Markets for Western Australian seed potatoes

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Peter Dawson

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Markets for Western Australian seed potatoes

Supporting your success
Markets for Western Australian seed potatoes

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\textsuperscript{1}Research economist  \textsuperscript{2}Development officer

December 2016

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Acknowledgements

Anne Bennett, Andrew Taylor, John Ruprecht and Paul Mattingley, Kon Peos – Southern Packers, Kirrily Palmer and Megan Hele Design

Photo courtesy: Kon Peos, Southern Packers
Executive summary

Western Australia has a major share (70%) in seed potato exports from Australia. However, exports from WA have declined by 56% from 3703 tonnes in 2010 to 1302 tonnes in 2015. In addition, Australia experienced a fall in the consumption of potatoes during recent years reducing local demand for seed potatoes. Identification of potential new overseas markets is required if WA export seed production is to increase.

Export of seed potatoes is concentrated with ten countries; Netherlands, UK, France, Egypt, Germany, Canada, Denmark, Belgium, US and South Africa constituting 95% of the export market. The main season of seed potato export is from October to May peaking between November and December. June to September could be a seasonal window for WA exports where other major suppliers are not very active in the trade market. This report explores the market opportunities for WA seed potatoes outside existing export markets. Methodology developed by the International Trade Centre is used to identify the top ten markets based on their market attractiveness. The methodology uses indicators such as premium market, growth in imports, comparative tariffs and macro-economic indicators to rank the markets. A major limitation with this approach is biosecurity cannot be used as an indicator even through it is a major market access indicator. To manage this limitation, those countries where there is a clear indication that ‘the product is a prohibited import’ are eliminated from the analysis.

Using the described methodology, Pakistan, Brazil, Egypt, Sri Lanka, Niger and Bangladesh are identified as potential countries for WA seed potato exports according to market attractiveness. All of these markets are high (up to 1196 USD/t) or medium value importers, where the average cost of production of seed potato in WA is only USD 561/t (AUD 780/t). The major seasonal window for WA product is from June to September during which European producers cannot supply the product due to dormancy.

This analysis uses a sophisticated methodology to identify six high potential markets. The minor differences between the market attractiveness indices for the selected countries show the group have similar potential and merit further investigation.
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Markets for Western Australian seed potatoes
1. Introduction

Background
Western Australia has a major share (70%) in seed potato exports from Australia. However, exports from WA have declined by 56% from 2010 to 2015. Additionally, Australia has recently experienced a fall in the consumption of potatoes. Identification of potential new overseas markets is required if WA export seed production is to increase.

Potential emerging markets are in developing countries where potato consumption is growing at a faster than population. The high incidence of potato pest and disease in these nations and the limited success of seed production systems in the tropics results in seed potatoes being largely sourced from Europe. WA has a comparative advantage for these markets over European suppliers, as WA can supply seed potatoes at the suitable physiological age at times of year when the European suppliers can not. These markets could be target markets for expanding seed potato exports from WA.

This study aims to identify the best potential markets for additional Western Australian seed potato exports.

2. Method

Methodology developed by the International Trade Centre was used to identify the top ten markets based on their market attractiveness. Details are in Appendix I.

The first step was to identify all countries that are importing seed potato. There are 203 seed potato importing countries. The list was then filtered by selecting those seed potato importing countries with an average import value of more than USD $1m per annum.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Matching Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>203</td>
<td>All importers</td>
</tr>
<tr>
<td>77</td>
<td>Countries with more than 1 million USD import value</td>
</tr>
<tr>
<td>10</td>
<td>Countries with highest Market Attractiveness Index</td>
</tr>
<tr>
<td>6</td>
<td>Top rated countries with favourable non economic conditions</td>
</tr>
</tbody>
</table>

Figure 1. Methodology used to identify the top ten markets based on market attractiveness
This process identified seventy seven countries.

Next, the selected countries were ranked based on three indicators of market access and six indicators of market demand (Table 1). Indicators were selected and weighted accordingly, based on their relevance to Australian exports. Indicators\(^c\) were converted to index numbers\(^d\) for this purpose (see Appendix I for details).

Index numbers range from 0-100 and were calculated for each of the nine indicators for each of the 77 countries (693 index numbers in total). Index numbers for nine indicators were then combined for each country to calculate the Market Attractiveness Index.

The countries with the top ten market attractiveness index were then identified.

As WA is a premium producer rather than a quantity producer, more weight is given to import unit price and market growth in the analysis, compared to indicators such as the size of the market or distance to market. Historically WA product has received premium prices in our traditional export markets.

Market access and market demand are the major components of market attractiveness.

Market access includes only distance, tariff and trade relations. It does not include non-tariff protection measures such as biosecurity protocols which is a limitation of

---

\(^c\) Indicator: Anything that indicates. Example: Potato import value growth in Pakistan.

\(^d\) Index numbers: Developed for comparing indicators, value ranges between 0 and 100
the approach. However those countries where there is a clear indication that ‘the product is a prohibited import’ were eliminated from the analysis.

A final non-economic evaluation of countries was then undertaken of the top ten countries. This final filter left six countries.

From the top ten countries identified, four were eliminated. The list of top ten countries is shown in Appendix 3 and the reason for eliminating four of these countries is provided in Table 2.

Table 2. Non-economic reasons for exclusion from list of potential target importing countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syria</td>
<td>Political instability</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Frequent change in policies, lot of work done already. Government currently doesn't issue permit for Granola, the major variety used. Permits are issued for Atlantic crisp processing and WA already has a good share here</td>
</tr>
<tr>
<td>Macedonia</td>
<td>European country, close to major suppliers, competitiveness may be low</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Australia is well established, potential is reached already</td>
</tr>
</tbody>
</table>

Major data sources

**Production:** Food and Agricultural Organization

**Population:** World Bank

**Trade details, tariff:** International Trade Centre

**Bio security protocol:** MCoR

Other information sources are referenced in the text.

3. Results and discussion

Potential markets

Pakistan, Brazil, Egypt, Sri Lanka, Niger and Bangladesh were found to be major potential seed potato export markets for Western Australia.

Selected countries along with their Market Attractiveness Index are shown in Figure 2. Market Attractiveness Index of top 50 countries is shown in Figure 3.

Figure 2. Ranking based on Market Attractiveness Index

[Graph showing Market Attractiveness Index for Pakistan, Brazil, Egypt, Sri Lanka, Niger, and Bangladesh]
Figure 3. Top 50 countries based on Market Attractiveness Index
As there are only minor differences between the market attractiveness indices of the six selected countries, it would be more appropriate to consider this as a group of countries with good potential, rather than a ranking within them. However some observations on differences are discussed.

Market access and market demand are the major components of market attractiveness. Market demand is highest for Egypt among the top rated countries.

Comparative competitiveness of different countries based on different indicators is shown in Figure 4.

Values for major indices that are more important from a WA perspective are shown in Figure 4. For example, Brazil has the highest value for market premium. This may be due to the import of low generation seed, i.e. minitubers (G0) and G1 which are more expensive than the later generations, (e.g. G6) usually imported by other markets.

Of the six identified countries, Egypt has the lowest value for this indicator. Egypt is the major market in terms of market size, but in terms of market growth it ranks second from the bottom. However market size is very large for Egypt compared to the other markets. Hence a small portion of Egypt market may create big opportunity for WA exports.

Market growth is highest for Niger; however, the size of the market is very small.

Egypt and Brazil have a value of 100 in market size and market premium respectively. This means that among all the importers of seed potato (203 countries) Egypt ranks first in market size and Brazil ranks first in market premium.

With all six countries considered to have good potential details on each country have been compiled.

The ratio of seed potato import to production is about 3 for Egypt, 2 for Sri Lanka and less than 1 for other countries.
Details on potential markets

1. Pakistan

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value(^5) (2010-2014) USD m</td>
<td>6.08</td>
</tr>
<tr>
<td>Average unit value(^6) of imports USD/t (2010-2014)</td>
<td>887</td>
</tr>
<tr>
<td>CAGR (compound annual growth rate) of import value growth % (2010-14)</td>
<td>30%</td>
</tr>
<tr>
<td>Tariff level for Australia(^6)</td>
<td>2%</td>
</tr>
<tr>
<td>Major exporters(^6)</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Main import season(^6)</td>
<td>Oct–Dec</td>
</tr>
</tbody>
</table>

Potato (total, not just seed) production per capita\(^7,5\) | 19kg |

GDP growth\(^8\) | 4.4% |

Australia’s export share\(^6\) | 0% |

Average (2010-2014) monthly imports

- Dec: 40%
- Nov: 36%
- Oct: 20%
- Jan: 4%
- Others: 0%

Trends in potato production and production per capita

CAGR 4%

CAGR 7%
Opportunities

• Import volume has increased by 350% between 2010 and 2014
• Production has increased by 276% (CAGR 7%) and per capita production by 137% (CAGR 4%) from 1993 to 2014
• More than 90% growers use non-certified seed

Constraints

• Unit value of imports has declined by 37% between 2010 and 2014
• Recent years show a sudden increase in import volume and decline in unit value
• Import protocols are not available in MIoC (Manual of Importing Country Requirements) hence need to investigate quarantine requirements further

General details

Crop calendar

<table>
<thead>
<tr>
<th>Crop</th>
<th>Planting</th>
<th>Production share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>Jan-Feb</td>
<td>7.1%</td>
</tr>
<tr>
<td>Summer</td>
<td>Mar-May</td>
<td>15-20%</td>
</tr>
<tr>
<td>Autumn</td>
<td>Sep-Oct</td>
<td>70-75%</td>
</tr>
</tbody>
</table>

Source: Arian, G.N

• Major white skinned varieties include Sante, Multa, Diamant, Hermes, Lady Rosetta, Ajax and patrones
• Major red skinned varieties include Lala Faisal, Ultimas, Desiree (public domain variety available in Australia), Cardinal, SH-5, Kuroda, Oscar and Symfonia
• Autumn is the main production season

Both production and per capita production shows a highly positive trend over the past decade, stemming from increasing population, per capita consumption and exports. Anecdotal and statistical evidence suggest the increasing demand for good quality seed potato. Pakistan’s main import season is from Oct-Dec which coincides with the supply season of its major supplying country, Netherlands. However, their main production season is Sep-Oct. Further research needs to be done whether there is potential for Australia to explore this market for Northern Hemisphere autumn supply as this seems to be a seasonal window for Australian product. However, Pakistan may not be a high value market as such, even though there could be segments in the markets which can absorb high value product.
2. Brazil

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value (2010-2014) USD m</td>
<td>6</td>
</tr>
<tr>
<td>Average unit value of imports USD/t (2010-2014)</td>
<td>1196</td>
</tr>
<tr>
<td>CAGR of import value (2010-14)</td>
<td>3%</td>
</tr>
<tr>
<td>Tariff level for Australia</td>
<td>0%</td>
</tr>
<tr>
<td>Major importers</td>
<td>Netherlands, Argentina, Chile, Canada, UK</td>
</tr>
<tr>
<td>Main import season</td>
<td>Jan–Apr</td>
</tr>
<tr>
<td>Potato (total, not just seed) production per capita</td>
<td>17 kg</td>
</tr>
<tr>
<td>GDP growth</td>
<td>1.39%</td>
</tr>
<tr>
<td>Australia’s export share</td>
<td>0%</td>
</tr>
</tbody>
</table>

Average (2010-2014) monthly imports

- May: 8%
- Jun: 9%
- Jul: 9%
- Aug: 5%
- Sep: 2%
- Others: 4%
- Jan: 18%
- Feb: 18%
- Mar: 18%
- Apr: 14%

Trends in potato production and production per capita

- Production (000 tonnes)
- Production per capita (kg/person)
- CAGR 1%
- CAGR 2.1%
Opportunities

- Market demands high quality seed potatoes
- Disease pressure is very heavy, which demands new young seed often
- Good seed market opportunity for low generation seed or mini-tubers
- Brazil is considered a prize market for processed potato snacks
- Viral disease is one of the most important production constraints (potato leaf roll virus) leading to degeneration of potato tubers
- Production has increased by 50% and per capita production by 16% between 1993 and 2013
- Production has a CAGR of 2.1% and per capita production has CAGR of 1% during the same period
- In Sao Paulo after two or three multiplications of imported virus free potato seed, PLRV infection can be 80%

Constraints

- Atlantic get rapidly infested with virus
- Import protocols are not available in MICoR
- Varietal registration is an expensive process

General details

- Testing of new varieties may be considered before registering. Variety needs to undergo three years of trials in multiple areas before it is registered
- Agata and Cupid are popular varieties which are not in WA
- Agata is a disease resistant variety which can be regrown for years
- Seed import market seems to be only mini-tubers and nuclear to G1 seed
- In Sao Paulo, potato is cultivated every month of the year, in other states often twice a year
- Ben Brasil and Elma Chips are the two major processing companies
- Potato consumption per capita in 2013 was 17.9 kg
3. Egypt

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value&lt;sup&gt;6&lt;/sup&gt; (2010-2014) USD m</td>
<td>108</td>
</tr>
<tr>
<td>Average unit value&lt;sup&gt;6&lt;/sup&gt; of imports USD/t (2010-2014)</td>
<td>869</td>
</tr>
<tr>
<td>CAGR of import value (2010-14)</td>
<td>5%</td>
</tr>
<tr>
<td>Tariff level for Australia&lt;sup&gt;6&lt;/sup&gt;</td>
<td>2%</td>
</tr>
<tr>
<td>Major exporters&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Netherlands, UK, France, Ireland</td>
</tr>
<tr>
<td>Main import season&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Nov–Dec</td>
</tr>
<tr>
<td>Potato (total, not just seed) production per capita&lt;sup&gt;7,5&lt;/sup&gt;</td>
<td>49 kg</td>
</tr>
<tr>
<td>GDP growth&lt;sup&gt;8&lt;/sup&gt;</td>
<td>3.6%</td>
</tr>
<tr>
<td>Australia’s export share&lt;sup&gt;6&lt;/sup&gt;</td>
<td>0%</td>
</tr>
</tbody>
</table>

Average (2010-2014) monthly imports

Trends in potato production and production per capita
Opportunities

- Market that demands high quality
- Egypt is a heavy importer of seed potato
- Ware potato export is highly important to Egypt and clearly relies on high quality seed from elsewhere
- Production has increased by 167% and per capita production by 83% with a CAGR of 5% and 3.1% respectively between 1993 and 2013
- WA can supply seed for autumn and winter crops. Also WA can supply more mature seed for early spring crop

Constraints

- Varieties need to be approved after trials. Approval process is opaque and difficult
- Import protocols are not available in MCoR, hence need to confirm details on non-tariff trade barriers related to market access

General details

- Delta region, Valley and Fayoum are the major potato producing regions
- Three categories for seed potato – imported certified seed, locally multiplied and certified seed and locally produced uncertified seed
- Egypt produces two types of potatoes. Small attractive potatoes for export to the EU countries and larger potatoes for local markets and for export to Russia
- European union countries send seed to Egypt and buy fresh market potatoes for the winter market in Europe
- The Nile delta and the irrigated Western Desert are the main growing areas
- Large Western Desert farms are vertically integrated and own seed import businesses with exclusive contracts with European seed sources
- Agrofood produces good quality certified seed recognized with high productivity and high quality
- Diamant, Picasso, Spunta, Done, Markies, Ambition, Faluka, Armada, Provento, Festival, Agria Arnova, Maranca, Sinora, Ditta, Sante and Mustang are some of the varieties Egypt import and grows. Diament, Maranca and Spunta are grown in WA.
4. Sri Lanka

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value ((2010-2014)) USD m</td>
<td>1.4</td>
</tr>
<tr>
<td>Average unit value ((2010-2014)) USD/t</td>
<td>881</td>
</tr>
<tr>
<td>CAGR of import value growth ((2010-2014))</td>
<td>21%</td>
</tr>
<tr>
<td>Tariff level for Australia</td>
<td>0%</td>
</tr>
<tr>
<td>Major exporters</td>
<td>Netherlands, US</td>
</tr>
<tr>
<td>Main import season</td>
<td>Oct–Dec</td>
</tr>
<tr>
<td>Potato (total, not just seed) production per capita (\leq 1.5)</td>
<td>4 kg</td>
</tr>
<tr>
<td>GDP growth</td>
<td>6.8%</td>
</tr>
<tr>
<td>Australia’s export share</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Average (2010-2014) monthly imports**

- Dec 18%
- Nov 22%
- Oct 30%
- Others 23%
- Jan 7%

**Trends in potato production and production per capita**

- Production: CAGR -1%
- Production per capita: CAGR 0.04%
Opportunities
- Market that demands high quality product
- Unavailability of quality seed is an existing production problem

Constraints
- Storage of seed potato is an issue. Farmers store potatoes on boxes and keep them at their homes where ventilation is low. This leads to heavy seed loss.
- Planting cannot be done in Nuwara Eliya during May to June due to heavy wind and rain. Similarly between December and January production is restricted due to night frost.
- Import protocols for seed potatoes are not available in MICoR (fresh potato as such is a prohibited import) however WA has exported to Sri Lanka previously.
- Production has declined by 13% and production per capita has increased by just 1% between 1993 and 2003.
- CAGR for production is just 0.4% and production per capita is -1% during the same period.

General details
- Major potato producing districts are Nuwara Eliya and Badulla. In Jaffna and Puttalam, potatoes are grown to a lesser extent.
- Cultivation in two major seasons using varieties Yala and Maha.
- Planting season is Feb-Jul (Yala) and Aug-Dec (Maha).
- Annually the Department of Agriculture imports 300-3500 tonnes of certified seed from European countries.
- Recommended varieties are Sita, Hillstar, Desiree, Sante, Raja, Granola, Kondor, Manike, Lukshmi, Krushi and Isna. Desiree and Granola are grown in WA.
5. Niger

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value(^6) (2010-2014) USD m</td>
<td>1.4</td>
</tr>
<tr>
<td>Average unit value(^6) of imports USD/t (2010-2014)</td>
<td>1042</td>
</tr>
<tr>
<td>CAGR of import value growth % (2010-2014)</td>
<td>31%</td>
</tr>
<tr>
<td>Tariff level for Australia(^6)</td>
<td>5%</td>
</tr>
<tr>
<td>Major exporters(^6)</td>
<td>France</td>
</tr>
<tr>
<td>Main import season(^6)</td>
<td>Oct–Feb</td>
</tr>
<tr>
<td>Potato (total, not just seed) production per capita(^7,5)</td>
<td>4.8 kg</td>
</tr>
<tr>
<td>GDP growth(^8)</td>
<td>6.7%</td>
</tr>
<tr>
<td>Australia’s export share(^6)</td>
<td>0%</td>
</tr>
</tbody>
</table>

Average (2010-2014) monthly imports

- Nov 15%
- Dec 32%
- Oct 12%
- Mar 9%
- Feb 13%
- Jan 18%
- Others 1%

Trends in potato production and production per capita

- Production
- Production per capita

CAGR 14%
CAGR 19%
**Opportunities**
- Market demands high quality seed potatoes
- Production increased by 3048% and production per capita by 1397% between 1993 and 2013
- Both production and production per capita has high CAGR of 19% and 14% respectively
- Premium market with high unit value of import

**Constraints**
- Low volume market
- Trade relation index is zero meaning Australia has no trade with Niger. Hence establishment may be difficult
- Australia does not have a competitive advantage in distance
- Secondary sources of information are very low, hence further exploration is needed about planting times and varieties preferred by the market.
- No import protocol available in MCoR. Hence market access needs to be checked

**General details**
- Niger has very impressive market growth and is a promising opportunity. However the size of the market and lack of established trade relations may make it a comparatively difficult market to enter.
6. Bangladesh

<table>
<thead>
<tr>
<th>Particulars — seed potato</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import value(^6) (2010-2014) USD m</td>
<td>4</td>
</tr>
<tr>
<td>Average unit value(^6) of imports USD/t (2010-2014)</td>
<td>932</td>
</tr>
<tr>
<td>CAGR of import value growth % (2010-2014)</td>
<td>-1%</td>
</tr>
<tr>
<td>Tariff level for Australia(^6)</td>
<td>0%</td>
</tr>
<tr>
<td>Major exporters(^6)</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Main import season(^6)</td>
<td>Sept–Oct</td>
</tr>
<tr>
<td>Potato (total, not just seed) production per capita(^7,(^5))</td>
<td>55 kg</td>
</tr>
<tr>
<td>GDP growth(^8)</td>
<td>6.6%</td>
</tr>
<tr>
<td>Australia’s export share(^8)</td>
<td>0%</td>
</tr>
</tbody>
</table>

Average (2010-2014) monthly imports

- Oct 78%
- Sept 21%
- Others 1%

Trends in potato production and production per capita

![Graph showing trends in potato production and production per capita](image.png)
Opportunities

- Market that demands high quality
- 84% of the total potato area is planted with high yielding varieties\(^{21}\)
- Bangladesh managed to triple its potato production in the last 12 years\(^{22}\)
- Lack of good quality seed is a major concern\(^{24}\)
- Certified seed of formal system meet only 5-6% of total seed demand\(^{23}\)
- Production increased by 522% and per capita production by 349% between 1993 and 2013
- CAGR of production is 10% and per capita production is 8% during the same period.
- High incidence of disease\(^{23}\)

Constraints

- Imported seed constitutes only 1% of the total seed\(^{23}\)
- Potato is limited to winter crop due to climatic conditions\(^{20}\)

General details

- Planting is done in October through November for harvesting in February through March\(^{20}\)
- Main high yielding varieties are Cardinal, Diament, Asterix, Kurfi Sindhury, Alisa, Alpha, Archa, Baraka, Chamak, Cleopatra, Dheera, Granola, Hira, Maurin, Mondial, Morena, Multa, Origo and Patronis\(^{20}\)
- Both formal and informal seed system in place\(^{23}\)
- Tubers retained for seed must be stored for several months from one season’s harvest to the next planting under the informal system\(^{23}\)
- State sponsored institutions produce and distribute seeds under a formal seed system\(^{23}\)
- Tuber Crop Research Centre (TCRC) maintains germplasm and produces breeder seed\(^{23}\)
- Foundation seed is produced by Bangladesh Agriculture Development Corporation\(^{23}\)
- Rangpur, Rajshahi and Dhaka are the major potato producing divisions\(^{21}\)
- Import permit, phytosanitary certificate and additional declaration is required\(^{27}\)
- All consignments are to be treated with an approved fungicide at recommended manufacturer’s requirements to eliminate blight (\textit{Alternaria circinans} and \textit{A. herculae})\(^{27}\).
  The current names of these pathogens are \textit{A. brassicicola} and \textit{A. brassicae} respectively\(^{29}\)
Global Trade

Export of seed potatoes is mainly concentrated in European countries, with top ten exporters constituting 95% of the total value. Most of the exports are from October to May having 99% of the total share based on 2013 value\(^6\). The Netherlands is the largest exporter constituting 58% of the total by value.

Import is more diversified with the top ten importers constituting only 54% of the total by value. Egypt is the largest importer with a share of 12%. November to May is the main import season. Netherlands is the major supplier to Egypt\(^6\). Egypt is the only target country to make the top ten importing list.

A few countries such as Egypt, Netherlands, Belgium and Germany appear both in the top ten exporters and importers list because of counterseasonal imports. WA would have a seasonal window from June to September where the European markets are not supplying the product.

Details on global trade including unit value of trade, season, share and major countries are shown in the figures on the following pages.
Top ten seed potato exporters

Top ten exporters by value (2010-2014)

- Netherlands (58%)
- France (8%)
- Egypt (5%)
- Germany (5%)
- Canada (4%)
- Denmark (4%)
- Belgium (3%)
- US (1%)
- South Africa (1%)
- Others (5%)

Top ten exporters by quantity (2010-2014)

- Netherlands (55%)
- France (8%)
- Egypt (6%)
- Germany (5%)
- Canada (4%)
- Denmark (4%)
- Belgium (4%)
- US (1%)
- Others (5%)
- Ethiopia (1%)

Unit value of exports (USD/tonne)

- Netherlands: 613
- UK: 688
- France: 688
- Egypt: 541
- Germany: 483
- Canada: 553
- Denmark: 420
- Belgium: 589
- US: 569
- South Africa: 494

Exporters | Main season of exports | Major importers
--- | --- | ---
Netherlands | Oct–May | Algeria, Germany, Belgium, Egypt, Italy, Spain, Israel, France, UK, Syria
UK | Oct–April | Egypt, Spain, Morocco, Netherlands, Ireland, Russia, Thailand, Saudi
France | Oct–April | Tunisia, Egypt, Netherlands, Belgium, Spain, Algeria, Portugal, Italy
Egypt | Jan–Jun | Russia, Italy, Kuwait, Lebanon, Germany, Syria, Greece, UAE
Germany | Oct–May | Netherlands, Portugal, Russia, Poland, Turkey, Austria, Denmark, Italy
Canada | Nov–May | US, Venezuela, Mexico, Cuba
Denmark | Oct–Apr | Egypt, Algeria, Netherlands, Lebanon, Sweden, Portugal, Spain, Jordan
Belgium | Oct–May | France, Netherlands, Lebanon, Egypt, Spain, Italy, Syria, Morocco
US | April–May | Canada, Mexico, Uruguay
South Africa | Apr–Jul | Zambia, Namibia, Mozambique

Data source: International Trade Centre, Global Trade Atlas
### Top ten seed potato importers

#### Top ten importers by value (2010-2014)

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>10%</td>
</tr>
<tr>
<td>Algeria</td>
<td>9%</td>
</tr>
<tr>
<td>Belgium</td>
<td>6%</td>
</tr>
<tr>
<td>Spain</td>
<td>5%</td>
</tr>
<tr>
<td>Germany</td>
<td>5%</td>
</tr>
<tr>
<td>Italy</td>
<td>4%</td>
</tr>
<tr>
<td>Portugal</td>
<td>3%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3%</td>
</tr>
<tr>
<td>Morocco</td>
<td>3%</td>
</tr>
<tr>
<td>US</td>
<td>3%</td>
</tr>
<tr>
<td>Others</td>
<td>58%</td>
</tr>
</tbody>
</table>

#### Top ten importers by quantity (2010-2014)

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>9%</td>
</tr>
<tr>
<td>Algeria</td>
<td>8%</td>
</tr>
<tr>
<td>Belgium</td>
<td>8%</td>
</tr>
<tr>
<td>Spain</td>
<td>6%</td>
</tr>
<tr>
<td>Germany</td>
<td>6%</td>
</tr>
<tr>
<td>Italy</td>
<td>5%</td>
</tr>
<tr>
<td>Portugal</td>
<td>5%</td>
</tr>
<tr>
<td>US</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>41%</td>
</tr>
</tbody>
</table>

#### Unit value of imports (USD/tonne)

- Egypt: 869
- Algeria: 707
- Belgium: 553
- Spain: 755
- Germany: 549
- Italy: 540
- Morocco: 655
- US: 352
- Portugal: 643
- Netherlands: 331

#### Importers

<table>
<thead>
<tr>
<th>Country</th>
<th>Main season of imports</th>
<th>Major exporters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>Nov–Jan</td>
<td>Netherlands, UK, France, Denmark, Germany, Ireland, Belgium</td>
</tr>
<tr>
<td>Algeria</td>
<td>Nov–Feb</td>
<td>Netherlands, Denmark, France, Belgium</td>
</tr>
<tr>
<td>Belgium</td>
<td>Mar–May (peak)</td>
<td>Netherlands, France, Luxembourg</td>
</tr>
<tr>
<td>Spain</td>
<td>Oct–Apr</td>
<td>Netherlands, UK, France, Portugal, Belgium, Germany, Denmark</td>
</tr>
<tr>
<td>Germany</td>
<td>Nov–May</td>
<td>Netherlands, France</td>
</tr>
<tr>
<td>Italy</td>
<td>Nov–Apr</td>
<td>Netherlands, France, Germany, Belgium, Denmark</td>
</tr>
<tr>
<td>Portugal</td>
<td>Nov–Apr</td>
<td>Netherlands, Germany, France, Spain, Denmark, UK</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Nov–Jun</td>
<td>France, Germany, UK, Belgium, Denmark</td>
</tr>
<tr>
<td>Morocco</td>
<td>Dec–Feb</td>
<td>Netherlands, UK, France</td>
</tr>
<tr>
<td>US</td>
<td>Dec–May</td>
<td>Canada</td>
</tr>
</tbody>
</table>

Data source: International Trade Centre, Global Trade Atlas
4. Conclusions

Pakistan, Brazil, Egypt, Sri Lanka, Niger and Bangladesh are potential markets for Australian seed potato exports. All of these are high or medium value markets. Egypt has impressive market size and Pakistan, Sri Lanka and Niger have the highest growth. There are minor differences between the market attractiveness indices of these selected countries. So it is more appropriate to consider this as a group of countries with good potential.

Biosecurity protocols were not analysed, however any markets where seed potato is a prohibited import was not included in the analysis.

The main season of export of seed potatoes to these countries is from October to May which peaks between November and December. The importing period may reflect the availability of the product as well as the need for the product in the importing country. For example, Pakistan’s main production season is September to October while the main import period is between October and December. That means the imported seed is used only for spring production which constitutes 7% of the total production. Therefore June to September could be a seasonal window for Western Australian exports where other major suppliers are not very active in the trade market. Further investigation to explore these trends in potential countries would be helpful in creating opportunity for Western Australian seed potatoes.

Europe is the main supplier of seed potatoes. The top ten exporters have a value share of 95% showing the oligopolistic nature of the market. WA, with counter seasonal production can supply the product when northern hemisphere producers cannot. Creating seasonal windows where WA can supply a better product.

The import market is more diversified with the top ten importers constituting only 54% of the total imports.

Australia exports to Mauritius with a price premium of 5% even with 69% of the market share. With the counter-seasonal production and high quality seed, WA may be in an excellent position to get similar premium market share in other countries as well.

The markets identified through this analysis are high or medium value markets. The small size of WA production may not necessitate a wider penetration; however success may depend on capturing the premium value segment of these markets.
5. References

6. International Trade Centre
7. Food and Agriculture Organization


25. DAFWA. Investment opportunities in seed potato production in Western Australia.


29. Wood Christine, DAFWA. Personal communication 7th June 2016.
6. Appendices

Appendix I — Market Attractiveness index methodology

- Market demand index was developed based on seven sub-indices, using the indicators of import value growth, market size, unit value of import, trade balance, change in trade balance and future growth in GDP.

- Market access index was developed from three sub-indices using the indicators of difference in average (average tariff for all importing countries) and bilateral tariffs (tariff for Australia), difference in average (average distance of all importing countries) and bilateral distance (distance between Australia and the importing country) and total Australian trade with that importing country.

- Combining these two — market demand and market access indices. Market attractiveness index was developed.

The following formula was used to normalise the indicator.

\[ I = \frac{(i - c)}{(x - c)} \times 100 \]

Where:
- \( I \) = Index
- \( i \) = Indicator,
- \( c \) = Minimum value of the cell
- \( x \) = Maximum value of the cell

These indicators are combined to form sub-indices, which are then used to calculate composite index.

Different indicators can’t be used for comparison purpose in the raw form. For example, growth in import value can’t be compared with tariff advantage. Different countries may rank differently in each of these indicators. Hence the indicators need to be normalised, so that they can be compared.
Markets for Western Australian seed potatoes

Market Attractiveness Index – Flow diagram*

- Market Attractiveness Index
- Market Access Index (1)
  - Distance Index (0.25)
    - Difference between Australian and competitor’s distance to destination country
  - Customs Tariff Index (1)
  - Trade Relations Index (0.25)
    - Total trade value
  - Market Premium Index (1.5)
    - Unit value of import
  - Market Growth Index (1)
    - Import value growth
  - Market Size Index (0.5)
    - Import value
  - Trade Balance Index (0.1)
    - Trade deficit
  - Future GDP Growth Index (0.25)
    - Dynamic to support TBI
    - Change in Trade Balance Index (0.1)
    - Macro economic – to identify market prospects

- Market Demand Index (1.75)

*Weightage given is shown in brackets
Appendix 2 — Top ten countries with high Market Attractiveness index

![Chart showing the top ten countries with high Market Attractiveness index]

Market Attractive index

<table>
<thead>
<tr>
<th>Country</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syria</td>
<td>69</td>
</tr>
<tr>
<td>Pakistan</td>
<td>67</td>
</tr>
<tr>
<td>Indonesia</td>
<td>66</td>
</tr>
<tr>
<td>Brazil</td>
<td>66</td>
</tr>
<tr>
<td>Egypt</td>
<td>65</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>64</td>
</tr>
<tr>
<td>Niger</td>
<td>64</td>
</tr>
<tr>
<td>Macedonia</td>
<td>63</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>63</td>
</tr>
<tr>
<td>Mauritius</td>
<td>63</td>
</tr>
</tbody>
</table>

Appendix 3 — Overview of domestic and international seed potato industry

WA current scenario

- WA has 70% of Australian export share by value
- Mauritius, Indonesia and Thailand are the major importers of Australian seed potato
- Australia already has a share of 69%, 44% and 7% respectively in these markets
- Price premium received (mainly due to our disease free status and counter-seasonal supply) is 5% each in Mauritius and Indonesian markets and 41% in Thailand market
- Indonesia’s current import policy allows only the import of Atlantic variety, while Granola represents 90% of the market in terms of production. If this policy is changed, WA will have better scope there.

World trade scenario

- Netherlands, UK, France, Egypt and Germany are the top five exporters by value having 84% of the total export share
- Netherlands is the major exporter with about 60% of the share of total world exports
- Supply from these major exporters is mainly from October to May having 99% of the total share based on 2013 value
- Egypt, Algeria, Belgium, Germany and Spain are the top five importers by value
- Egypt is the number one importer of seed potatoes by value
- Import of seed potato has shown a declining trend worldwide, declined by 5% in nominal value between 2010 and 2014.
Export of seed potato from Australia, 2015

<table>
<thead>
<tr>
<th></th>
<th>Total import value (AUD million)</th>
<th>Australian import value (AUD million)</th>
<th>Australia’s share in total imports</th>
<th>Average unit value of imports (AUD/tonne)</th>
<th>Unit value of Australian import (AUD/tonne)</th>
<th>% price premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritius</td>
<td>1.576</td>
<td>1.086</td>
<td>69%</td>
<td>1090</td>
<td>1140</td>
<td>5%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2.049</td>
<td>0.909</td>
<td>44%</td>
<td>983</td>
<td>1028</td>
<td>5%</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.600</td>
<td>0.104</td>
<td>7%</td>
<td>591</td>
<td>832</td>
<td>41%</td>
</tr>
</tbody>
</table>

Data source: GTA²⁸
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