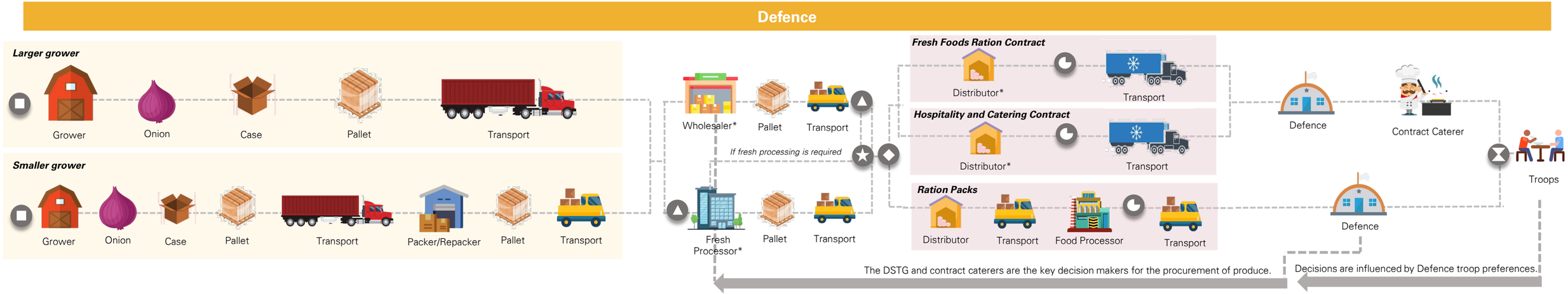
Hort Innovation
Strategic levy investment

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Source: (1) Defence Partner. (2) Australian Government Department of Defence 2015

Insights were informed by stakeholders in consultations. Key stakeholders included Defence Partners and Defence Subject Matter Experts.

Procurement of produce for the Defence foodservice channel is highly influenced by versatility and long shelf-life



Defence decision making across the value chain

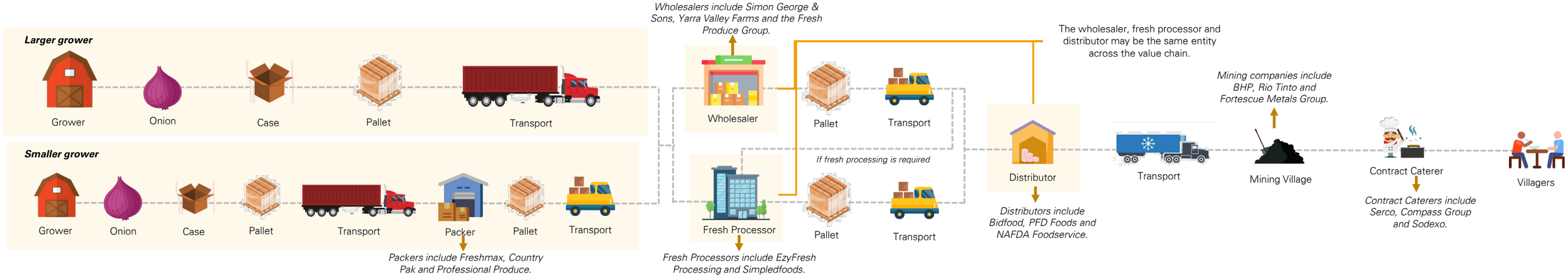
- The Defence channel has a strong preference for locally grown and supplied onions, procuring from Australian growers over imports where possible.
- Onions are typically desired pre-prepared in bags (peeled whole or sliced) as the Defence channel requires large volumes of onions. Value added onions helps reduce preparation time, effort and lacerations.
- Defence foodservice is a large operation requiring bulk orders of produce on a regular basis. However, as onions have a relatively long shelf-life, onion orders are typically ordered in bulk less frequently.
- The quantity of onions ordered is significant and consistent throughout the year as onions are a base ingredient used in various staple dishes served in the Defence foodservice channel.
- Meals in the Defence channel may be consumed off-site, requiring various forms of transport and cold chain management depending on product format.
- Onions are well-liked by troops as they are a flavoursome ingredient incorporated in various popular savoury dishes. Troop satisfaction is a factor considered when creating menu items.

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Insights were informed by stakeholders in consultations. Key stakeholders included Defence Partners and Defence Subject Matter Experts.

Large scale logistics and cold chain management is critical to ensure fresh produce are delivered to mining villages which are typically located in rural or regional areas

Mining



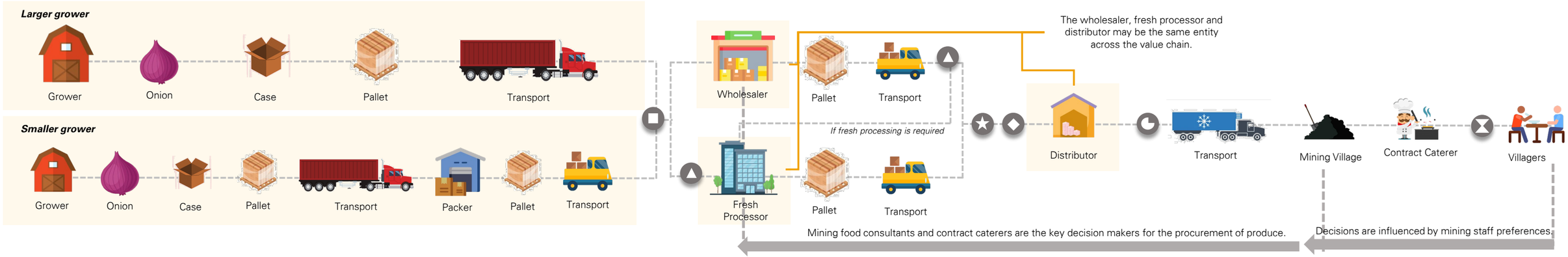
Key insights for the mining value chain

- Mining villages are typically in rural areas which means large scale transport and sophisticated cold chain management is essential to ensure freshness of produce. This is particularly important for onions as they are typically bulk ordered and not served immediately. [1]
- The mining foodservice value chain integrates the use of catering companies e.g. Compass Group. Contract caterers are third parties who are responsible for preparing and cooking meals at the specified location. Caterers also typically provide facilities management, including laundry and cleaning services. [1]
- Mining companies and consultants set onion procurement and quality standards which aim to improve the living standard of mining staff. Whilst catering companies make decisions guided by these food standards, caterers are predominantly focused on minimising costs of onions along the value chain.[1]
- Contract caterers serve breakfast at mess halls. During this time, mining staff will pack their own lunch and heat it up at the mining site in the afternoon, further extending the time before onions are consumed. Dinner is served at the mess halls when mining staff return.[1]
- There is an increasing focus on preserving freshness and quality of produce along the value chain as mining companies aim to enhance the sensory eating experience to improve the living standards of mining staff. Although onions that are not fresh are not visibly noticeable, signs of a bad onion through taste and smell are apparent. [1]

Source: (1) Mining foodservice consultants
Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.

Onions are highly valued in the mining foodservice channel due to long shelf-life and ability to withstand long transit times

Mining



Mining decision making across the value chain

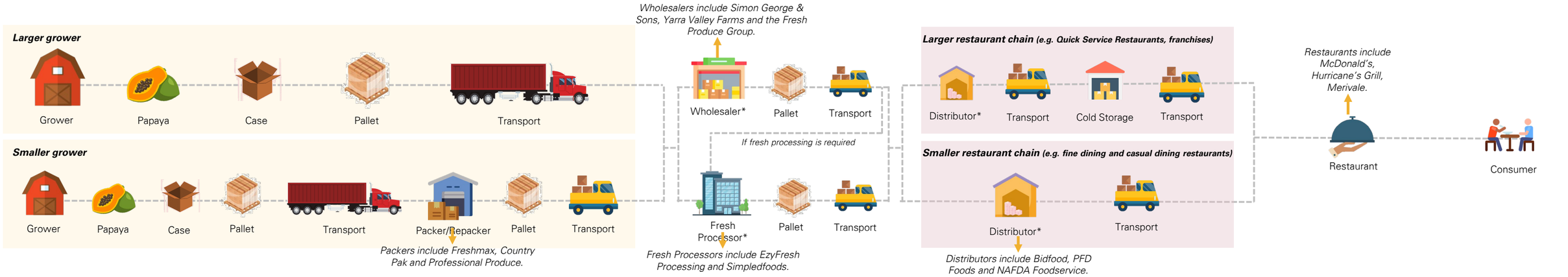
- Key requirements that are sought after when procuring onions are cost effectiveness and consistent supply.
- The mining channel typically demands value added onions (peeled whole/sliced and packaged) as it is commonly utility staff (not chefs) who handle the preparation of onions. Pre-prepared onions help save time, costs and avoids lacerations.
- Mining camps are large operations, requiring frequent bulk produce orders over the 14 day mining rotational period. However, as onions have a relatively long shelf-life, onion orders are typically ordered in bulk less frequently.
- The quantity of onions ordered is significant and relatively consistent throughout the year due to the use of onions as a base ingredient in staple dishes. Onions are a well demanded ingredient that is on the menu every week.
- Cold chain management and transport is particularly important for mining villages as they are located in rural areas. Consideration must be given to total transit times to ensure fresh onions.
- Onions are an essential ingredient in many savoury dishes and is highly demanded by mining staff. Mining staff feedback is being increasingly regarded in menu decisions.

Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.

Papayas

Restaurant operators are becoming more technologically advanced and are pivoting to tech-savvy methods in managing supply chain, orders and inventory

Restaurant

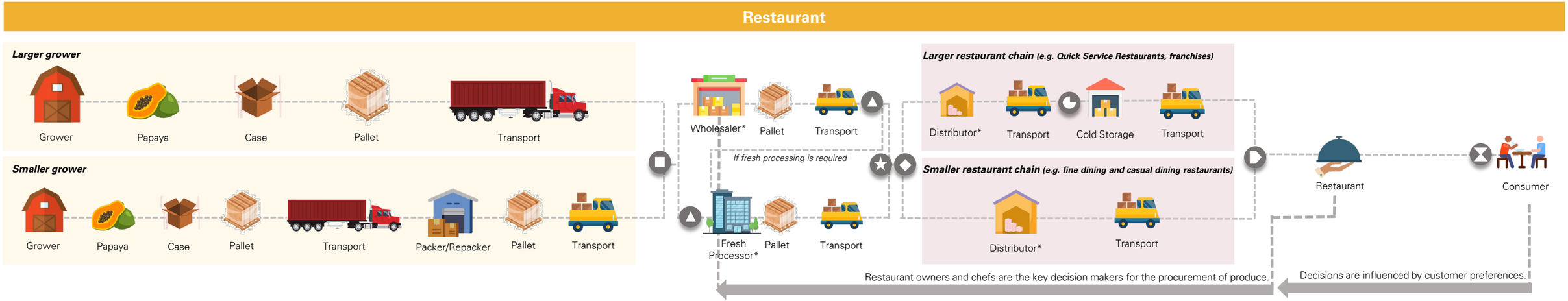


Key insights for the restaurant value chain

- Larger restaurant chains will typically require more sophisticated cold chain management compared to smaller restaurant chains. Cold storage spaces are used to store perishable produce like papaya at low temperatures, thus providing flexibility to larger restaurant chains to secure produce when price points and supply fluctuate. [1]
- Despite the various touchpoints in the restaurant value chain, restaurant operators are growing increasingly conscious of where papayas are coming from and tracking produce to the original source to ensure food safety and anticipate disruptions in the supply chain in order to pivot accordingly. [2]
- Restaurant operators are shifting to technology for supply chain and inventory management to assist in replenishment orders, communicating with suppliers and tracking deliveries. For instance, restaurant POS systems with inventory management tools built in, or integrations with supply chain management solutions, will allow the automation of these steps. [2]
- Larger restaurant chains may have central kitchens which serves as one of the major centers for the storage and preparation of papaya (e.g. cubed. shredded). Products will then be distributed to the various restaurant branches to ensure quality and consistency between outlets. This also helps eliminate the possibility of errors and discrepancies when the purchase orders are raised by different outlets. [3]
- More restaurant owners are looking at vertically integrating their supply chain by working with distributors and suppliers that are able to manage more than one step of the value chain. Operators also aim to procure various produce other than papaya from the same wholesaler to minimize transactions and negotiations for individual categories. [2]

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.
Source: (1) Restaurant owners, (2) Lightspeed, 2021, (3) Posist 2021
Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Volume and frequency of papaya orders is highly dependent on restaurant cuisine due to limited familiarity amongst Australians



Restaurant decision making across the value chain

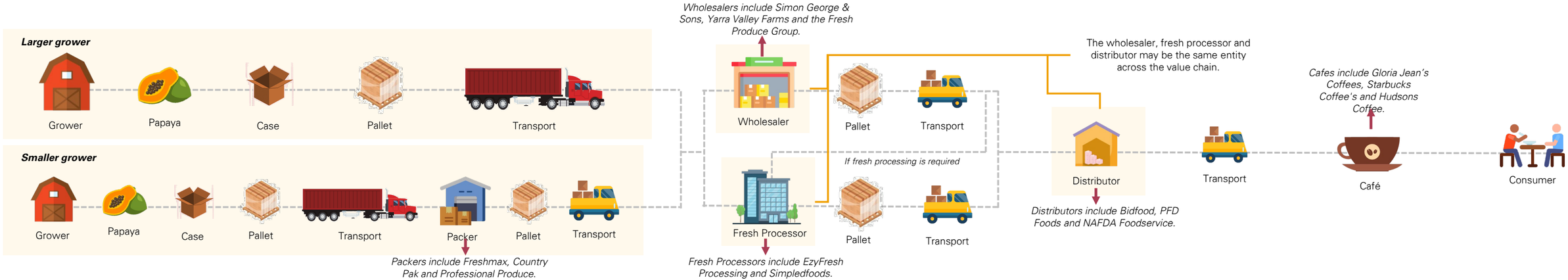
- Key requirements that are sought after when procuring papayas that can be influenced by growers include sustainability, quality and freshness.
- Papayas aren't commonly sold into restaurants. However, whole fruit formats would be preferred by restaurants, without additional processing (e.g. slicing). If pre-processing is required, it may be ordered as pre-washed and julienned for garnishing.
- Larger restaurants typically order produce multiple times a week (2-4x), whereas smaller restaurants generally order produce on a weekly basis. Papayas may be ordered once a week to accommodate one week shelf-life when refrigerated. However, this would vary depending on the restaurant cuisine (e.g. South East Asian cuisines) as papayas aren't commonly desired amongst consumers.
- Quantity of papaya orders fluctuate based on time of year (seasonal consumer desires), in-house specials, menu changes and changing consumer preferences.
- Large restaurant chains rely on restaurant locations ordering from what is available in cold storage units directly for papaya. Inventory management systems indicate current volumes in real time.
- Menu changes at restaurants occur at least 1 to 2 times a year reflective of seasonality. Papayas aren't often used as a main ingredient, but rather a garnish or supporting ingredient.
- Restaurant customers tend to have low papaya familiarity. Consumer preferences for papaya are raw and fresh.

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

When procuring papaya, café operators primarily aim to maximise cost effectiveness, high quality and consistency throughout the value chain

Café



Key insights for the cafe value chain

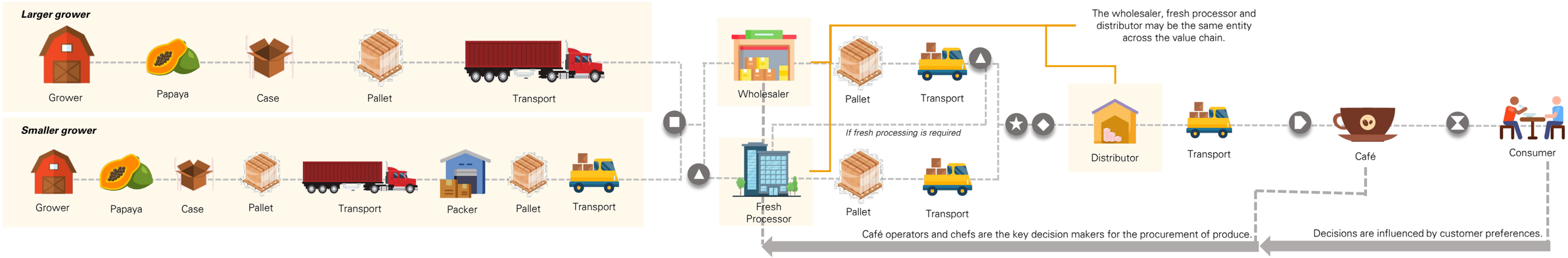
- Café operators tend to re-evaluate papaya suppliers, distributors and vendors often. This is done at least once a year, if not more frequently, and they look for new suppliers who provide more cost effective service whilst getting quality produce. [1]
- Café operators more generally value consistency and reliability of papaya supply above lower prices. This has increasingly become an issue due to availability and labour shortages along the supply chain due to COVID-19. [1]
- Similarly to restaurants, café operators are shifting to technology for centralised supply chain and inventory management systems to breakdown data silos, improve purchasing compliance and reduce food costs through waste. [1]
- Café operators are growing increasingly conscious of the touchpoints in the supply chain and where their papayas are sourced from as café customers are interested in storytelling. Cafes that are able to tell a story about their papaya origin and production have greater leverage to charge a premium. [2]
- Although most cafes are small, independent businesses, large café chains e.g. Starbucks Coffees or Gloria Jean's Coffees may require larger scale logistics and more sophisticated cold chain management if papayas are demanded. [2]

Source: (1) Lightspeed, 2021, (2) Café owner

Insights and value chain maps were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into cafes and café owners.

Similarly to restaurants, papayas are also currently purchased in low volumes and infrequently by restaurant operators due to limited familiarity amongst Australian consumers

Café



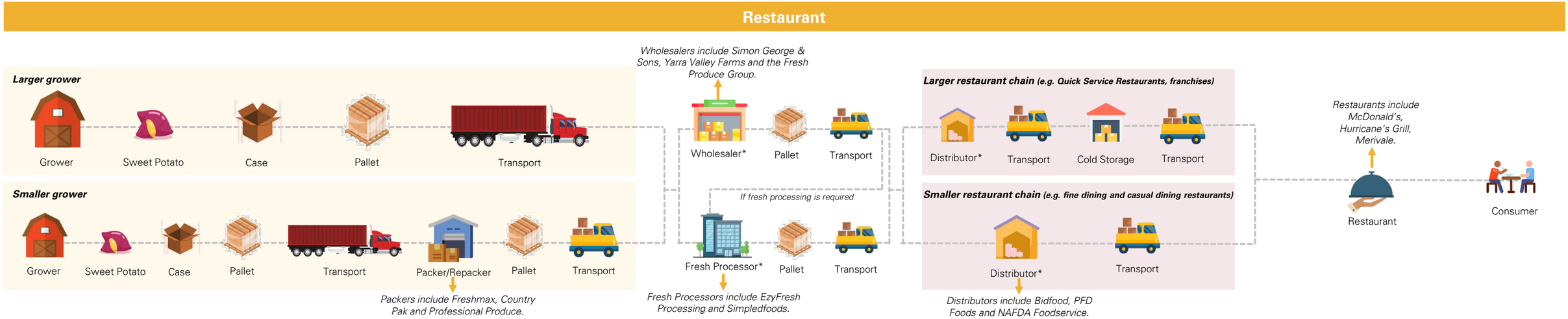
Café decision making across the value chain

- Key requirements that are sought after when procuring papayas that can be influenced by growers include sustainability, quality and freshness.
- Papayas aren't commonly sold into cafés. However, whole fruit formats would be preferred by cafés, without additional processing (e.g. slicing). If pre-processing is required, it may be ordered as pre-washed and diced for fruit salads.
- Cafés typically have smaller operations. They normally order small orders 1-2 times a week. Smaller cafés who rely more on selling beverages than food may only order produce less frequently. Papayas may be ordered once a week to accommodate one week shelf-life when refrigerated. However, this would vary as papayas aren't commonly desired amongst consumers. Therefore, ordering frequency may be low.
- Quantity of papaya orders fluctuate based on time of year (seasonal consumer desires), in-house specials, menu changes and changing consumer preferences.
- Menu changes at cafés occur at least once a year. Since papayas are available all year round, they have opportunity to be worked into menu specials which cafes often have.
- Papaya is not highly demanded by café customers due to low familiarity. If demanded, preferences for papaya are fresh served with other fruit.

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into cafes and café owners.

Sweet Potatoes

Sweet potatoes have significant opportunity in the large restaurant chain market, particularly due to its long fresh shelf-life and ability to meet large restaurant chain logistics

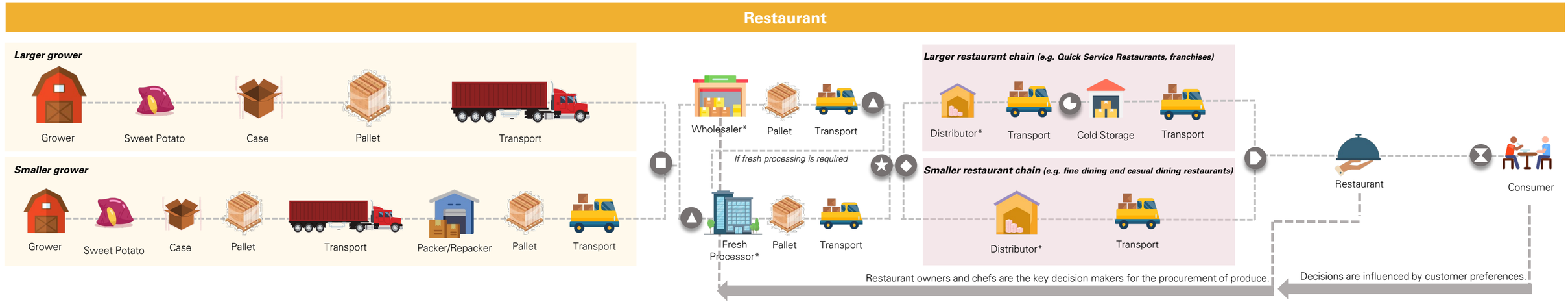


Key insights for the restaurant value chain

- Larger restaurant chains will typically require more sophisticated cold chain management compared to smaller restaurant chains. Cold storage spaces are used to store produce like sweet potato (which are typically bulk ordered) at low temperatures, thus providing flexibility to larger restaurant chains to secure produce when price points and supply fluctuate. [1]
- Despite the various touchpoints in the restaurant value chain, restaurant operators are growing increasingly conscious of where sweet potatoes are coming from and tracking produce to the original source to ensure food safety and anticipate disruptions in the supply chain in order to pivot accordingly. [2]
- Restaurant operators are shifting to technology for supply chain and inventory management to assist in replenishment orders, communicating with suppliers and tracking deliveries. For instance, restaurant POS systems with inventory management tools built in, or integrations with supply chain management solutions, will allow the automation of these steps. [2]
- Larger restaurant chains may have central kitchens which serves as one of the major centers for the storage and preparation of sweet potatoes (e.g. peeled, cubed). Products will then be distributed to the various restaurant branches to ensure quality and consistency between outlets. This also helps eliminate the possibility of errors and discrepancies when the purchase orders are raised by different outlets. [3]
- More restaurant owners are looking at vertically integrating their supply chain by working with distributors and suppliers that are able to manage more than one step of the value chain. Operators also aim to procure various produce other than sweet potato from the same wholesaler to minimize transactions and negotiations for individual categories. [2]

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.
Source: (1) Restaurant owners, (2) Lightspeed, 2021, (3) Posist 2021
Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Volume and frequency of sweet potato orders from restaurants are highly dependent on the size of establishment and cuisines served



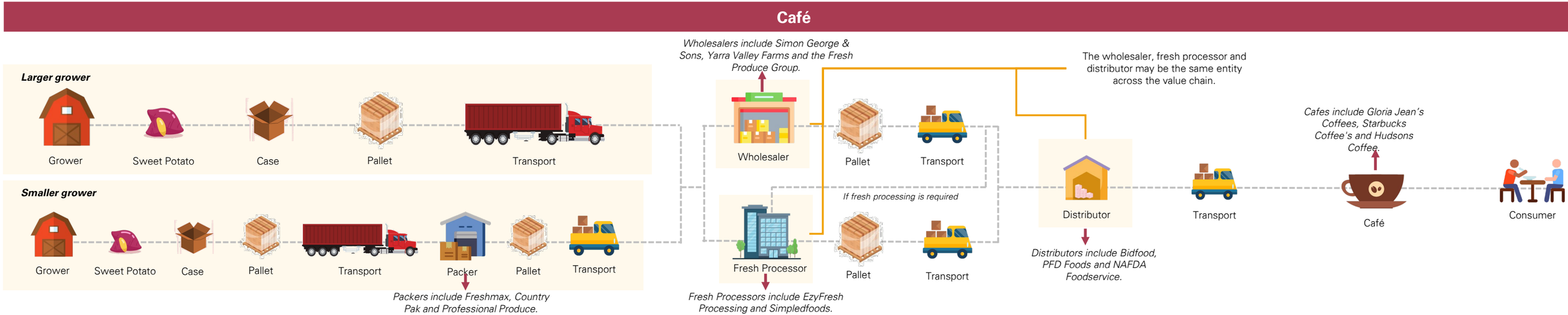
Restaurant decision making across the value chain

- Key requirements that are sought after when procuring sweet potato that can be influenced by growers include sustainability and quality.
- Sweet potatoes are becoming a popular processed and whole ingredient in restaurants. They go through a fresh processor before reaching a restaurant to be washed, peeled, diced, sliced, chopped, pureed, and made into chips.
- Larger restaurants typically order produce multiple times a week (2-4x), whereas smaller restaurants generally order produce on a weekly basis. Sweet Potatoes may be ordered in large quantities once a week or once a fortnight to accommodate for long fresh shelf-life. However, this would vary depending on the type of restaurant as some sweet potatoes are more widely used in Asian and African dishes.
- Quantity of sweet potato orders fluctuate based on in-house specials, menu changes and changing consumer preferences.
- Large restaurant chains rely on restaurant locations ordering from what is available in cold storage units directly for sweet potatoes. Inventory management systems indicate current volumes in real time.
- Menu changes at restaurants occur at least 1 to 2 times a year. Sweet potatoes, are a more stable category in how much they remain on a restaurant menu.
- Restaurant customers tend to have high sweet potato familiarity. Consumer preferences for it are roasted, sauteed or fried.

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Café operators are growing more conscious of where and how produce is sourced in order to tell a story about ingredient origin thus able to rationalise higher prices for premium produce



Key insights for the cafe value chain

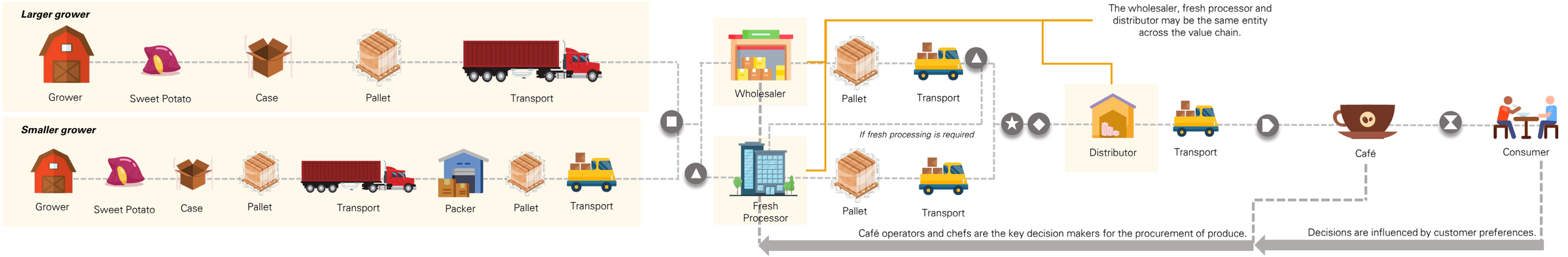
- Café operators tend to re-evaluate sweet potato suppliers, distributors and vendors often. This is done at least once a year, if not more, and they look for new suppliers who provide more cost effective service whilst getting quality produce. [1]
- Café operators more generally value consistency and reliability of sweet potato supply above lower prices. This has increasingly become an issue due to availability and labour shortages along the supply chain due to COVID-19. [1]
- Similarly to restaurants, café operators are shifting to technology for centralised supply chain and inventory management systems to breakdown data silos, improve purchasing compliance and reduce food costs through waste. [1]
- Café operators are growing increasingly conscious of the touchpoints in the supply chain and where their sweet potatoes is sourced from as café customers are interested in storytelling. Cafes that are able to tell a story about their sweet potato origin and production have greater leverage to charge a premium. [2]
- Although most cafes are small, independent businesses, large café chains e.g. Starbucks Coffees or Gloria Jean's Coffees may require larger scale logistics and more sophisticated cold chain management for sweet potatoes.[2]

Source: (1) Lightspeed, 2021, (2) Café owner

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.

Due to their long fresh shelf life, sweet potatoes are typically procured in larger quantities less frequently in the café channel

Café



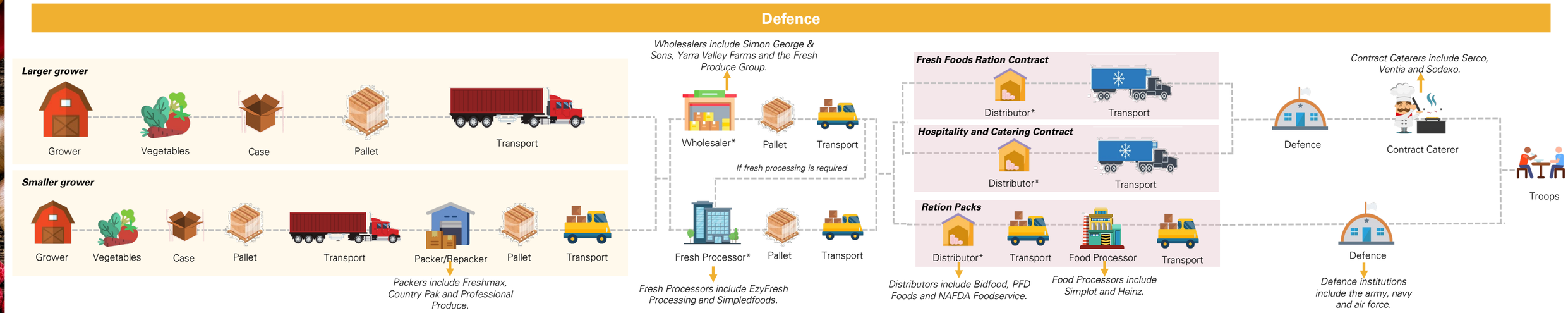
Café decision making across the value chain

- Key requirements that are sought after when procuring sweet potatoes that can be influenced by growers include sustainability and quality.
- Sweet Potatoes are becoming more popular in cafés. They often go through a fresh processor before reaching the café to be turned into vegetable dips, wedges, chips and purees for foods and beverages e.g. sweet potato lattes.
- Cafés typically have smaller operations. They normally order small orders 2 times a week. Smaller cafés who rely more on selling beverages than food may only order produce less frequently. Sweet potatoes are typically ordered in less frequent large orders due to their long fresh shelf-life. Therefore, ordering frequency may be low.
- Quantity of sweet potatoes are consistent throughout the year but mainly depend on in-house specials, menu changes and changing consumer preferences.
- Menu changes at cafés occur at least once a year. Sweet potatoes have relatively consistent supply, especially if processed then frozen. Consequently, they are a more stable category in how much they remain on a café menu.
- Café customers tend to great liking to sweet potatoes for nutritional and high palatability reasons. Consumer preferences for sweet potatoes are fried (chips). However, there is opportunity for more creative cooking techniques to be explored.

Insights were informed by stakeholders in consultations. Key stakeholders included wholesalers/distributors into restaurants and restaurant owners.


Vegetables

Due to limited points of entry, building relationships with contract caterers is integral for entry in the Defence foodservice channel



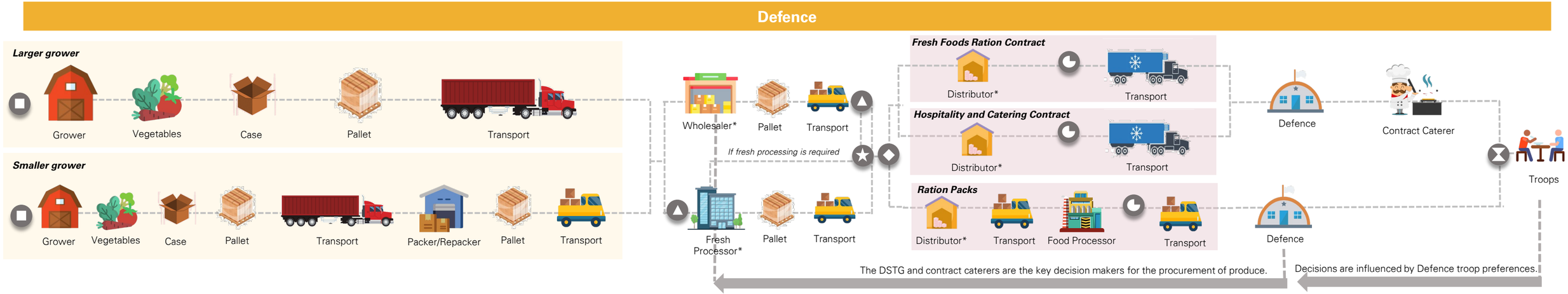
Key insights for the health value chain

- The two main points of entry for the Defence foodservice channel lies in the Fresh Foods Ration Contract and the Hospitality and Catering Contract. Due to the mature and established relationships currently in place with these contracts, market entry is a challenge for the vegetables industry and greater efforts must be exerted to build relationships with the involved parties. [1]
- Due to the nature of the Defence channel and its troop missions, food is often consumed at remote field locations. As such, bulk transport and cold chain management of vegetables is integral to the value chain. The complex and inflexible nature of the Defence value chain poses as a challenge for closer engagement between growers and the Defence channel. [1]
- Ration packs differ significantly from on-site cooked dishes. These packs are heavily processed and are designed to be consumed without cooking or heating. These meals are made ready to consume before arriving at Defence institutions. Ration packs have a shelf-life of up to five years. [2]
- Contract caterers are heavily involved in the Defence foodservice value chain. Contract caterers are third parties who are responsible for preparing and cooking meals at specified location. Contractors also typically provide facilities management services, including laundry and cleaning. [1]
- The Defence Science and Technology Group (DSTG) are responsible for setting procurement and catering standards. These help guide decisions made by contract caterers who are heavily involved in the procurement and transport of produce in the value chain. [1]

Hort Innovation
Strategic levy investment

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.
Source: (1) Defence Partner. (2) Australian Government Department of Defence 2015
Insights were informed by stakeholders in consultations. Key stakeholders included Defence Partners and Defence Subject Matter Experts.

Decisions surrounding vegetable procurement is largely based on produce ability to be value added and withstand long transit times

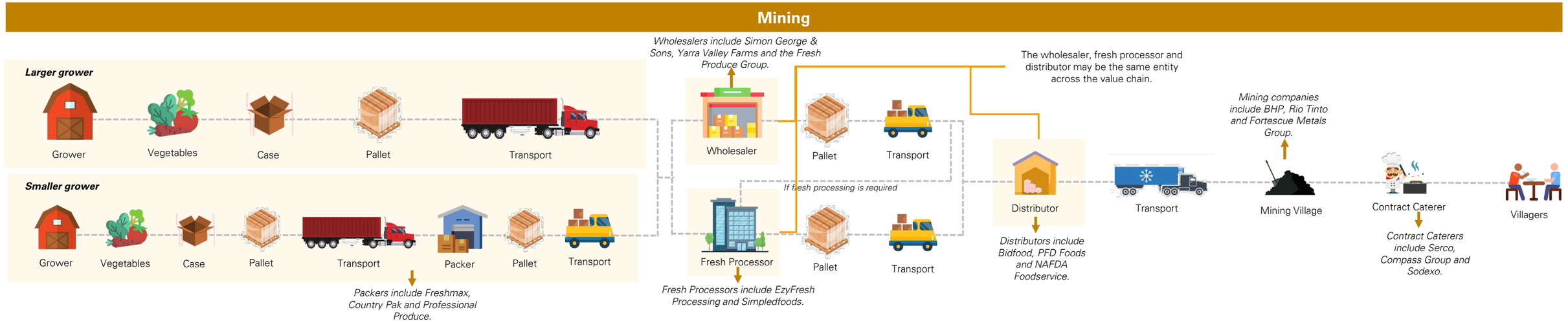


Defence decision making across the value chain

- The Defence channel has a strong preference for sourcing locally grown and supplied vegetables, procuring from Australian growers over imported products where possible.
- Vegetables are typically desired pre-prepared (sliced, peeled, mixed etc.) and packaged as the Defence channel requires large volumes of vegetables. Value added vegetables helps reduce preparation time, effort and lacerations.
- Defence foodservice is a large operation, ordering large bulk orders on a regular basis. Due to the frequent use of vegetables in various dishes, a significant volume of vegetables is required. Vegetables are typically ordered multiple times a week depending on shelf-life of produce.
- The quantity of vegetables ordered is relatively consistent throughout the year as vegetables are incorporated in various breakfast, lunch and dinner meals. Consideration is also given to the quantity of ration packs required.
- Meals in the Defence channel may be consumed off-site, requiring various forms of transport and cold chain management depending on product format.
- Vegetables are well-liked by troops as they are a flavoursome ingredient incorporated in various popular savoury dishes. Troop satisfaction is a factor considered when creating menu items.

* The wholesaler, fresh processor and distributor may be the same entity across the value chain.
Insights were informed by stakeholders in consultations. Key stakeholders included Defence Partners and Defence Subject Matter Experts.

The mining foodservice value chain is long and complex due to the involvement of various third parties to transport produce into isolated mining villages



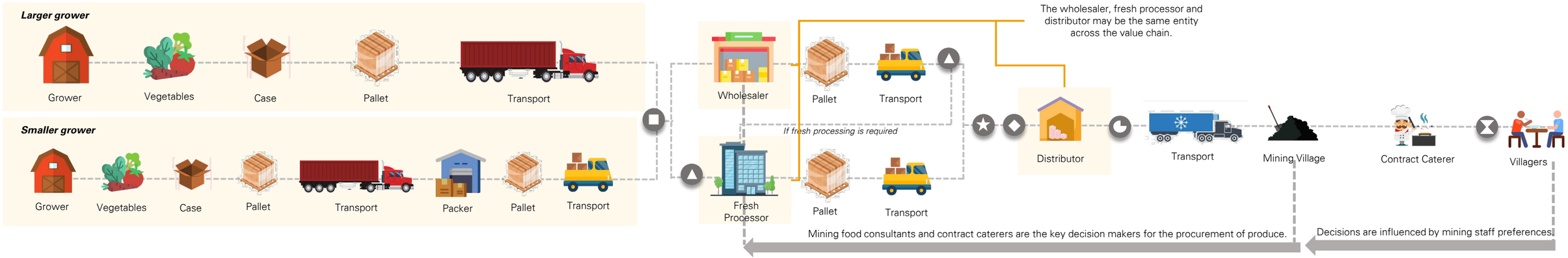
Key insights for the mining value chain

- Mining villages are typically in rural areas which means large scale transport and sophisticated cold chain management is critical to ensure freshness of vegetables. Mining staff are typically eating 3-4 day old vegetables if transported from a distributor in a large city (e.g. Perth) to a mining site. This is particularly important for vegetables with a shorter shelf-life. [1]
- The mining foodservice value chain integrates the use of catering companies e.g. Compass Group. Contract caterers are third parties who are responsible for preparing and cooking meals at the specified location. Caterers also typically provide facilities management, including laundry and cleaning services. [1]
- Mining companies and consultants set produce procurement and quality standards which aim to improve the living standard of mining staff. Whilst catering companies make decisions guided by these food standards, caterers are predominantly focused on minimising costs along the value chain.[1]
- Contract caterers serve breakfast at mess halls. During this time, mining staff will pack their own lunch and heat it up at the mining site in the afternoon, further extending the time before vegetables are consumed and impacting freshness of produce. Dinner is served at the mess halls when mining staff return.[1]
- There is an increasing focus on preserving freshness and quality of vegetables along the value chain as improving the visual appeal of food is becoming a priority in mining camps in order to enhance the living and eating experience of mining staff. This is particularly important for vegetables such as lettuce, mesclun and tomatoes where freshness is visually apparent. [1]

Source: (1) Mining foodservice consultants
Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.

As mining staff (also known as Villagers) increasingly demand fresh and high quality produce, decisions surrounding vegetable procurement predominantly focus on preservation of vegetable freshness along the value chain

Mining



Mining decision making across the value chain

- The mining foodservice channel will aim to procure highly nutritious vegetables as mining companies increasingly focus on introducing healthier foods and meeting nutritional guidelines.
- The mining channel typically demands value added vegetables (peeled, sliced and packaged) as it is commonly utility staff (not chefs) who handle the preparation of vegetables. Pre-prepared vegetables help save time, costs and avoids lacerations. Low wastage is also preferred.
- Mining camps are large operations, requiring frequent bulk produce orders over the 14 day mining rotational period. Vegetables may be ordered multiple times during this period depending on shelf-life of produce.
- The quantity of vegetables ordered is relatively consistent throughout the year due to the high volumes of vegetables used in dishes. Vegetables, particularly tomato, broccoli and cauliflower, are staple ingredients on the menu every week.
- Cold chain management and transport is particularly important for mining villages as they are located in rural areas. Consideration must be given to total transit times.
- Fresh and healthy vegetables is increasingly becoming a high priority for mining staff. Vegetables are also well-liked due to its versatility in breakfast, lunch and dinner meals.

Insights were informed by stakeholders in consultations. Key stakeholders included mining foodservice consultants.