Identify the export potential for Sweetpotatoes into ASEAN markets

Agri-Science Queensland Innovation Opportunity

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This publication has been compiled by Andrew Mead, Leath Stewart, Noel Ainsworth of ASQ and Regions, DAF.

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Summary

A review of two sweetpotato grower supply chains in Queensland (Esk and Bundaberg) was undertaken to identify impediments and opportunities for the export of Australian sweetpotatoes.

The five highest scoring key words from the analysis of interview data included: export, varieties, price, quality and supply.

A review of the comments surrounding the highest scoring key words identified broad groupings of issues (Themes) which would constitute impediments to export. These include: Understanding markets and consumers, Information sharing in the chain, Doing business in markets and managing risk, Uncertainty around new varieties, Price Volatility, Variable product quality and grade specifications, Supply inconsistencies, Nematodes, Packaging.

Australia has competition in Asian and world markets from USA, Japan, Indonesia, Malaysia, China and Vietnam. Although Australia has capacity to compete with Gold types market feedback identified impediments with supply and pricing around varieties other than Gold.

Australian grown sweetpotatoes have market access into the open markets of Singapore, Hong Kong, Malaysia and Indonesia and the protocol markets of UAE, Thailand, Vietnam and the Philippines.

In-market research observations of Australian product was undertaken in the UAE and Singapore markets. Australian Gold sweetpotatoes were favourably received on these markets and they were price competitive against other suppliers.

Major impediments to export were identified around market access. Australian sweetpotatoes are denied access to China, Japan, Taiwan, Korea, Taiwan and India. The issues include quarantine barriers for, sweetpotato weevil, seed weevil, nematodes and Trade Restrictions through FTA’s.

The world trade in sweetpotatoes is increasing year on year with trade in 2015 worth over $500M and trade into the UAE and Asean countries for which Australia has market access exceeded $30m. Australian sweetpotato exports totalled only $1.2M during the same period. There are strong indicators for future growth in market share for Australian sweetpotatoes into the ASEAN Region and the UAE.

The information collated during this study will be discussed with the sweetpotato industry later in 2016 and a priority plan will be developed to guide future investment in RD&E activities around quantification and overcoming impediments to export, and realising market opportunities identified in this study.

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Background

The Australian sweetpotato industry is in a growth phase with major production centres in the Bundaberg area in Queensland and Cudgen in northern NSW. Smaller production areas are located in Mareeba, Rockhampton, Esk, Lockyer Valley and Western Australia.

The value of fresh sweetpotatoes sales at a farm gate level is estimated at $95m with greater than 100,000 tonnes of product being sold on the wholesale markets[1].

In the 2015/16 year sweetpotato supply onto the domestic market exceeded demand with periods where the wholesale price for sweetpotatoes received at the markets was less than the cost of production.

This project was initiated by local sweetpotato growers in the Bundaberg region who were looking for opportunities to take the pressure off the domestic fresh fruit market and to identify other profitable market opportunities for their products.

The project brief was developed for the DAF sponsored innovation program following these discussions and was supported by the DAF management team.

The project was discussed in some detail with members of the Sweetpotato Advisory Group who supported the concept that was prepared.

The Australian Sweetpotato Growers Inc. (ASPG) invited members of the DAF project team to present the project at the annual general meeting of the ASPG in Bundaberg in 2015. At this meeting a brief precis of the project was presented along with an initial export market desktop study for sweetpotato exports from Australia.

There was strong support for the proposed project and two key growers volunteered for the project team to undertake a review of their supply chains from production through to market.

Project Objectives

- Identify impediments for the export of sweetpotatoes within two grower supply chains.
- Broadly review existing sweetpotato export markets and market access for Australian sweetpotatoes into the Asean region and UAE.
- Identify market opportunities for Australian sweetpotatoes.
- Undertake in market observations of Australian sweetpotatoes in export markets (Replaces trial shipments as exports had commenced)

[1] http://www.aspg.com.au/sweet potato-industry/

Methodology

A draft supply chain diagram was developed for this project. This diagram identified the major components of the chain Appendix 1.

Interviews were conducted with 14 key stakeholders within two grower supply chains (Esk and Bundaberg).

A standard set of questions were asked of each of the respondents around issues and opportunities within components of the supply chain. Open discussion was encouraged during interviews and comments were recorded at the time of the interviews.

The information about the supply chain partners was mapped using Microsoft Visio which is flow chart and diagram software. Although the specific partners have been mapped for each supply chain, the generalised version will be used when the report is presented to ASPGA members and stakeholders.

Interview transcripts were entered into an excel data base for analysis. A list of key words was identified by the project team during the review of the interview transcripts. The interview data was analysed using this list. The number of occurrences of a keyword is counted as a surrogate measure of importance.

Comments that surround the key words were reviewed and this provided insight into issues and opportunities raised by stakeholders within the interviews.

A desktop study was undertaken of the dimensions of market access for Australian sweetpotatoes along with world trade in sweetpotatoes.

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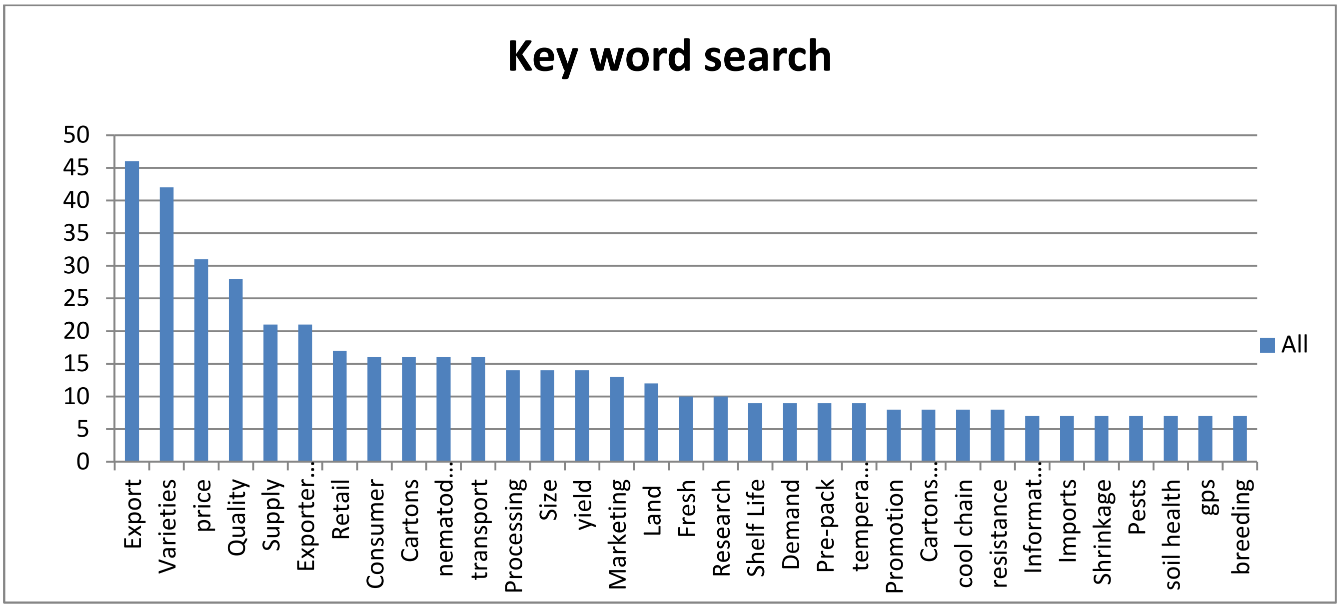
Results

A Impediments to export identified in sweetpotato chain interviews

A review of the comments captured during the interviews identified over 60 key words within the transcripts. A keyword analysis of the database captured over 600 comments around these key words. The highest scoring key words are presented in Figure 1.

Figure 1: Highest scoring key words



A review of the comments surrounding the highest scoring key words identified broad groupings of issues (Themes) which constitute impediments to export.

The following section describes impediments to export and lists key comments that support these descriptions.

1 Understanding markets and consumers

Although in recent times the industry has invested in studies around consumer and market research, there is a perception within the chain that the industry needs to do more in understanding consumers and markets. This lack of information and skills is seen as an impediment to export in particular around the selection of varieties, building brand awareness and promoting the benefits of consuming Australian sweetpotatoes.

- *understanding consumers, lack of information and skills around understanding consumers, consumer research, marketing and promotion strategies, market development activities both for domestic and export.*
- *Uncertain consumer preferences, marketing promotion, variabilities in taste, quality, uncertain market promotion activities, health benefits, nutritional benefits*

2 Information sharing in the chain

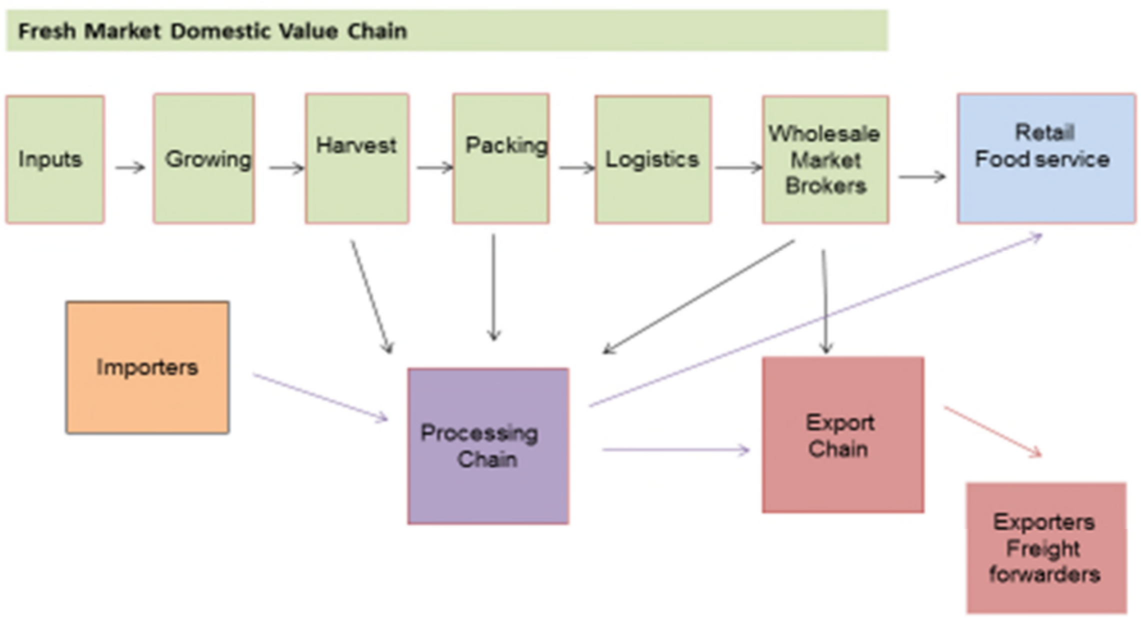
Although communication flows freely along the chain from grower to wholesaler there is a breakdown in communication and sharing of information between the various key market segments that purchase product from the wholesale market. This breakdown in communication is an impediment to export as the poor communication within the chain on things such as: outturn, forecasting, pricing and returns meant that opportunities for investment, improvement and market share are being missed.

- *In market assessments, forecasting of production and product supply, outturn assessments, consumer research, consumer focus groups, product shrinkage were important information that was not collected or disseminated to the chain members.*
- *Transactions take place and communication flows down the chain and back through the chain from grower packer to the wholesale point of sale. Information does not flow freely back down the chain from within the various market segments*.
- *Retailers don't share much information, planning, promotion, forecasting.*

The following diagram (Figure 221) outlines the major components of the domestic supply chain. The key for the following diagrams is:

Green = Domestic Market, Orange = Imports, Purple = Processing, Red = Export Chain, Blue = Market segment.

Figure 2: Fresh Market Domestic Supply



The fresh market domestic value chain is focussed on supplying a range of bulk and packaged fresh sweetpotatoes from the farm or packing shed to the major Australian wholesale markets. Although there are examples where producers are bypassing the domestic wholesale market within individual supply chains a majority of the product is supplied into the Sydney, Melbourne, Brisbane, Perth and Adelaide wholesale markets.

3 Doing business in markets and managing risk

Processes surrounding payment and non-payment within the domestic chain show there is a break down in the functioning of existing chains. There is uncertainty around doing business in existing markets and around the development of more efficient pathways to market. Uncertainty around risk management issues on the domestic market make doing business in export markets unattractive.

- *Getting paid, length of time for payment, managing risk. Members of the chain are in dispute with wholesalers around payment for product sold on the domestic market.*
- *Broker chain category managers not well developed as wholesalers have control over supply to processing, food service retail buyers; knock you out when sales are slow.*

4 Uncertainty around new varieties

A broad range of issues were identified around new varieties of sweetpotatoes. There is uncertainty around investment in new varieties, access to new varieties, supply capability, quality, productivity, pricing and returns for these varieties. In particular, inconsistencies in supply for varieties other than Gold, make it unattractive for exporters to source Australian product. Exporters currently source supply out of alternative competitor chains for varieties other than Gold.

- *Productivity issues, lack of confidence around Current varieties, uncertainty around building capacity, Chains were unable to consistently meet market demand and specifications on supply, size, shape, quality, shelf life and price on varieties other than Gold.*
- *Issues identified within the chain around access to new varieties, seed supply, lack of funding and support for breeding programs with long lead times for accessing and evaluating new varieties out of international breeding programs, Japan and USA not Australia, 5-10 year lead times for new varieties, uncertain consumer preferences in selection, different production systems, variable commercial trial programs.*
- *Productivity and supply of varieties other than Gold was inconsistent with gaps in production, issue with quality, yield was often 30% of Gold varieties with apparent lack of nematode resistant varieties.*
- *There were issues around variability in outturn and shelf life of sweetpotato varieties, product breakdown, uncertainty around post-harvest treatments, handling systems and cool chain requirements.*

- *Issues were raised around a lack of understanding of consumers. Chain members felt that consumer research, better understanding consumers, purchase behaviours, market research and how this understanding might be used to build sales and guide market promotion activities around new varieties and categories in all markets.*

5 Price volatility

Currently there is volatility in the price of sweetpotatoes on the domestic market with periods of low supply and high prices or high supply and low prices. This causes uncertainty for buyers within market segments that require forward planning around supply and pricing. Price volatility was seen as a major impediment to building export market growth.

- *There is volatility around pricing, supply and availability of varieties other than gold and in particular, Purple and Red fleshed varieties.*
- *There is a lack of information around the pricing and returns for sweetpotatoes in all market segments. There is a lack of transparency and information back down the chain on pricing and returns within market segments.*

6 Variable product quality and grade specifications

There were lengthy discussions around product quality issues, grade standards and pack-out variations in the same market. Variations in product grade specifications, product quality issues, e.g. taste and shelf life are impediments not only to growing domestic sales but in particular building brand reputation and confidence in export markets.

- *There is variability in the market between grower packer interpretations of grade specifications for sweetpotatoes. There are variations in product quality, size, shape, blemish, weight and over packing, carton size and weights.*
- *Variations in product shelf life, skin thickness, colour, taste were linked back to variations in nutrition, irrigation, growing days (short crop versus longer crop rotations) soil health and soil type.*
- *Issues around building brand, promotion, meeting consumer expectations were raised around variations in product quality.*
- *In-chain issues around packaging, monitoring and efficiencies within the cool chain are having impacts on product outturn, quality, and shelf life.*

7 Supply inconsistencies

Supplies of Australian Gold are available 12 months of the year however, for parts of the year supply is short. The volume of new Gold varieties is increasing however there are production and quality issues at times of the year with these new varieties. Supply of new varieties is erratic and this variability in the supply and quality of new varieties is an impediment to export.

- *Exporters seek supply of varieties other than Gold from competitor chains i.e. Vietnam as Australian producers are unable to supply issues with volumes, quality.*
- *New Gold varieties have issues with low production in production areas. Difficult to maintain 12 month supply.*
- *Maintaining soil health is important to maintaining supply and productivity, still issues around quantifying and benchmarking for soil health.*
- *Increases in demand are causing issues around the availability of suitable land for growing sweetpotatoes, competition from other crops and industries is increasing.*

8 Nematodes and pests

Nematodes and the issues surrounding nematodes were identified along the whole supply chain. Although the industry has made gains in sourcing nematode resistant varieties, the broader range of varieties have limited nematode resistance. Soil health and chemical control strategies are required to maintain productivity and ensure marketable yield is maintained. Nematodes have been identified as a quarantine barrier for entry to export markets and control programs increase the cost of production. Risks around the control of nematodes and market access are an impediment to export.

- *Pest and disease pressures have a direct impact on supply volumes and quality. Nematodes can have a big impact on quality and supply, uncertainty around chemical control programs for nematodes in particular are of concern to the whole chain.*
- *Market access.*
- *Availability of chemicals for control of nematodes.*

9 Packaging

- *Unfit for purpose, breakdown and collapse in transit, repacking common, variable size carton, over packing, cost, unable to mechanise),*
- *Specifications, cartons packaging, branding, cooling chain management, post-harvest treatments, automation, reduced handling*
- *Pallet integrity, cool chain management, handling, forecasting scheduling*

- *Cartons cost availability size, weight boxes, uneven stacking, density product, issues grading, automation, handling issues, standards, quality specifications, weight and packing specifications carton size, carton type*

10 Transport and cool chain logistics

(90% growers do not own cool rooms, mixed loads, variable outturns), information flows (communication issues around forecasting, quality, packaging, consumer information, market buyers).

Precooling before transport, Variable conditions results in variable outturn especially in mixed loads, monitoring of cool chains

Variable quality in wholesale market, variable specifications, shelf life and product robustness, breakdown, carton collapse, have to repack in markets, pallets configurations, packed height WH&S handling

Weight product, overloading, mixed loads, handling, pallet collapse, integrity pallets for loading trucks, pricing cost handling

B Market access review

Countries that Australia has open market access for fresh sweetpotatoes in the Asian region are Singapore, Indonesia, Malaysia and Hong Kong. Countries that accept Australian sweetpotatoes but have an import protocol in place include the UAE, Thailand, Vietnam and Philippines (Table 1).

The protocol markets require a phytosanitary certificate that certifies that product is free of soil, insect pests, and diseases and outlines treatment protocols.

Major ASEAN markets where Australian sweetpotatoes are prohibited include: China, Japan, Taiwan and Korea.

Tariffs and quotas are considered an impediment to export. The UAE and Indonesia have a 5% tariff; however no quotas were identified in this review other than for processed product into some markets and has been omitted from Table 1.

Table 1 Market access for Australian fresh sweetpotatoes

Country	Market Access	Phytosanitary requirement	Import permit	Tariffs %	Notes
Singapore		N	N	0	Free from soil etc.
Indonesia		N	N	5	
Malaysia		N	N	0	Free from soil etc.
Hong Kong		N	N	0	
UAE		Y	N	5	Springtail lookout
Thailand		Y	N	0	Free from soil etc.
Vietnam		Y	N		Free from soil etc.
Philippines		Y	Y		Free from soil etc.
China				0	Closed FTA
Japan		Y	N		Prohibited – sweetpotato weevil
Taiwan		Y	N	15	Underground fruit from NSW & QLD prohibited
Korea		Y	N		No MICor case, Nematodes?
India		N	N		Prohibited import

Open Market	
Protocol Market	
Closed Market	

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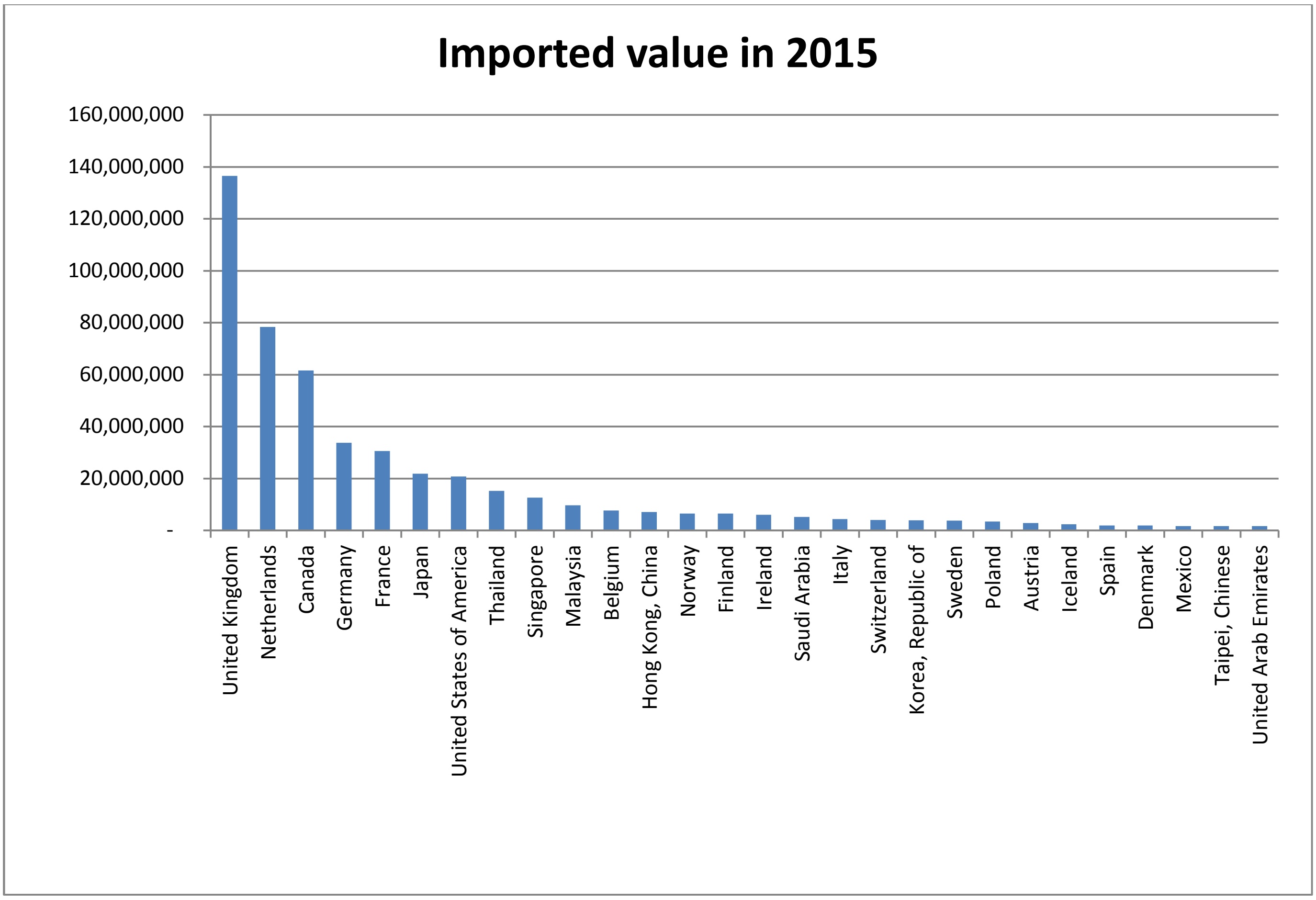
3 Export market opportunities for Australian sweetpotatoes

Market analysis for sweetpotatoes identified that world trade in sweetpotatoes is increasing. The world trade (Imports by country) in sweetpotatoes was valued at $510m in 2015 with 67 countries importing greater than $100,000 of sweetpotatoes. Australia had zero exports into the top seven sweetpotato importing countries of the world which accounted for $383m in sales.

Singapore, Malaysia, Hong Kong and the UAE imported collectively $31m of sweetpotatoes in 2015 and Thailand imported $15m alone during the same year Figure 3.

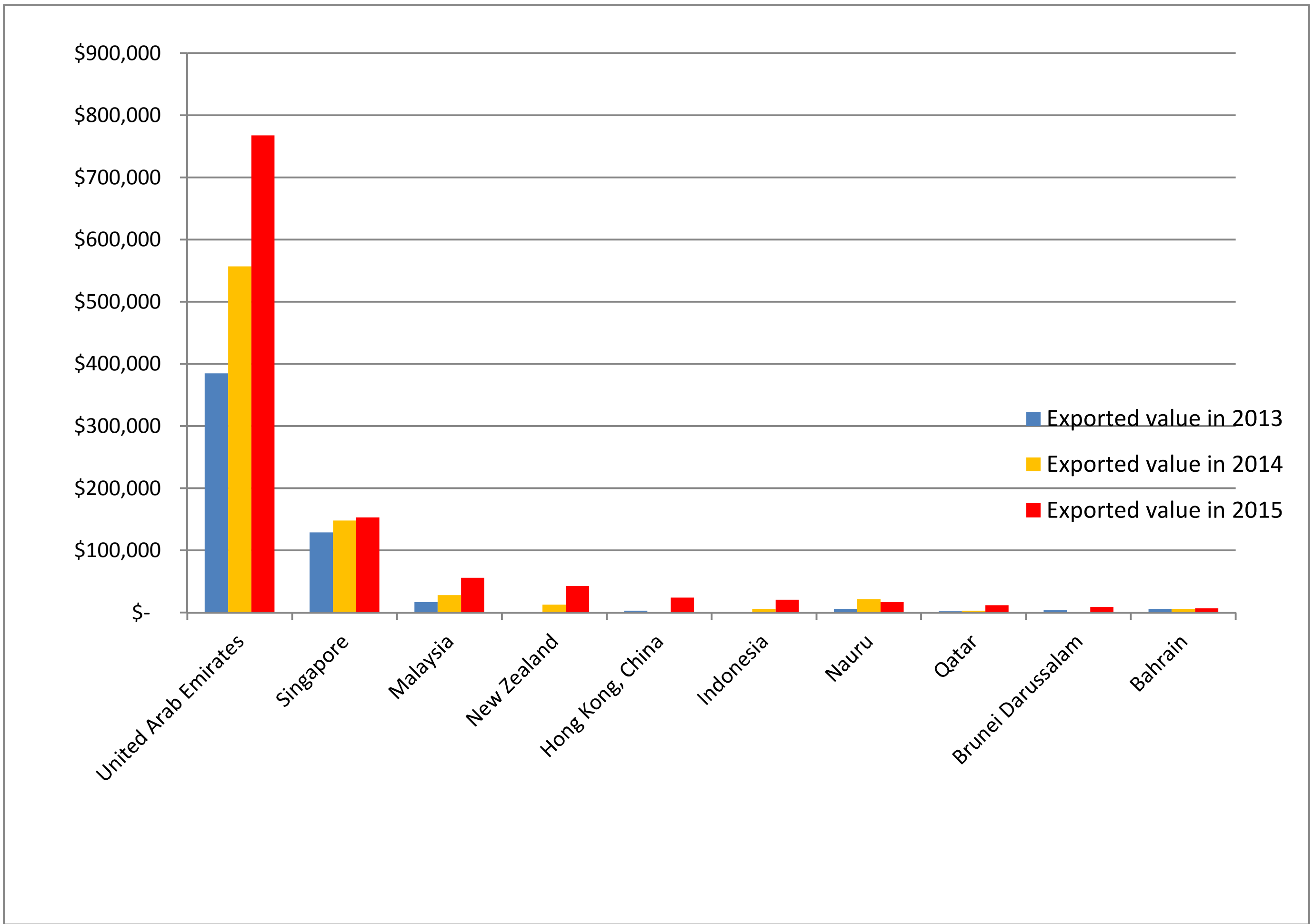
Figure 3: World trade by country sweetpotatoes over $100,000k



In-market review of sweetpotatoes in Singapore identified a price premium for Japanese Purple against the Australian Gold, with Red and Purple skinned and white fleshed varieties available for sale on the same market.

Australia exported $1.02m of sweetpotatoes into ten countries during 2015 with only two of these countries importing greater than $100,000 from Australia. The UAE accounted for $768,000 of the total exports from Australia Figure 4, Appendix 2. There were no recorded exports from Australia to Thailand.

Figure 4: Sweetpotato Exports from Australia MAF MICor data



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4 In-market research – UAE and Singapore

Australian sweetpotatoes have a presence in the UAE and Singapore markets. Given that product was already being shipped to these markets the trial shipments component of this project was replaced by in-market research.

Australian sweetpotato had a regular presence as the main golden type stocked in supermarkets in Dubai (UAE)[2] and Singapore[3]. (Appendix 3). Product was available as loose bulk or more commonly pre-packs.

A price comparison was undertaken on a range of product available on the Singapore market from Australia (Gold), Malaysian purple, Japanese purple, Taiwanese purple, local and Indonesian honey, red and purple varieties. Australian Gold was price competitive in this market however Japanese purple was selling at three times the Australian Gold price on the same market.

It was noted that the retail price was approximately 300-400% the landed price of sweetpotatoes into the Singapore market.

[2] Clinton McGrath, DAF, May 2016
[3] Noel Ainsworth, DAF, May 2016

Conclusions/Significance/Recommendations

The sweetpotato industry is in a growth phase with new entrants and investment into the industry. At times of the year supply exceeds demand and prices can be less than the cost of production. The market at these times is heavily contested.

A broad range of issues were recorded within the review of two sweetpotato supply chains. Groupings of these issues (Themes) and the analysis of comments around these themes identified key impediments to export.

Desktop studies undertaken during this review identified that world trade in sweetpotatoes was worth over $500m in 2015 and is increasing year on year. Trade in the ASEAN markets and the UAE, where Australia has market access was over $30m in 2015 while total exports from Australia were only $1.2m during the same period.

Although the trade in the ASEAN region is heavily contested by ASEAN suppliers and the USA in-market research identified that Australian product on the market in Singapore and UAE during this study was price competitive. The main supply from Australia is the Gold type however imported varieties from competitor chains on the same market in Singapore were selling at three times the Gold price.

A review of market access in ASEAN markets revealed that Australia has a very low market share into open and protocol markets in the ASEAN region which include: Singapore, Indonesia, Malaysia, Hong Kong, Thailand, Vietnam, Philippines. Australia has a strong presence and market share in the UAE.

Australia does not have access to the following markets; China, Japan, Taiwan and Korea.

This study has identified a broad number of issues that have been identified as impediments to export including market access impediments, plus it has identified market opportunities in the ASEAN region.

A two stage process is recommended to qualify the impediments to export identified in this study and to develop a strategic RD&E plan around future investment in activities that may be identified to overcome issues or realise opportunities.

Stage 1 Convene a panel of sweetpotato RD&E experts to review and qualify the findings of this study.

Stage 2 Present the findings of the review to the SPGA in an open forum.

Key Messages

Investment by the industry and Government may be required to further qualify and prioritise key impediments to export identified within this study and to develop an RD&E plan to overcome priority issues.

There are issues around communication and information sharing within the chain. Not all sweetpotato growers are members of ASPGA and information sharing between market segments within the chain is poor. The development of projects that have broader chain outcomes may provide opportunities to further improve communication within the chains.

There are opportunities for increasing the value of sweeptpotato exports into markets in the ASEAN region and the UAE that Australia has access. Current market share is low for Australian exports into these markets and sweetpotato imports is increasing year on year into these markets. Investment by SPGA in the development of a Strategic Export Plan could guide future investment in market development strategies and market access strategies for closed markets.

Where to next

Planning has commenced with industry and key government stakeholders to hold a sweetpotato supply chain forum in early December 2016 in Bundaberg.

Funding to host this event has been secured through the Federal Department of Industry with keynote speakers to be funded through Federal Supply Chain programmes.

The program for this event is in the development phase however the forum will be co-ordinated by DAF.

It is proposed that the findings from this study will be discussed with industry at this event and that a priority plan will be developed following this event in consultation with industry to guide future investment in RD&E activities around overcoming identified impediments to export and realising export market opportunities.

Budget Summary

Budget Review

Date	Item	Amount	Who/What	Notes
Nov 2015	Travel- allowances	$226.20	A Mead, L Stewart	Supply Chain Interviews
Dec 2015	Travel- allowances	$309.90	A Mead, L Stewart	Supply Chain Interviews
Jan 2016	Travel- allowances	$659.70	A Mead, L Stewart	Supply Chain Interviews
Feb 2016	Travel- allowances	$825.65	A Mead, L Stewart	Supply Chain Interviews
April 2016	Travel- allowances	$1338.20	A Mead, L Stewart, N Ainsworth	Supply Chain Interviews
April 2016	Travel- airfares	$793.36	A Mead, L Stewart	Supply Chain Interviews
April 2016	Car hire	$170.66	A Mead	Supply Chain Interviews
June 2016	Stationery	$15.20	A Mead	Supply Chain Interviews
	Total	$4,388.87		

Acknowledgements

The data and information was provided by a number of sources in addition to the project team. Craig Henderson of Henderson RDE was very helpful in guiding the project team to existing project reports and useful websites.

Desktop market data information was provided by a number of sources in addition to the project team. These sources were from Australian and Queensland government agencies and are acknowledged where the data is presented. Examples of data sources are Manual of importing country requirements (MICoR), operated by International Trade Centre Comtrade, and Trade map 2016, http://micor.agriculture.gov.au/plants.

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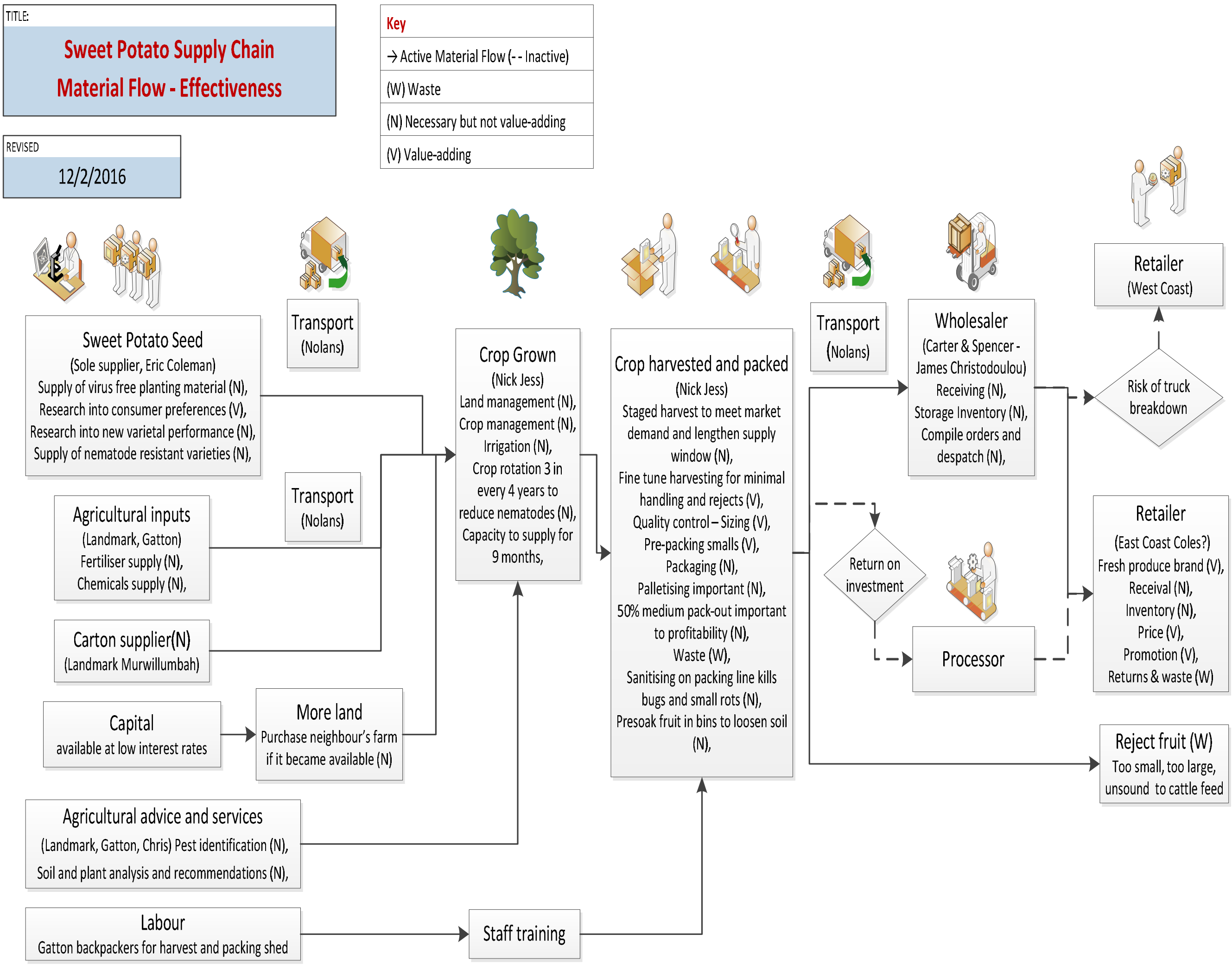
Appendix1 Sweetpotato supply chain



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Appendix 2 Sweetpotato exports Australia

Sweetpotato Australian export data (MICor MAF data)

Importers	Exported value in 2013	Exported value in 2014	Exported value in 2015	Three-Year Annual Average
World	$ 554,000	$ 784,000	$ 1,110,000	$ 816,000
United Arab Emirates	$ 385,000	$ 557,000	$ 768,000	$ 570,000
Singapore	$ 129,000	$ 148,000	$ 153,000	$ 143,333
Malaysia	$ 17,000	$ 28,000	$ 56,000	$ 33,667
New Zealand	$ -	$ 13,000	$ 43,000	$ 28,000
Hong Kong, China	$ 3,000	$ -	$ 24,000	$ 13,500
Indonesia	$ -	$ 6,000	$ 21,000	$ 13,500
Nauru	$ 6,000	$ 22,000	$ 17,000	$ 15,000
Qatar	$ 2,000	$ 3,000	$ 12,000	$ 5,667
Brunei Darussalam	$ 4,000	$ 1,000	$ 9,000	$ 4,667
Bahrain	$ 6,000	$ 6,000	$ 7,000	$ 6,333

Appendix 3 Australian sweetpotato products in Singapore and UAE

Australian Gold sweetotatoes in Dubai - price 16.95 DH/kg

Prichard brand sweetpotatoes from Bundaberg in Dubai

Dubai 12.50 DH/kg

Dubai 18.95 DH/kg

Images from Singapore retail stores

Australian product in Singapore

Japanese product in Singapore

Malaysian Product in Singapore

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