MG21000 Mango Export Strategy

Hort Innovation
Strategic levy investment

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1. Executive Summary

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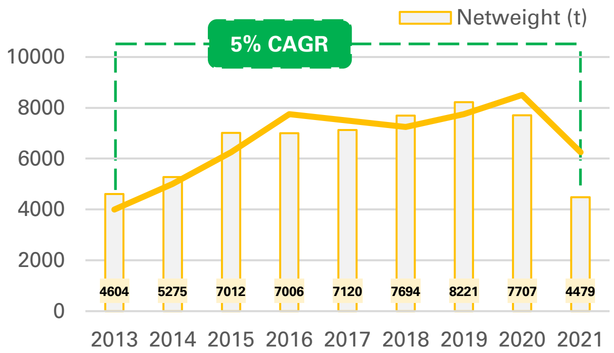
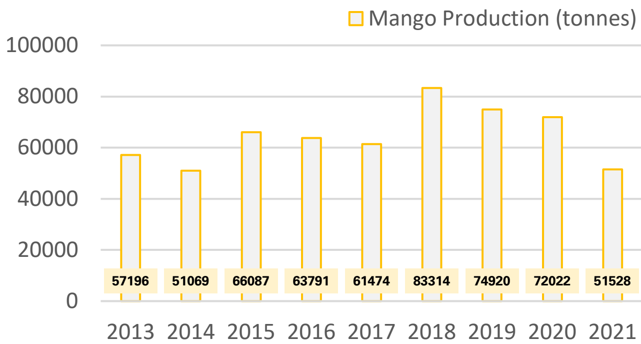
The Australian mango industry is in a unique position for growth

The Australian mango industry is at a stage of significant growth potential. Despite disruption over the past two years caused by the global COVID-19 pandemic and poor seasonal conditions, the industry has shown consistent year-on-year export growth over the past decade, increasing export volumes by 62%[1] and following a 5 per cent annual growth rate, as shown below. As global economies slowly recovers from the pandemic, the Australian mango industry finds itself in a unique position to recover recent export declines and maintain growth by capitalising on global demand for healthy, quality products such as mangoes.

Growth in Australian mango exports[2]
CY2013-2021
Tonnes, AUD $ million



Australian mango production[2]
CY2013-2021
Tonnes



The Australian mango industry has an ambitious goal to underpin future growth: increasing the share of production exported from 9 per cent in 2019-20 to 20 per cent.

The key drivers of this ambition are dynamic and diverse, listed below.

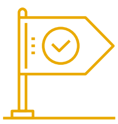
Maintain competitiveness

- Protect existing market share against low input-cost competing export nations

Recover from recent disruption

- Make up for decline by identifying new customers, channels, and market entry strategies

Reduce pressure on domestic market



- Diversify distribution streams to mitigate risk of oversupply and unfavourable pricing[3]

Capitalise on Australian reputation for quality

- Access untapped demand for premium by leveraging Australian mangoes' unique selling proposition

To drive future this export growth, this updated Australian Mango Industry Export Strategy intends to enable the Australian mango industry to grow exports, ensure the ability to maintain and increase global market share, build export capacity and capability, and provide necessary support to relevant stakeholders across the export supply chain.

Source: (1) UN Comtrade Database; (2) Australian Horticulture Statistics Handbook 2020/21; (3) Australian mango season wraps up;

To capitalise on this growth, industry needs a targeted and informed export strategy

This export strategy has been designed to position the Australian mango industry with the intelligence, direction and support it needs to unlock new and diverse export opportunities over the next five years 2022-2026.

This strategy intends to work toward the following outcomes:

Growth in export value, volume and countries and markets addressed

Through targeted insights backed by robust data and industry inputs

Increased activity and engagement in export market opportunities

Enabled by a clear understanding of practical growth opportunities.

Greater awareness and capacity for industry adoption

Adoption of the strategy through consultation with industry and Hort Innovation across lifecycle of the strategy.

Practical, commercially-relevant direction for growers

Regarding relationship development, supply chain success, biosecurity considerations, regulations and consumer preferences.

To do so, this export strategy:

- Unpacks the current state of the mango industry.
- Analyses the phytosanitary requirements of each market and how this impacts export opportunities
- Identifies priority export markets for industry to target, based on a number of validated criteria.
- Uses these insights to outline short, medium and long-term objectives for Australian Mango exports to pursue or expand exports in these markets.
- Summarises industry's reported experiences, challenges and ambitions for exporting to these priority markets.
- Recommends a series of practical activities to work toward these objectives.

Industry is faced with the highest growth potential in five key export markets

The Australian mango industry has the opportunity to pursue new and rapidly growing export markets as well as expand presence in markets where strong demand for Australian mangoes. already exists.

This strategy contains targeted research and analysis for five of these markets, which were chosen by industry based on a number of criteria. Together with industry input this research and analysis, which is captured in five market profiles in the **Appendix** of this strategy, highlighted five different export opportunities for each market for Australian exporters to pursue.

Five different export markets present valuable export opportunities for Australian mango exports, selected for a number of reasons:

Japan

- Opportunity to trial new varieties
- High income consumer groups who accustomed to premium Australian mangoes

USA

- Large addressable market size
- Expanding market access negotiations underway

India

- Strong demand for mangoes and seasonality supply gap opportunities
- Current acceptance of irradiation treatments

Netherlands

- Addressable domestic demand, open market access
- Re-export opportunities across European Union

China

- Stable demand despite recent challenges
- Need to protect market share until opportunities to expand access arise

Export opportunities identified in these markets revolve around five key themes:

Maintain market access and quality
Maintain quality production to ensure ongoing reliable access to existing markets.

Expand market access
Pursue additional market access pathways for current and new markets, including for irradiation and in-transit cold treatment processes.

Enhance marketing and communications in markets
Communicate to consumers, importers and retailers the safety of irradiation as a treatment pathway as well as the premium nature of Australian product varieties.

Build relationships with retailers
Partner with premium retailers in-market to ensure trust and reliability in ongoing export transactions and increase visibility over supply chains.

Optimise supply chains
Explore ways to potentially shorten lead times and increase the scale and consistency of export shipments.

Opportunities for Australian mango exporters vary across each of the five markets

In line with both current and future industry export capability and objectives, the following key opportunities have been identified for industry to pursue in each priority export market.

Market	#	Export Growth Activities
China	1	Develop networks and channels to Tier 2 and 3 cities
	2	Form local partnerships to absorb volume-driven second-grade supply
	3	Promote efficacy and safety of irradiation
	4	Bolster marketing efforts to support Australia's competitive advantages around seasonality, fruit quality and food safety
	5	Identify and leverage in-transit cold chain logistics providers for transport throughout China
USA	1	Optimise supply chain processes to ensure consistent quality
	2	Deliver in-market promotional campaigns during holiday season to capitalise on counter-seasonality
	3	Increase varietal range supplied
	4	Partner with leading e-commerce providers
	5	Review and negotiate MRLs to ensure they aren't restricting trade growth
India	1	Build relationships with retailers in Tier 1 cities
	2	Advocate for expanded market access via irradiation pathway
	3	Target in-market communications during Indian mango off-season
	4	Monitor progress of new trade agreement and participate in established working groups to advocate for inclusion of mangoes
	5	Explore potential to partner with e-commerce players in the long term
Japan	1	Explore the potential for Australian industry collaboration to aggregate logistics costs
	2	Deliver marketing campaigns to capture gift giving tradition demand
	3	Improve omni-channel presence to capture online demand
	4	Explore distribution opportunities in un-tapped channels (e.g. D2C, Food service)
	5	Negotiate the case for irradiation at a government level
The Netherlands	1	Contribute to irradiation negotiations with the mango-specific business case at an EU member-state level
	2	Provide mango-specific insights to planned or ongoing horticulture-wide education campaigns for EU consumers on irradiated products
	3	Invest in R&D to improve consistency in supply and product robustness over extended shipping times
	4	Consider consolidating exports to drive required critical mass
	5	Monitor evolving MRL frameworks to ease compliance with EU regulations

Additional, mostly long-term opportunities in alternative markets Bangladesh and Vietnam were also identified, as shown in Appendix 1 on page 33.

2. Current state overview of Australian mango exports

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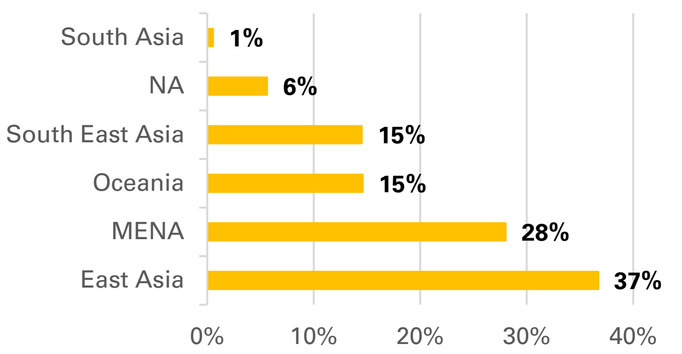
Industry's current export agenda has capacity for growth and diversification

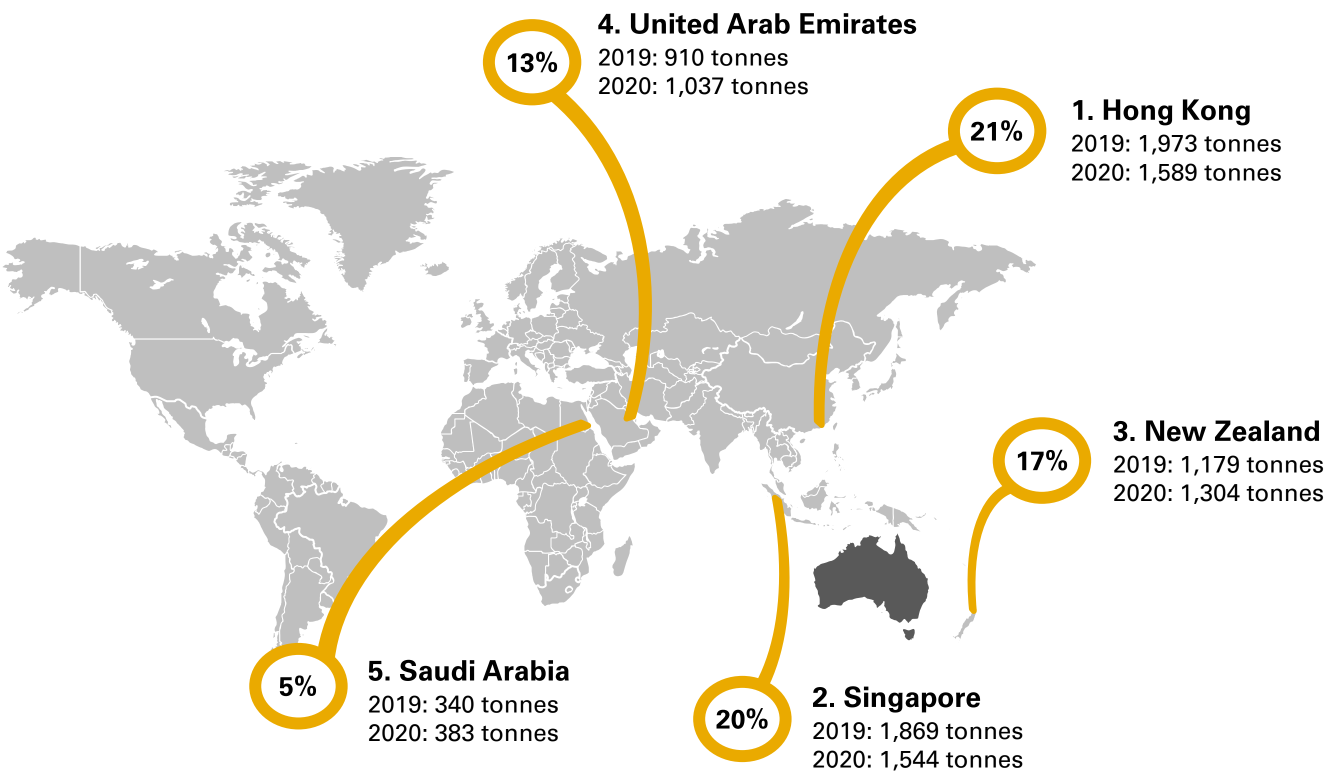
Australia currently exports to 24 global markets, largely concentrated in the Middle East North Africa (MENA), Southeast Asian, and East Asian regions. East Asia is Australian mangoes' most valuable export region, accounting for 37 per cent of total export value as illustrated below.[1]

Exports of Australian mangoes in 2020/21 were valued at AUD $25 million, accounting for only 2 per cent of total production value, reflecting the considerable opportunity to increase exports.[2] A key focus for the Australian mango industry to achieve this growth is negotiating improved market access pathways, which will provide diversify market entry pathways and meaningfully impact industry's ability to increase market share in existing export destinations.

Regional share of Australian mango export trade[1]



Australia's top 5 mango export markets[2]



Emerging barriers to trade such as geopolitics, logistics disruptions and competition in recent years have caused Australia's export opportunities in the markets above to fluctuate, increasing industry's interest in expanding market access into new or emerging high-growth markets with limited or no current market share.

Together with industry this strategy seeks to set a plan for industry's expansion into the five priority export markets identified on page 7.

Source: (1) UN Comtrade Database; (2) Australian Horticulture Statistics Handbook 2020/21

Industry currently has an agreed view of its export capabilities and ambitions

Current mango industry export capabilities and capacities were assessed in the development of the export strategy to inform the opportunities, objectives and activities it recommends.

The table below shows industry's agreed self-rating for key aspects of the export process, therefore indicating the areas needed to be captured by the strategy.

Export Criteria	1	2	3	4	5
(A) Market Demand Potential Do we understand the potential demand of key export markets?				4	
(B) Market Access To what extent do we understand the processes to expanding new export markets?	1				
(C) Supply Chain Capability How would you rate our supply chain capability in terms of efficiency and resiliency?			3		
(D) Local Marketing To what degree have we pursued specific market advertising campaigns?		2			
(E) Channel Strategy To what extent do we understand the different export channel options?		2			
(F) Consumer Preference To what extent do we understand consumer preferences in export markets?			3		
(G) Seasonality Advantage To what degree do we understand our seasonality advantages against key competitors?					5
(H) Degree of Competition To what extent do we understand the global competition landscape? (Who, where, when)			3		

KEY
- 5 – All members are capable/ advantaged in this area
- 4 – Most members are capable/ advantaged in this area
- 3 – Some members are capable/ advantaged in this area
- 2 – Few members are capable/ advantaged in this area
- 1 – Close to no members are capable/ advantaged in this area

This assessment ensures the export opportunities identified in this strategy recognises industry's areas strengths as well as areas in need of an increase in maturity to realise full potential.

Industry faces key challenges in diversifying exports and pursuing its ambitions

The themes below were flagged by industry as the key barriers to expanding the mango export agenda to priority markets. Export opportunities have been designed around addressing these pain points to enable industry to realise its export ambitions.

Market access

- Achieving irradiation market access pathways is a top priority for industry, to preserve product quality.
- A lack of visibility over changing market access regulations regarding inspections and treatments was flagged as a major pain point.

In-market communications

- A need for greater education of both consumers and governments on the safety of irradiation was flagged as a critical step to widen longer term market access.
- More effective promotion of the high-quality nature of Australian mangoes in markets was also raised.

Product consistency

- Industry consistently noted that the key downfall in Australian mangoes' competitiveness in market was a lack of ability to export consistent products at scale, on an ongoing basis.
- This was indicated as creating a more ad hoc, silo-based, opportunistic approach to exports.

Competition

- An unwavering disadvantage discussed was industry's significantly high input costs compared to other mango exporters, made more acute when trading to geographically distant export markets.
- A need for greater visibility over the seasonality of major competitors in target markets was flagged as a means to improve this issue.

The overarching conclusion around industry's current and aspired capability for export in the various areas discussed was that capability is largely based on current or past experience of individual growers with export.

All participants had a strong idea of current requirements for export, high-level demand in priority markets and respective operational requirements, while more specialised knowledge of channel strategy, evolving market access arrangements, and local marketing were identified as capability areas in need of improvement.

As one of the challenges raised by industry, access varies across the five markets

Access into the five priority export markets including treatments, certificates, permits and other phytosanitary requirements differ for each target export market, which has influenced the export opportunities identified in each.

Australian mangoes have four main treatment pathways available across the selected the markets, with vapour heat treatment the most common across current trading partners. Efforts are underway at a government level to promote the efficacy of irradiation, industry's preferred treatment pathway.

The location of export treatment facilities is directly linked to the phytosanitary export pathways available for Australian mangoes, particularly considering 51% of production is located in the Northern Territory and 45% is located in Queensland. Transport between production, treatment and distribution is therefore a key variable in supply chain efficiency which impacts export opportunities identified in each market. The location of treatment facilities is located in **Appendix 2** on page 36.

The market access matrix below indicates that destinations such as India require further development to allow Australian mango exports, whereas existing top mango trade partners have open access trade. A key consideration in the export strategy is therefore activities required to achieve market access to new markets such as India, as well as means by which access into current markets can be expanded.

Phytosanitary Matrix – Five Priority Markets

	Access (Open / Protocol / Closed)[3]	Protocol (restricted access) Market?[3]	Phytosanitary Certificate Required?[3]	Import Permit Required?[3]	Free Trade Agreement and Tariffs[1,4]	Fumigation[3]	Cold[2]	Irradiation[3]	Heat (VHT)[3]
China	Yes	Protocol	Yes	Yes	Yes ChAFTA, RCEP – 0% Tariff	No	No	No	≥ 47 degrees celsius for 15min OR ≥ 46 degrees celsius for 20min
Japan	Yes	Protocol	Yes	No	Yes JAEPA, RCEP, CPTPP – 0% Tariff	No	No	No	≥ 47 degrees celsius for 15min (minimum)
India	Closed	No	Yes	No	No	*Not a protocol market*			
USA	Yes	Protocol	Yes	Yes	Yes AUSFTA – 0%	No	No	Minimum absorbed dose of 300 gy	No
Netherlan-ds	Yes	No	Yes	No	Yes 0% Tariff	*Not a protocol market*			

A full matrix of the phytosanitary requirements of a long list of mango export markets can be found in **Appendix 2** on page 34.

Note: (1) All FTAs are in relation to mangoes (2) Fruit intended for in-transit cold treatment must be pre-cooled to, or below, the target treatment temperature before loading
Source: (3) Australian Government Department of Agriculture, Water and the Environment, *Manual of Importing Country Requirements;* (4) DFAT, *FTA Portal*

3. Future export objectives & industry activities

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Export opportunities focus on five key areas where industry aims to mature and grow

Defined with industry's input, there are five main focus areas for future export ambitions identified within this strategy. These have been mapped over short, medium and longer term timelines with suggested supporting activities and key stakeholders on the following pages.

Maintain market access and quality

Maintain current quality production and continue exporting to existing markets, in order to support consumer awareness of Australian product quality, appease importers and Governments, and build a case for future market access expansion.

Expand market access

While gaining irradiation market access is industry's priority goal, negotiating for in-transit cold treatment pathways or other alternatives should also be pursued where appropriate. Advocating for the safe and sustainable nature of irradiation to governments, highlighting where several markets do have experience using the treatment, will be key to secure market access that accommodates industry priorities.

Enhance marketing and communications in-market

Separate to government advocacy, industry has emphasised the need local consumers on the safety, sustainability and high-quality of irradiated mangoes as well as the premium nature and seasonality advantages offered by Australian mango varieties in general. Shifting consumer mindsets will be key to support Australia's reputation once irradiation pathways are made available.

Build relationships with retailers

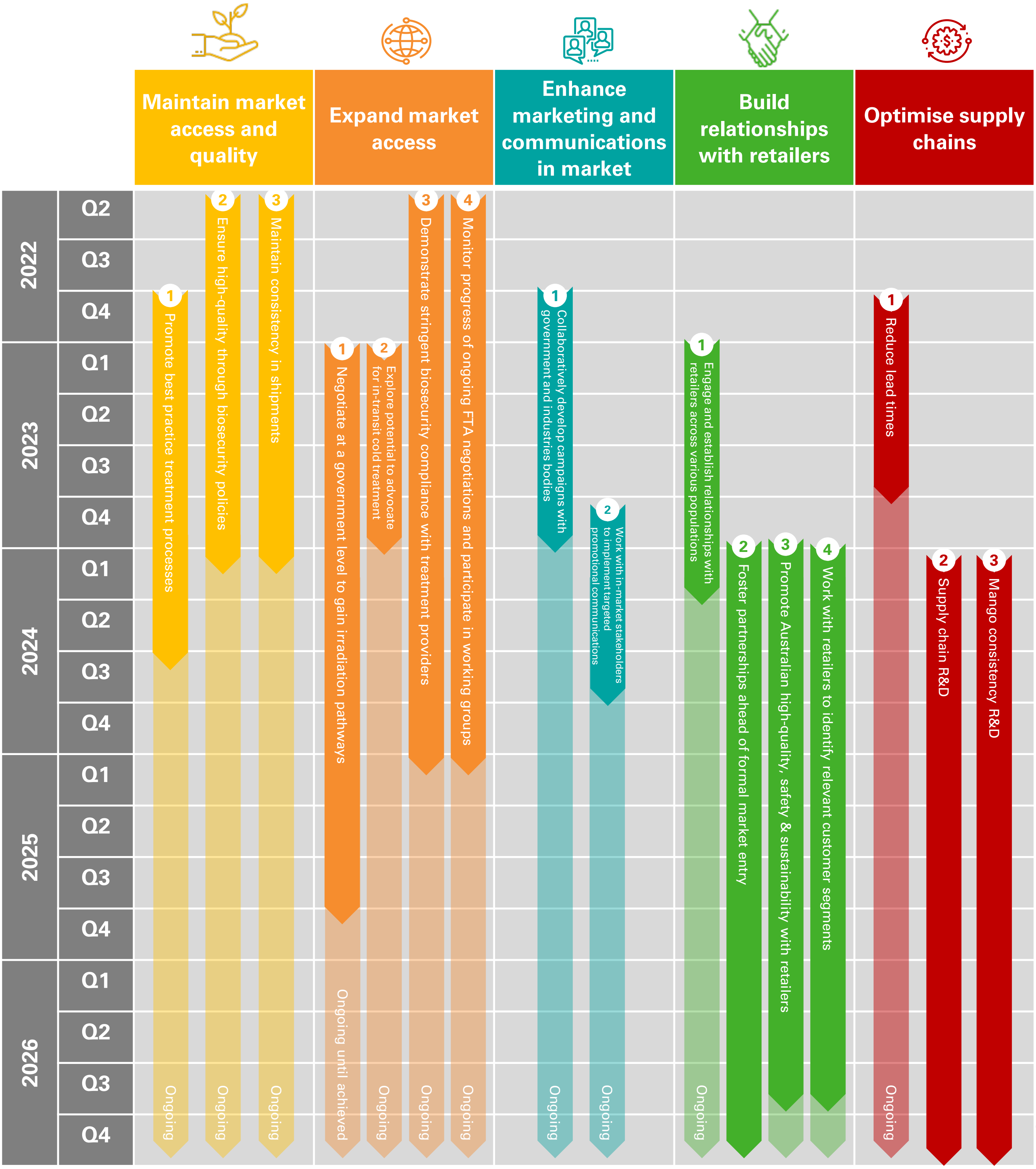
Capitalising on both current and future market access will require strong partnerships with retailers in markets to ensure trust, consistency, and secure ongoing export transactions. Given the rapid growth or established dominance of the retail sector in priority export markets analysed, proactively establishing a presence will enable successful ongoing relationships.

Optimise supply chains

Finding means to shorten lead times to build critical mass export volumes was flagged by industry as critical to preserve product quality and increase cost competitiveness of exports. This may be achieved by gaining in-transit treatment pathways, consolidating supply at key supply chain touchpoints or investigating production means which increase shelf life.

Activities to achieve opportunities sit across the short, medium and long term

The activities mapped below provide an indicative timeline for when particular activities should be implemented. Each activity should be prioritised based on the individual market being pursued and can be areas of continued focus depending on the degree of success seen. Certain activities can also be initiated earlier if developments occur sooner than expected.



Maintaining current market access will be a foundation for future export success

Activities to support the maintenance of current market access and quality have been identified and mapped across short, medium and long term time frames.

Short term

Objective	Impact	Actions
Maintain market access and quality	Ensuring treatment and production methods continue to support current market access, enabling industry to protect market share, develop export capabilities and provide rationale for future market access advocacy.	1. Continue to abide by and promote best practice treatment and inspection processes, where possible capitalising on opportunities to streamline these processes. Maintain collaboration and open communication between industry and government around approval and registration requirements. 2. Maintain reputation for quality in current export markets by demonstrating stringent compliance with markets' biosecurity policies. Particularly for countries like China, process consistency and product quality will be critical in advocating for future market access. Look to reduce risk of breaches in inspection processes by leveraging and advocating for digitised trade documents as part of these processes. 3. Aim to maintain consistency in shipments and navigate supply chain complexity by continually monitoring evolving shipping schedules and delays.

Short Term
<2 years

Medium term
2-4 years

Long Term
4+ years

Maintain market access and quality

Optimise supply chains

Expand market access

Enhance marketing and communications in-market

Build relationships with retailers

Maintaining market access will require emphasis on quality and compliance

The following table outlines specific steps towards pursuing the export development 'Maintain market access and quality' objective, provides an estimated timeframe for each activity for the industry to work toward, and identifies the relevant stakeholders for each action.

Maintain market access and quality

Action	Activities	Timeframe	Stakeholders
Continue to abide by and promote best practice treatment and inspection processes, where possible capitalising on opportunities to streamline these processes. Maintain collaboration and open communication between industry and government around approval and registration requirements.	Form a bi-annual forum for the Australian Government and industry to discuss practicality of treatment and inspection processes and associated challenges, providing an opportunity to discuss any efficiency opportunities.	6 – 12 months / ongoing	• AMIA • Industry • Australian Federal Government
	Support the Australian Government to release quarterly updates on developments around treatment and inspections processes to ensure industry is up to date and understands evolving changes.	1 year / ongoing	**Export markets:**   
Maintain reputation for quality in current export markets by demonstrating stringent compliance with biosecurity policies. Particularly in countries like China, this consistency and high quality will be critical in building the case for future market access expansion. Look to reduce risk of process breaches by leveraging and advocating for digitised trade documents.	Engage in regular discourse with overseas governments on the performance of Australian exporters relating to biosecurity protocols, discussing ways to improve if necessary.	< 2 years / ongoing	• AMIA • Industry • Australian Federal Government • Hort Innovation
	Encourage the use of paperless cross-border trade. Educate industry with an annual workshop and easy to understand documentation to support the use of digital certificates for fruit origins and phytosanitary treatment completion amongst other use cases, where it is allowed by the importing nation.	1 - 2 years / ongoing	**Export markets:**  
Aim to maintain consistency in shipments and navigate supply chain complexity by continually monitoring evolving shipping schedules, delays.	Engage industry members to conduct regular, targeted market intelligence reporting on global supply chain events to enable more informed freight planning. Consider R&D investments in the integration of AI-enabled predictive analytics into supply chain planning for industry.	Ongoing	• Hort Innovation • Industry • AMIA **Export markets:** *All*

Market access expansion will prioritise irradiation in new and existing markets

Activities to support the expansion of market access pathways have been identified and mapped across short, medium and long term time frames.

Medium term

Objective	Impact	Actions
Expand market access	Drive future export growth by expanding addressable consumer demand Preserve product quality, protecting Australian reputation and brand Reduce lead times to market, increasing competitiveness	1. Negotiate with in-market governments and participate in advocacy activities more broadly to demonstrate the safe and sustainable nature of irradiation market access pathways. 2. As an additional pathway, explore potential to advocate for in-transit cold treatment or other alternatives until irradiation negotiations progress. 3. Continue working with treatment providers to develop necessary datasets and business cases for market access expansion which provide evidence of biosecurity and inspection process compliance, demonstrating the safe and sustainable nature of Australian mangoes. 4. Maintain early preparedness for change in trade relationships by monitoring the progress of ongoing FTA negotiations and new market protocol development with India and the EU. Demonstrate industry compliance with current and projected standards to enable early action on new trade opportunities as they arise.

Short Term <2 years | **Medium term** 2-4 years | **Long Term** 4+ years

- Maintain market access and quality
- Optimise supply chains
- **Expand market access**
- Enhance marketing and communications in-market
- Build relationships with retailers

Mango-specific insights will be required for ongoing market access negotiations

The following table outlines specific steps towards pursuing the expansion of market access for Australian mangoes, provides an estimated timeframe for each activity for industry to work toward, and identifies the relevant stakeholders for each action.

Expand market access

Action	Activities	Timeframe	Stakeholders
Negotiate with in-market governments to demonstrate the safe and sustainable nature of irradiation pathways.	Task Department members with tracking changes in countries' use of and Governments' policies toward irradiation and advocate for Australian market access for mangoes when appropriate.	1 year - ongoing	Federal Government **Export markets:**
As an additional pathway, explore potential to advocate for in-transit cold treatment or other alternatives in Japan and China.	Clarify the specifics of business case needed for in-transit treatments, invest in developing data sets needed for negotiation. Leverage business cases of other Australian horticulture products' achievement of in-transit pathways such as blueberries and stone fruit.	6 months – 1 year	• AMIA • Industry **Export markets:**
Continue working with treatment providers to streamline inspection processes and support in market access business case development by demonstrating stringent biosecurity compliance.	Advocate to continue pandemic-induced policy change where travel to Australia is not required for inspection, by demonstrating effectiveness of using DAWE representatives as alternatives, also explore use of digital collaboration tools to facilitate real-time inspections with key trading partners based upon local legislation.	Ongoing	• Industry **Export markets:** *All*
Maintain early preparedness for change in trade relationships by monitoring the progress of ongoing FTA negotiations and new market protocol development with India and the EU. Monitor the implementation of new trade agreement with India to identify opportunities for mangoes.	Industry body to actively participate in bilateral negotiations and relevant working groups to provide supporting evidence required for inclusion of mangoes in new protocols and trade agreements. In the case of India, use research on export opportunities in the market prioritisation report to advocate for inclusion of Australian mangoes. Demonstrate industry compliance with current standards to enable early action on new trade opportunities.	Ongoing	• Industry • Hort Innovation **Export markets:**
Develop the business case and data sets for protocol negotiation in Japan, India and the US.	Undertake market assessment to quantify likely benefit of new market access, into both new and existing markets. Complete trade assessments panel application using the above data.	1-2 years	• AMIA • Federal Government **Export markets:**

There is capacity to strengthen Australia's quality reputation in export markets

Activities to support the strengthening of marketing and communications in export markets have been identified and mapped across short, medium and long term time frames.

Medium term

Objective	Impact	Actions
Enhance marketing and communications in market	Alleviate consumer concerns over irradiation treatment Strengthen reputation by promoting quality nature of products Drive increased sales and customer engagement	1. Work with governments and relevant industry bodies to collaboratively develop communication campaigns for consumers on the safe and sustainable nature of irradiated mangoes. 2. Where funding allows, work with retailers, importers and in-market professionals to develop and implement promotional communication campaigns for Australian mangoes. Target these at select consumer groups in specific channels, which vary amongst target export markets, to demonstrate the value of Australian products and justify premium pricing structures.

Short Term <2 years | **Medium term** 2-4 years | **Long Term** 4+ years

Maintain market access and quality

Optimise supply chains

Expand market access

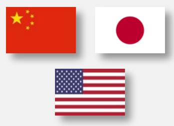
Enhance marketing and communications in-market

Build relationships with retailers

Industry supports ongoing in-market promotional campaigns to grow demand

The following table outlines specific steps towards strengthening marketing and communications in export markets, provides an estimated timeframe for each activity for industry to work toward, and identifies the relevant stakeholders for each action.

Enhance marketing and communications in market

Action	Activities	Timeframe	Stakeholders
Work with governments and relevant industry bodies to collaboratively develop communication campaigns for consumers on the safe and sustainable nature of irradiated mangoes.	Provide mango-specific insights to planned or ongoing horticulture-wide public education campaign on the acceptance of irradiated products in key export markets. If not ongoing provide support for plans of such campaigns, prioritising first Japan and the US, which address: • Misinformation on irradiated horticulture products • Lack of understanding of irradiation as safe technology • High quality preservation irradiation enable for imported products Provide support for campaign developers to work with Governments and in-market industry bodies to identify optimal communication channels for the campaigns, including potentially in-store installations, or e-commerce platforms.	< 12 months / ongoing	• AMIA • Hort Innovation **Export markets:** 
Contribute support for horticulture-wide communication campaigns as well as, where funding allows, invest in mango-specific initiatives. Work with retailers, importers and in-market professionals to target communications at select consumer groups in designated channels (suggested retail) to emphasise products' premium nature and justify pricing structures.	Use the consumer preference insights identified in the market prioritisation report to nominate target consumer groups and allocate planning and funding resources to respective programs, including likely first young, middle class consumer groups in Japan and China. Work with in-market industry bodies to develop and implement campaigns designed to encourage consumption via retail channels. Explore with in-market stakeholders whether communications will be best received via in-store, online advertising, print or other media. Irrespective of irradiation, these communications should emphasise sustainable production practices, the high-quality, premium nature of Australian mangoes and its ability to be consumed fresh, compared to mangoes in many export markets which are encouraged to be used primarily as ingredients.	< 12 months / ongoing	• AMIA • Hort Innovation **Export markets:** 

Relationships with in-market retailers will increase supply chain visibility and trust

Activities to support the development of in-market relationships have been identified and mapped across short, medium and long term time frames.

Medium term

Objective	Impact	Actions
Build relationships with retailers in market	Australian mangoes positioned for long-term success if/when expanded export opportunities materialise Increased trust and security in current/future export contracts Reduce risk exposure in-market Improved supply chain visibility	1. Engage and establish relationships with premium retailers according to relevant city tiers in export markets 2. For markets where Australia does not currently have access, start to foster these partnerships ahead of formal market entry to enable industry to rapidly capitalise on new pathways as they become available. 3. In working with these retailers, promote the high-quality, safe and sustainable nature of Australian products to reflect above-average pricing 4. Work with retailers to identify relevant customer segments in market most willing to pay a premium of quality imported mangoes. This will inform relevant product marketing programs which can be developed together with retailers to promote Australian products in store or online.

Short Term <2 years	Medium term 2-4 years	Long Term 4+ years

Maintain market access and quality

Optimise supply chains

Expand market access

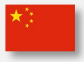
Enhance marketing and communications in-market

Build relationships with retailers

Support from Austrade or others should be used to facilitate contacts in markets

The table below outlines specific steps towards pursuing the establishment of relationships with retailers and other fruit-importing stakeholders in markets, provides an estimated timeframe for each activity for industry to work toward, and identifies relevant stakeholders for each action.

Building relationships with retailers

Action	Activities	Timeframe	Stakeholders
Engage and establish relationships with premium retailers according to relevant city tiers in export markets. Given the growth of the segment in markets analysed premium retailers should be prioritised, although establishing and maintaining relationships with importers, wholesalers and other distributors should be considered in parallel.	Use the market prioritisation report's insights on the premium retail sector and suggested organisations for engagement in each export market to plan for and establish partnerships. Draw on any cross-industry relations as well as Austrade to facilitate connections with in-market retailers as well as importers, wholesalers and distributors. This will likely be through trade shows and other in-person events where possible.	< 2 years	• AMIA • Australian Federal Government (Austrade) • Industry **Export markets:**   
For markets where Australia does not currently have access, start to foster these partnerships ahead of formal market entry to enable industry to rapidly capitalise on new pathways as they become available.	Draw on Austrade to initiate communications with retailers and other in-market supply chain stakeholders to lay the foundation for long-term partnerships when new access is granted.	2 – 4 years	• AMIA • Australian Federal Government (Austrade) **Export markets:** 
Promote the high-quality nature of Australian products to retailers to justify above-average pricing.	Where relevant, collaborate with retailers to leverage marketing materials (p.24) designed to promote the safe and sustainable nature and production of Australian products.	1 – 3 years / ongoing	• AMIA • Industry • International retailers **Export markets:** *All*
Work with retailers to identify relevant customer segments in market most willing to pay a premium of quality imported mangoes. This will inform relevant product communication programs.	Where possibly, request retailers' demographic data and existing customer segmentation research across various geographies to nominate target consumer groups for Australian mangoes in designated regions.	1 – 3 years / ongoing	• AMIA • Industry • International retailers **Export markets:** *All*

Diversified supply chains will enable access to untapped demand in export markets

Activities to support the optimisation of mango supply chains to key export markets have been identified and mapped across short, medium and long term time frames.

Long term

Objective	Impact	Actions
Optimise supply chains	Shorten lead times to preserve product quality Reduce input costs and increase competitiveness Drive consistency and sale in production to meet demands of importers	1. Look to reduce lead times by exploring potential to consolidate exports at various supply chain touchpoints, including transport, processing/treatment, distribution and shipment. This would drive the scale demanded by key importers, particularly in markets like the Netherlands and USA. 2. Invest in research and development in new and innovative means to increase product shelf-life pre and post-farm gate, in order to unlock alternative supply chain options and further preserve product quality. 3. Where possible, partner with other industries or cross-supply chain participants to align on R&D focused on improving product consistency pre and post farm-gate, to satisfy the requirements of large scale importers. This would include investigating process optimisation to increase scale and consistency of production, a key driver in building the case for expanded market access.

Short Term
<2 years

Medium term
2-4 years

Long Term
4+ years

Maintain market access and quality

Optimise supply chains

Expand market access

Enhance marketing and communications in-market

Build relationships with retailers

R&D and industry input will strengthen supply chain resilience and expand options

The following table outlines specific steps towards pursuing each export development opportunity, provide an estimated timeframe for each activity for the industry to work toward, and identify the relevant stakeholders for each action.

Optimising supply chains

Action	Activities	Timeframe	Stakeholders
Look to reduce lead times by exploring the potential to consolidate exports at various supply chain touchpoints. This would drive the scale demanded by key importers, particularly in markets like the Netherlands and the USA.	Conduct detailed analysis of the supply chains in each market to understand the touchpoints proving to be challenging or most expensive, including transport, processing/ treatment, distribution and shipment and identify areas to consolidate.	2 – 4 years	• AMIA • Hort Innovation • Industry • In-market key supply chain stakeholders
	Collaboratively develop a collective industry plan to understand and address the operational considerations involved with consolidating exports post farm-gate.		**Export markets:** *All*
Leverage the outcomes of ongoing research and development in new and innovative means to increase product shelf-life pre and post-farm gate, in order to unlock alternative supply chain options and further preserve product quality.	Hort Innovation to explore investment opportunities or existing research in on-farm technologies designed to increase shelf-life. This may also include consideration of exporting second-grade products such as green mangoes with longer shelf-life and potential for sea freight pathways.	< 4 years	• AMIA • Hort Innovation • Industry • Cross-industry supply chain experts
	Leverage outcomes of ongoing study into innovative ways to increase product consistency, consider trialling options identified in findings in ongoing exports over next 2-3 years.		**Export markets:** *All*
Invest in research and development to improve product consistency pre and post farm-gate, to satisfy the requirements of large scale importers.	Explore opportunities to partner with other industries or cross-supply chain participants to align on product consistency-focused R&D.	< 4 years	• Hort Innovation • AMIA • Industry
	Conduct a review of pre and post-harvest practices with leading Australian exporters/growers to more closely identify production pain points causing inconsistency.		**Export markets:** *All*
	Hort Innovation to consider commissioning a study into new and innovative technologies that will improve mango quality consistency.		

Metrics have been suggested to monitor performance against these objectives

In order for industry to work toward the objectives of this strategy and execute activities in a logical, systematic way, consistent monitoring of the recommend activities will be required. Industry will need to be represented in the implementation of any metrics so that if any support, for example inputs for market access business cases, is required, industry members are ready and willing to respond accordingly.

As such, the following considerations have been recommended as means by which progress against export objectives can be tracked, if not already in place:

1. Maintain and establish ongoing operating rhythm with Project Reference Group to meet with Hort Innovation and other nominated stakeholders at regular intervals to update on progress, identify actions required of industry and make any necessary changes to approach.

2. Hort Innovation to establish regular touchpoints with DAWE and DFAT representatives for consistent updates on market access applications or the progress of FTA negotiations.

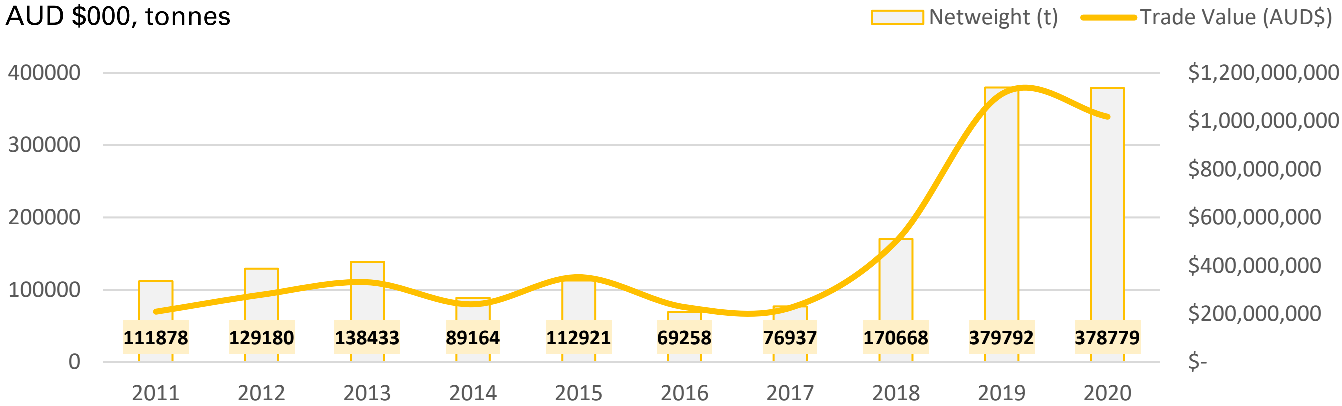
3. AMIA to establish regular touchpoints with industry members to update them on the progress of activities and request any supporting material.

Appendix 1. Priority markets for export development

Market profile and opportunities for export growth in China

Despite China being Australia's leading trade partner across all goods and services, Australian mangoes amount to only 1.2 per cent of all Chinese mango imports for 2020.[1] However, since 2018 Australian mango exports to China have risen substantially, resulting in a ten year CAGR of 26 per cent between 2011 and 2020.[1,2]

China mango imports by year[1]
FY2010 - 2020
AUD $000, tonnes



Mango preferences vary by city though consumers from the North prefer mangoes that are large and red, as oppose to smaller yellow mangoes in the South. Rising incomes and improved standard of living in Tier 2 and 3 cities are driving demand for imported mangoes as consumers seek high-quality fruit with credentials relating to food health, safety and sustainability.

E-commerce penetration is estimated to reach 11 per cent by the end of 2022 with a 7 per cent growth rate while traditional grocery stores are the dominant sales channel with 60 per cent of fresh food sales.[3,4] There is an opportunity to expand operations through an omni-channel approach to scale at rapid pace to complement the core opportunities detailed below.

Source: *(1) UN Comtrade Database (2) KPMG Analysis (3) Macquarie Research, Digitalising the distribution of fresh produce in China (4) iResearch, 2021 China's Fresh Food E-Commerce Industry Report*

Core opportunities to drive export growth in China:

Develop networks and channels to Tier 2 and 3 cities

Target importers and retailers with a presence across multiple city tiers, allowing for a staged approach to growing exports across different populations.

Bolster marketing efforts to consumers during peak Australian seasonality

Improve marketing to develop more of a presence during Chinese New Year, have a more targeted approach across cities and to communicate the high food health and safety standards that Australia adheres to.

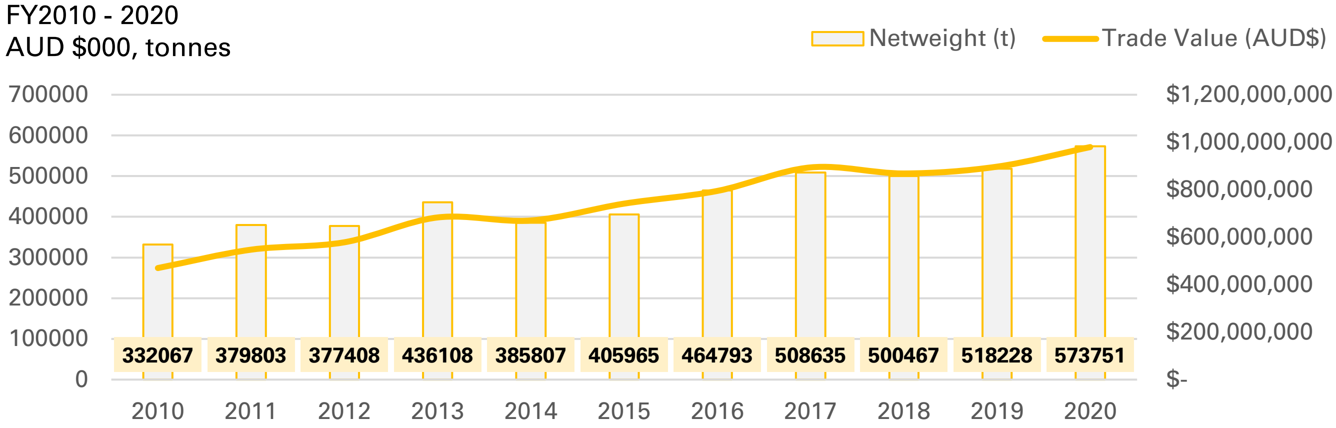
Form local partnerships to absorb second-grade supply

Industry has expressed the key concern with exporting is the risk of a portion of the supply being rejected. Partnerships with businesses who don't require premium quality can help to absorb supply and reduce the risk of fruit not being sold at all.

Market profile and opportunities for export growth in the USA

Exports of Australian mangoes begun in 2015 and have since seen two considerable spikes. In 2016 the peak of AUD $999,745 was reached (494% YoY increase) and recently in 2020 AUD $759,092 in trade value was achieved (126% YoY rise) to result in a 29% CAGR over the 6 year period between 2015 and 2020.[1,2]

US mango imports by year[1]
FY2010 - 2020
AUD $000, tonnes



The US market imports from both southern and northern hemisphere markets to have year round supply and drive consumer interest in fresh mangoes. In the US mangoes are typically sourced from Mexico, being the largest mango exporter to US market with 54% import share given close geographic proximity.[1] The most common varieties include Ataulfo, Francis, Haden and Keitt, and are largely purchased based on ripeness, price and overall quality.[3]

Based on industry consultation, one of the primary challenges when exporting mangoes to the US is the impact of logistics on fruit quality. It's estimated 22% of Australian mangoes failed to meet importer specifications and can take between 8 and 22 days from packing to land.[4] Failure to address supply chain challenges results in damaged relationships with retailers, reduced profitability due to poor quality and thus a greater risk as oppose to supplying the domestic mango market.

Source: (1) UN Comtrade Database (2) KPMG Analysis (3) Fresh Plaza, Mango Consumption has almost doubled in 12 years (4) International Tucson, Follow that mango: the journey produce takes from Mexico field to a U.S. kitchen

Core opportunities to drive export growth in the USA:

Optimise supply chain processes to ensure consistent quality

Australia can't compete with South America on supply chain duration, so it is critical Australian mangoes are of the highest possible quality upon arrival.

Partner with leading e-commerce providers

Leverage the vast distribution networks and strong customer bases of existing e-commerce players. Their websites offer an avenue for consumers to comment on fruit quality, taste and appearance.

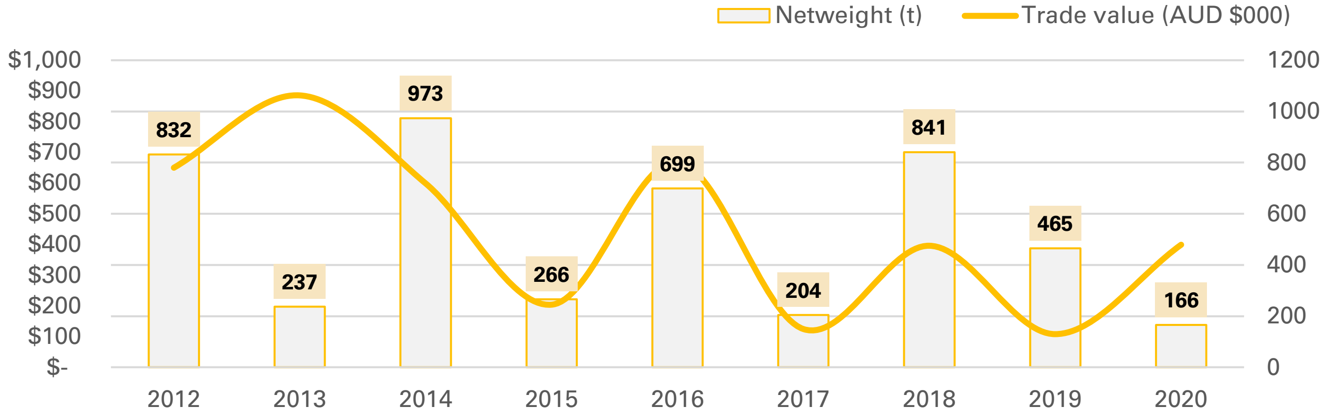
Increase the varietal range supplied to the USA

Australia has counter seasonality to Mexico though similar seasonality to Peru and Ecuador. However, the majority of their supply is of the same variety, creating an opportunity to introduce Australian varieties throughout the USA.

Market profile and opportunities for export growth in India

Australia has not yet exported mangoes to India, however new bilateral trade arrangements are a positive sign for future exports. While Australian exports will not compete with domestic production due to alternative seasonality, quality and varieties, strong existing demand for mangoes in India is a positive indictor of future Australian exports.

Indian mango imports by year[1]
FY2012 - 2020
AUD $000, tonnes



The majority of Indian mango imports are sourced during the October-December seasonal gap from low input costs such as Malawi, although evidence of high income earning consumer groups willing to pay premium prices when supply falls indicates an opportunity for Australian exporters to compete in untapped segments outside current import market periods. Unique, high-quality varieties of mangoes such as Alphonso and Ratnagiri which are not dissimilar to some Australian varieties can sell at around AUD $28 – $37 per dozen, a strong indication of purchasing power and quality expectations in some consumer segments.

Indian consumers' preference for mangoes typically includes products of medium-large size, sweet and juicy in flavour, green or yellow colour, and there is utility in either fresh consumption or processing in smoothies, juices, or other cooking.

Source: (1) UN Comtrade Database / KPMG Analysis (2) The Economic Times, India to begin mango imports from Malawi this week (3) Outlook India, Shocking Mango Prices! Devgad Alphonso Being Sold At Rs 18K A Dozen

Core opportunities to drive export growth in India:

New market access via irradiation pathways

Continue to pursue market access pathways in irradiation, with in-transit cold treatment as an alternative option.

Build relationships with retailers in Tier 1 cities

Leverage the vast distribution networks and strong customer bases of existing e-commerce players. Their websites offer an avenue for consumers to comment on fruit quality, taste and appearance.

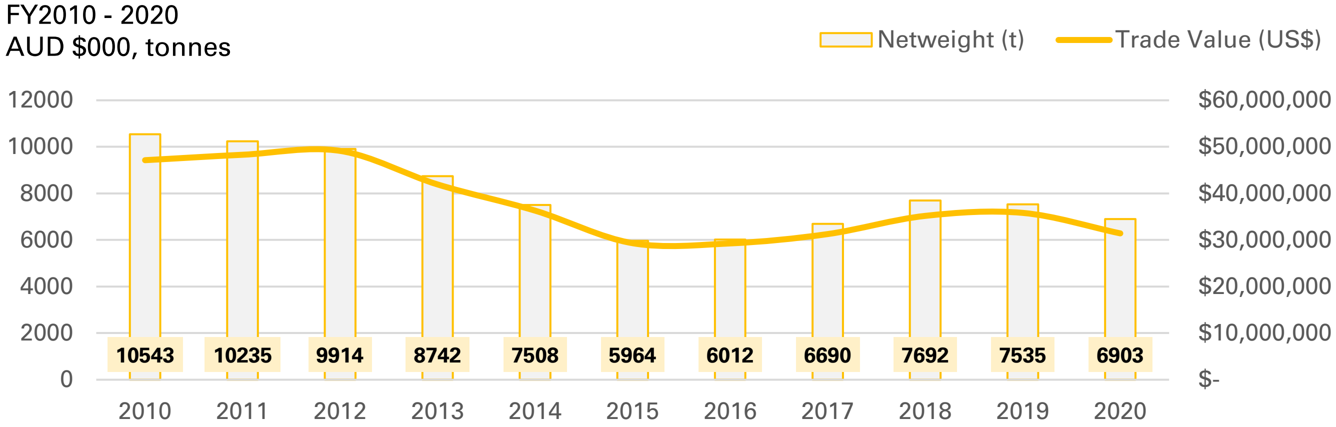
Target in-market communications during India's mango off-season

These communications should focus on the high quality, premium nature of Australian mangoes compared to that of other major exporters who are capitalising on this seasonal supply gap.

Market profile and opportunities for export growth in Japan

Japan has experienced a steady decline in mango imports over the last decade with a -4% CAGR between 2010 and 2020.[1] Similarly, Australian mango exports to Japan have fallen substantially over the same time period with only 22 tonnes shipped in 2020 accounting for only 0.2 per cent of Japanese mango imports.[1] However, Japan represents a meaningful growth opportunity due to the cultural importance of mangoes, affluent population and the potential for improved market access in future.

Japan mango imports by year[1]
FY2010 - 2020
AUD $000, tonnes



The Japanese consumer is known to be attentive to the quality attributes of the mangoes they purchase, with high expectations on appearance, horticultural practices, the taste and size. Mangoes are considered a luxury fruit due to the cultural importance of giving mangoes as gifts, and as a result long-term demand for imports of premium quality is expected to continue.

The requirement for Australian mangoes to undertake VHT treatment is the primary constraint to export growth and with an unfavourable public perception of irradiation, government collaboration is required to further expand market access pathways into Japan.[2]

There is meaningful opportunity to tap into Japan's well developed e-commerce market with AUD $27 billion in online grocery trading volume in 2020 and a 6% CAGR expected between 2021 and 2025.[3]

Source: *(1) UN Comtrade Database (2) KPMG Analysis and industry consultation (3)* Global Data, Japan e-commerce market to grow by 10.5% in 2021

Core opportunities to drive export growth in Japan:

Improve omni-channel presence to communicate Australian health & safety

Work with retailers and e-commerce players in Japan to communicate the health benefits of mangoes and in particular Australia's global reputation for strict on-farm sustainability and food safety standards.

Explore distribution opportunities in un-tapped channels

Exporters may see success entering the food service sector, supply of non-first grade fruit can be absorbed by organisations requiring food service.

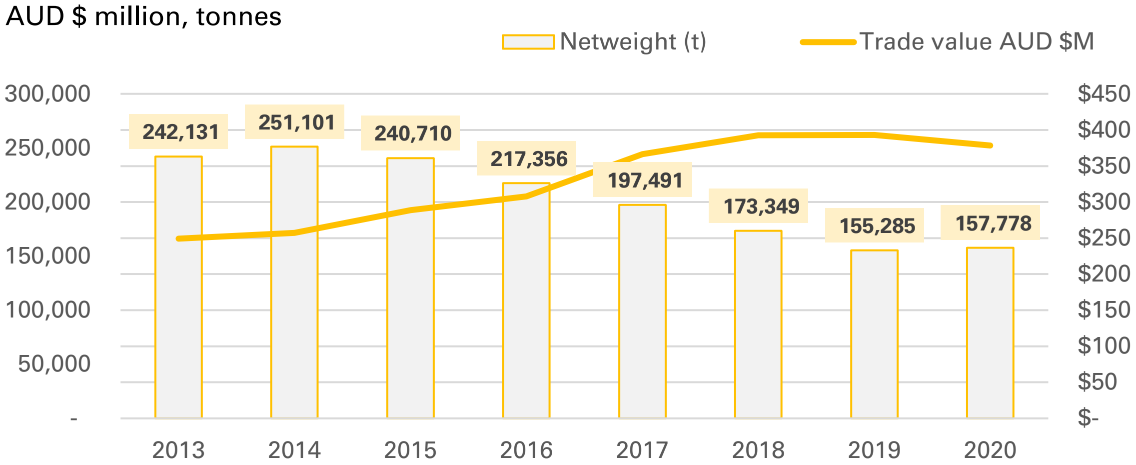
Deliver a marketing campaign to capture demand from Japan's gift giving tradition.

There is a opportunity for exporters to capture demand from annual events of cultural importance. Australian mangoes suit the quality expectations necessary for mangoes to command a price premium and be given as gifts.

Market profile and opportunities for export growth in the Netherlands

Australia has previously exported Kensington Pride mango varieties to the Netherlands over the past decade. Given the market accounts for around 33% of the EU's mango imports, the Netherlands presents viable future re-export opportunities to EU member states, particularly France, Spain and Germany which have shown significant demand in recent years.

Netherlands mango imports by year[1]
FY2013 - 2020
AUD $ million, tonnes



Given the flooded nature of the Netherlands as well as broader EU market, mango imports see a relatively low average price point, sitting at around AUD $0.76 per kilogram received for imports from Brazil in 2020, and $0.67 for Peru according to the UN Comtrade database. However, consumer end-prices identified in a scan of mangoes for sale on Dutch e-commerce platforms were more aligned with average Australian pricing (around AUD $3-4 per mango).

Dutch and broader EU consumers are known to prioritise sustainability, quality and convenience in their purchases of mangoes, expecting high-quality while also indicating potential opportunity in value-adding products such as pre-cut, dried or powder.

Source: (1) UN Comtrade Data / KPMG Analysis (2) CBI Ministry of Foreign Affairs, *The European market potential for mangoes* (3) Global Trade Mag, *Spain and France Emerged as the Most Promising Markets for European Mango Importers*

Core opportunities to drive export growth in the Netherlands:

Support current or future negotiations for irradiation pathways at a member-state level.

Where possible access a wide re-export network by targeting negotiations toward Spain, France and Germany* who show the largest demand for imported mangoes.

Consider consolidating exports to drive critical mass required by Netherlands import and re-export supply chains.

Identify means to internally and externally consolidate exports at various supply chain touchpoints to drive input costs down and support secure, long-term contracts.

Continually monitor EU and target member-state evolving MRL frameworks
Ease compliance with EU regulations and reduce complexity as new pathways to the EU based on changing regulations become available

Bangladesh and Vietnam also present long term export opportunities for mangoes

While Bangladesh and Vietnam below were not selected as priority markets for focus in the core strategy, they were raised as potential export opportunities by industry as well as in conversations with the Department of Agriculture, Water and the Environment.

A number of high-level, long term opportunities have been identified below which are recommended to be pursued separate to the timeline presented on page 15.

Bangladesh: Market insights

1. Flagged by DAWE as a potential opportunity due to growing population size and counter-seasonality advantages for Australian exporters
2. E-commerce has seen a strong uplift during the pandemic, particularly in online grocery shopping. One of Bangladesh's biggest online retailers, Chaldal, saw daily orders increase by 140% within the first six months of the pandemic.[1]
3. Similar to India, the private sector is building out more reliable cold chain infrastructure in certain subsectors, with meat and potatoes seeing significant private investment.[2] While not directly related to mangoes, this is a promising sign for other fruit and vegetable sectors.

Bangladesh: Export opportunities

1. Advocate for in-transit cold treatment allowance given recent access granted to table grapes and citrus, to reduce input costs, preserve product quality and generate consumer interest.
2. Identify and target exports during seasonal gap to capitalise on large population size with growing demand.
3. Consider opportunities to export second grade products at scale by capitalising on the growing sophistication of e-commerce channels.

Vietnam has also been highlighted as a potential export opportunity despite a lack of current access the country's acceptance of irradiated imports is a positive sign for mango exporters. Australian mangoes are reported as already exported to Vietnam via grey trade channels indicating existing consumer interest and market entry pathways.

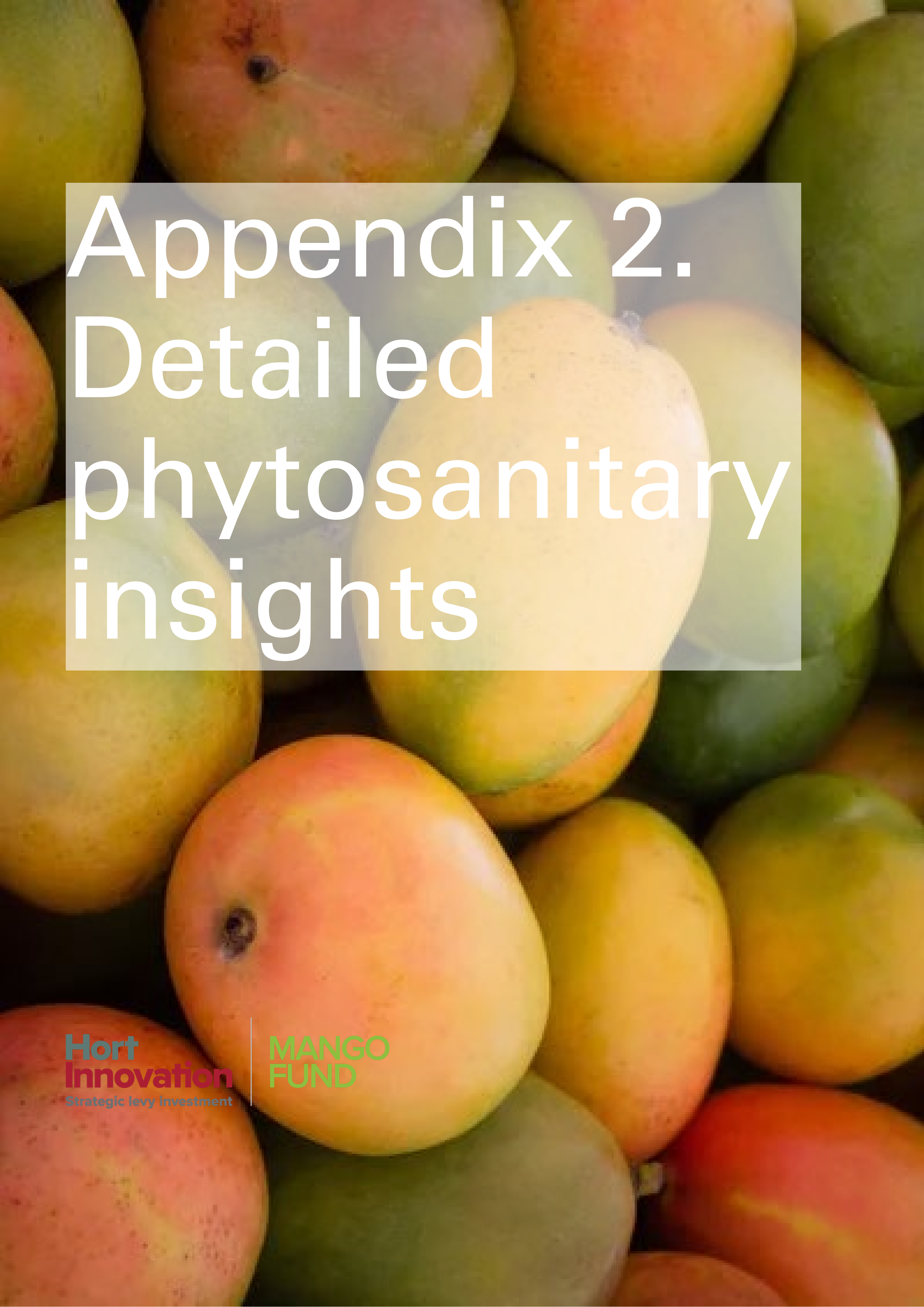
Vietnam: Market insights

1. Fruit is a traditional element in Vietnamese gift giving, with high-value fruits such as mangoes eliciting premium pricing and strong seasonal demand.
2. The Vietnamese food sector and premium retail in particular is rapidly growing with currently around 800 supermarkets and 150 shopping centres, many of which offer imported fruit and vegetable products. Total food sales are projected to increase at around 11.3% annually between 2017-2021.[3]

Vietnam: Export opportunities

1. Capitalise on market's acceptance of irradiation by leveraging the resources used for irradiation advocacy in other markets as part of full import risk assessment required to gain irradiation access. Prepare datasets on efficacy of irradiation treatment to contribute to market access negotiations, also addressing feedback on previously rejected applications to the Trade Advisory Panel.
2. Identify premium consumer segments in Tier 1 cities willing to pay a premium for imported mangoes.
3. In the long term, consider opportunities to re-export into China through Vietnam by slowly expanding presence in China, leveraging similar operational requirements with greater willingness to pay a premium.

Source (1) The Business Standard. 2020. *E-commerce outlets offering grocery see highest growth.* (2) WorldBank. 2021. *Promoting Agri-Food Sector Transformation in Bangladesh*. (3) Austrade, *Food and beverage in Vietnam*.



Appendix 2. Detailed phytosanitary insights

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Other markets are largely open, but have unique phytosanitary requirements

	Access (Open or Closed)[3]	Protocol (restricted access) Market?[3]	Phytosanitary Certificate Required?[3]	Import Permit Required?[3]	Free Trade Agreement and Tariffs[1,4]	Fumigation[3]	Cold[2]	Irradiation[3]	Heat (VHT)[3]
UK	Open	No	No	No	No	*Not a protocol market*			
Canada	Open	No	Yes	No	Yes CPTPP – 0% Tariff	*Not a protocol market*			
Vietnam	Closed	No	No	No	No	*Not a protocol market*			
Indonesia	Open	Protocol	Yes	No	Yes IACEPA – 20% Tariff AANZFTA – 25% Tariff	64 grm/m3 at 21 degrees celsius for 2 hours	≤ 2 degrees celsius for 16 days or ≤ 3 degrees celsius for 20 days	150 gy minimum	46 degrees celsius for 30min
UAE	Open	No	Yes	No	No	*Not a protocol market*			
Malaysia	Open	No	Yes	Yes	Yes MAFTA – 0% Tariff	*Not a protocol market*			
South Korea	Open	Protocol	Yes	No	Yes RCEP – U KAFTA – 3% (0% - 01/01/23)	No	No	No	47 degrees celsius for 15min
Hong Kong	Open	No	No	No	Yes RCEP, CPTPP – 0% Tariff	*Not a protocol market*			
Singapore	Open	No	No	No	Yes AHKFTA – 0% Tariff	*Not a protocol market*			
New Zealand	Open	Protocol	Yes	No	Yes RCEP, CPTPP, PACER< AANZFTA, ANZCERTA – 0% Tariff	No	No	289 gy / 400 gy / 500 gy	No
Saudi Arabia	Open	No	Yes	No	No	*Not a protocol market*			

Note: (1) All FTAs are in relation to mangoes (2) Fruit intended for in-transit cold treatment must be pre-cooled to, or below, the target treatment temperature before loading
Source: (3) Australian Government Department of Agriculture, Water and the Environment, *Manual of Importing Country Requirements;* (4) DFAT, *FTA Portal*

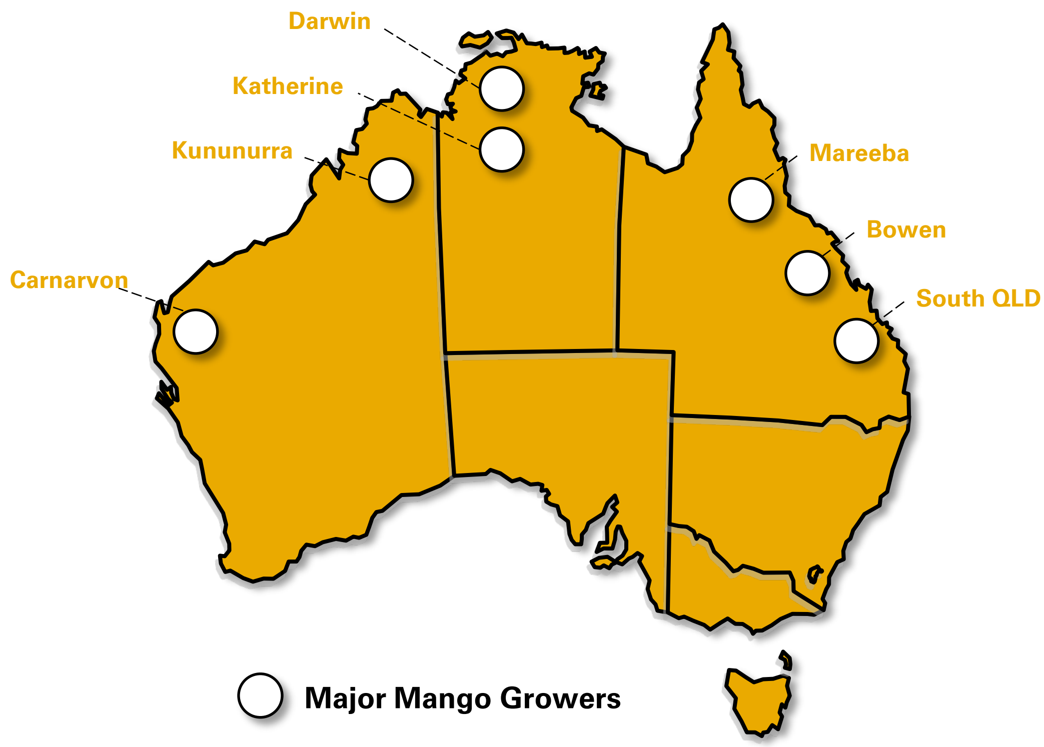
Approved horticulture export treatment facilities are primarily in Victoria

With 51% of production in the Northern Territory and 45% from Queensland, mango growers should consider the location of export treatment facilities when following the phytosanitary requirements of different markets. The transport between growing location and the treatment facility is a key variable in supply chain efficiency.

Approved Australian Horticulture Export Protocol Treatment Facilities[1]

		Treatment			
		Onshore Cold Treatment	Methyl Bromide Fumigation	Irradiation	Vapour Heat Treatment (VHT)[3]
Number of Facilities	VIC	15	11	1	0
	NSW	2	4	0	0
	QLD	1	4	1	4
	WA	1	2	0	0
	NT	0	0	0	1

National Locations of Major Mango Growers[2]



Source: (1) Australian Government Department of Agriculture, Water and the Environment, *Approved Australian horticulture export protocol treatment facilities list*; (2) Hort Innovation, *Australian Horticulture Statistics Handbook 2019/20*; (3) Department of Agriculture and Fisheries, *Rules of thumb for export mango supply chains*

Disclaimer

This report forms part of Project MG21000 – Mango Export Strategy. The overall project is seeking to establish the new industry export strategy that will guide the Australian Mango industry on the ambitions for export growth in the coming years, and the market/activities that are available to achieve this.

This report has been created for Hort Innovation's internal use to guide Hort Innovation on how to support the industry to achieve the objectives and activities outlined in the export strategy document. These recommendations are based upon insights gathered from the following sources:

- Publicly available data (desktop analysis)
- Stakeholder consultation (growers, a Project Reference Group, and value chain stakeholder perspectives)

A set methodology has been followed to achieve the intended outcomes in the strategy including selection of markets for investigation, research approach and prioritisation of markets.

International trade is an inherently risky operation given the exposure to geopolitical, logistics, customs, labour and climatic variables. The information provided in this report is current as of April 2022. Information has not been independently verified or cross-checked for accuracy. Reliance should not be placed upon data provided in this report, and individuals/organisations are accountable for any decisions made using the information provided.

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