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Looking into the Future Sustainability of the New Zealand Avocado Industry

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Executive Summary

The aim of this report is to investigate what the future sustainability of the New Zealand avocado industry looks like. The purpose is to provide an indication to my own business on how viable my business will be in the coming years in terms of industry growth rate and growers taking on more work themselves and less contracting out. Will this be a recurring theme or are there potentially multiple factors at play? This will be done by looking into the current scale of avocado plantings in New Zealand, how it has changed over time and what are the future plans of the Avocado industry. It will also cover off the challenges under the Covid-19 environment and how export has been affected due to the pandemic. The ultimate picture of what the industry's future looks like will be determined by the demand for New Zealand avocados and if there is still a viable overseas market. What the current market trends are and what direction they are going in and will New Zealand hold up against overseas competitors. We will delve into the overseas markets and create an understanding of how New Zealand avocado supply holds up against them. If we can understand what the present situation is and the reasons that have shaped the avocado industry into what it is today, we can understand the direction, structure and psyche of the sector. Once this investigation has been undertaken, our findings can be used to discuss our perceived future of the avocado sector.

The main findings include:

- A 3-fold increase in the current production of fruit for upcoming years due to the rapid rate of new plantings.
- The costs associated with getting fruit to market are rising
- In New Zealand we struggle to compete on quality, logistics, shipping cost, reliability, and industry resources required to promote and expand our markets and market-share

My recommendations as an outcome of this report are:

We should invest more time into seeking alternative markets, other than our closest neighbour, to export our premium fruit too.

The rapid rate of plantings will cause the fruit return to plummet unless we implement a restricted planting rate to ensure the market stays competitive and keeps new and old growers with a plausible return.

Industry bodies need to work together as one cohesive group to support growers, positively promote the industry and provide solutions to the common challenges.

Due to our little natural advantage of growing avocados in NZ, our focus to generate new consumer markets should move to organic production, carbon zero and further play on the clean, green, safe food aspects.

Acknowledgements

I would like to thank Lisa, Patrick, Desley and Scott for their able guidance and support throughout the completion of my project. I would also like to say a huge thankyou to my family and friends who supported me throughout this journey in one way or another. Your endless support, kindness, and understanding has contributed to the completion of this project. Also, a special mention to my fellow Kellogg participants for helping me get the confidence boost I needed to succeed in the program.

Introduction

Setting the Scene – Globally

With ongoing disruptive events worldwide adversely affecting supply chains and business trade, is there a chance the beloved avocado toast could be in danger? Among other things, Avocados and the environment have become synonymous with millennial culture. But unlike the environment, are avocados just a fad? Or are they here to stay, and go the distance?

Xavier Equihua, CEO of the World Avocado Organisation (WAO), states that “avocado is a food that never ceases to surprise by its versatility and its benefits. WAO members strive to ensure a sustainable and secure supply chain, creating jobs around the world and bringing all the benefits of this superfood while respecting our planet”.

The avocado has experienced the most rapid growth in its production in recent years. According to the Agricultural Outlook 2021-2030 report, published by the Food and Agriculture Organisation of the United Nations (FAO), by 2030 world avocado production is expected to reach 12 million tonnes, more than 3 times its 2010 level. Globally, avocados are expected to become *the most traded tropical fruit* with an export volume of 3.9 million tonnes, surpassing both pineapples and mangoes in terms of quantity. The total value of these global avocado exports is estimated to reach US\$8.3 billion.

The United States and the European Union are expected to remain the main importers of avocados with 40% and 31% respectively of world imports in 2030. However, imports are also expected to increase in many other countries, such as China, Asia in general, the Sub-Continent, and some countries in the Middle East. In 2020, Americans alone consumed 2.6 billion pounds of them (Coupa, 2021)

(The Agricultural Outlook 2021-2030 report was produced through collaboration between the Organization for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization of the United Nations (FAO)).

Currently the top 10 avocado producing countries represent nearly 80% of world production, but new cultivation areas are appearing. About 74% of avocado production will continue to come from Latin America and the Caribbean, under favourable growing conditions.

The production of Mexico, the world's largest producer and exporter, is expected to increase by 5.2% per year over the next 10 years. Despite competition from emerging exporters (Peru, Columbia), Mexico is expected to continue increasing its share of world

exports, reaching 63% in 2030 (OECD & Food and Agriculture Organization of the United Nations, 2021).

Before the late 1990's the avocado fruit used to be an expensive commodity that was somewhat obscure and ignored by many shoppers. It was difficult to acquire and expensive. Fast forward to the late 1990's and import restrictions into the USA were lifted on shipments of produce from Mexico. Next thing we know, avocados have become a staple in many diets with avocado consumption per capita in the USA tripling since 2001. The average American now eats around 8 pounds of avocados every year (Coupa, 2021). In addition to the skyrocketing demand for avocados internationally, the stigma around avocados being a fatty food finally was dropped. Thanks to the pro-good fat movement in the health world, consumers now know the health benefits of monounsaturated fats.

New Zealand – Setting the Scene

First, we need to understand the harvesting process of the avocado fruit is very particular. A little-known fact is that avocados mature on trees but do not ripen there like many other fruits. They must be picked and allowed time to ripen before they can be consumed. The ripening time can vary from days to week depending on the maturity levels when picked from the tree. This greatly increases the complexity of the supply chain analytics. New Zealand can produce the favoured Hass variety you find on local supermarket shelves close to 12-months of the year which satisfies domestic demand without the need for any imported product. The ideal NZ window to supply offshore markets with our Southern Hemisphere production falls between August and February.

Some decades back avocado production on a small scale was common through many growing regions of NZ. Some of the earlier commercial-scale production developed through the Bay of Plenty, the mid-North, with more recent and substantial plantings have gone into the Far North, Tairāhema, and to a lesser degree, Gisborne, and Coromandel (White. J, 2001).

What started out most typically as family owned and operated production units, have now moved to larger scale, and often corporate investor owned, farms. A number of the smaller Mom & Pop operations were hobby units being secondary incomes, while primary income was often earned offsite elsewhere – this is still the case in some production regions (White, J. (2001).

As with any business, be it manufactured or primary, as a product group progressively matures, supply and demand dynamics play an ever-increasing role in the scale and viability of an operation.

The development therefore of larger ‘economies of scale’ growing operations is inevitable, and potentially will see the demise of many smaller family or hobby farms.

The 2020-21 New Zealand avocado season produced a record export volume and total crop volume according to The New Zealand Avocado Annual Report. 44,000 tonnes of avocados were harvested, with 5.1 million trays (5.5kg) exported to 11 export markets, an increase of 10% on the previous season. 54% of New Zealand’s avocado production came from the Bay of Plenty region in 2020 with 39% coming out of the Northland.

New Zealand’s avocado industry value eclipsed \$227m in the 2020-21 season, with \$167m delivered by avocado exports and \$60m in sales in the New Zealand market continues The New Zealand Avocado Annual Report.

As per the following table relating to NZ production, the 2021-22 season is looking very similar.

Volume estimate for 2021-22

Destination	Estimate 1 2021-22	2020- 21 season (t)
Export class 1	4.8m trays	4.9m trays
Export for processing	0.4m trays	0.2m trays
New Zealand market fresh	2.1m trays	2.4m trays
New Zealand market processing	0.5m Trays	0.5m trays
Total Crop	7.8m trays	8.0m trays

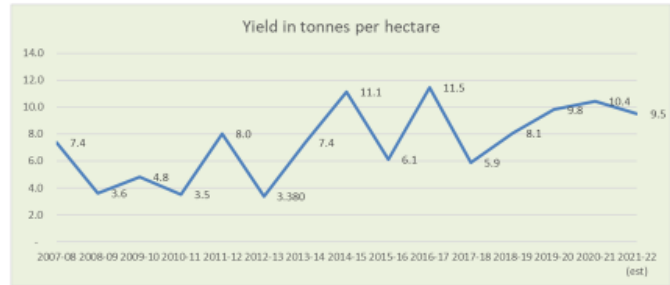


Figure 1 NZ Avocado production volume estimate for 2021-2022 season

Source: New Zealand Avocado

All of the Avocados we eat are grown right here in New Zealand, and along with the café culture and coffee, our obsession with avocados, particularly smashed avocado on toast, has been associated with the blame for lack of home ownership amongst millennials says NZ Herald!! ¹

¹ <https://www.nzherald.co.nz/business/dont-mess-with-millennials-avocado-toast-the-internet-fires-back-at-a-millionaire/HQI2HABQF3N7TBFTFNATADT6ZU/>



Figure 2 Smashed avocado on toast a staple in the cafe scene

Source: New Zealand Avocado March 2019

Avocados that are produced in clean green Aotearoa are in a number of ways a step ahead of avocados grown in other parts of the world - consequent to our unique growing environment, the responsible use of natural resources amongst growers, and the overarching industry systems put in place to assure food safety and quality.

Like a number of other global fruit crops, often due to the NZ farmer approach of ‘looking over the fence’ and noting what the neighbours are up to, avocado plantings in NZ continue to ramp up at what could be described as a frightening pace.

Some of this ‘growth’ may be viewed as farmer/grower diversification, some may be sound commercial decision making, investors flush with cash and looking for a safe home to park their money may be a driver, others may be driven due to lofty industry aspirations filtering down to unsuspecting and potential growers from peak industry body rhetoric.

The Growth of An Industry

The following table as per the ‘Primary Growth Partnership Business Plan’.....



Figure 3 The Government lead Primary Growth Partnership Business Plan

Source: New Zealand Avocado

The Government's Primary Growth Partnership (PGP) Business Plan – a joint venture between government and industry, that invests in long-term innovation programmes to increase the market success of the primary industries, uses the slogan “**Smart ideas, smart action, smart results**”.

The question is, are NZ avocados the **SMART** way to go?

"Fresh Facts" is published annually by Plant & Food Research and Horticulture New Zealand. The latest edition provides information for the year ended June 30, 2020. New Zealand exports hit a record NZ\$6.6 billion. This represents a further increase from the \$6.2 billion recorded in the previous period.

Regarding **fresh fruits**, export earnings reached NZD 3.7 billion, or + 8% compared to the previous period. Kiwifruit tops the rankings by a wide margin with NZD 2.5 billion, which is a further increase from the NZD 2.3 billion recorded in the previous period. Far behind the kiwi fruit, follow apple exports with NZD 876 million, avocados, and then blueberries.

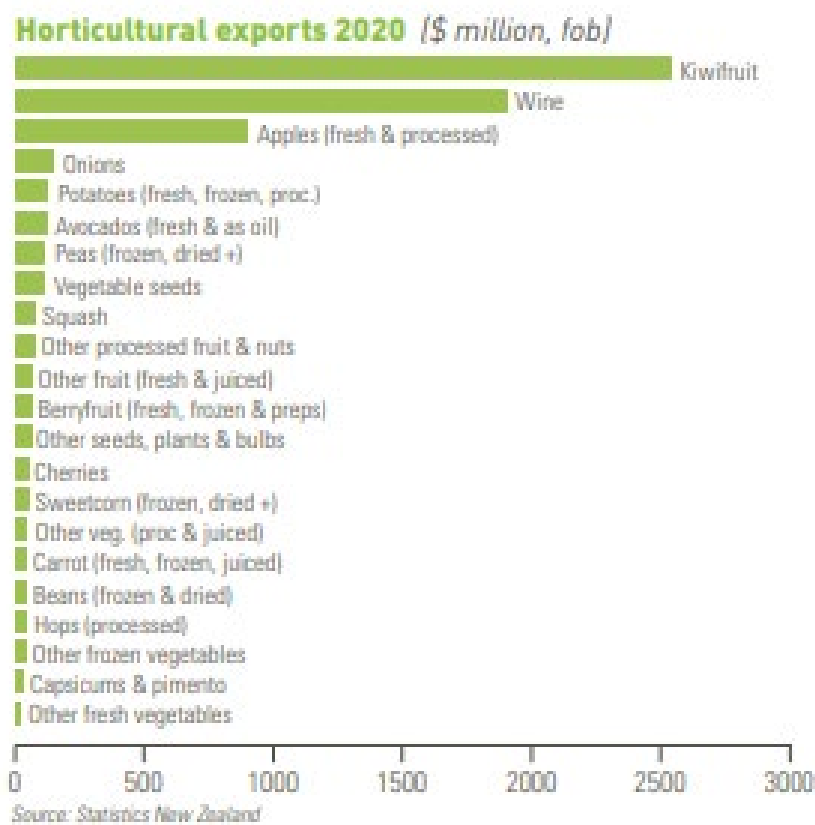


Figure 4 New Zealand's total horticulture exports 2020
Source: Statistics New Zealand

A combination of similar NZ peak industry body rhetoric, Government encouragement, the global success stories, a seemingly (to-date) insatiable consumer appetite for more avocados, endless print articles, health science aspects, hospitality, and social media broadcasts, have continued to paint a positive picture, and raise the profile of avocados from ‘Humble’, to ‘Star’.

As recently as 25th August 2021, posted in a 'Global AgInvesting' article, NZ's Booster Kiwisaver funds investment vehicle 'Tahi', has announced investment in the NZ avocado industry, stating the following:

"The New Zealand avocado market is currently in a position of strength and expansion. Containing 19 vitamins and nutrients, avocados are a natural fit with consumer shifts toward greater focus on health and wellness. The country is the ninth largest global avocado exporter, producing 2 percent of the world's supply from more than 4,000 hectares of orchards." (According to the NZ Horticulture Export Authority (HEA), 2020).

To further fuel this, planning is currently underway by NZ Avocado to host (in NZ) the biggest avocado gathering in the world, the World Avocado Congress in 2023. This four-yearly event represents an extraordinary opportunity for the avocado industry to come together in New Zealand from around the globe and showcase avocados to the world. The opportunity is ripe for avocados and for the wider horticulture and agriculture sectors to share stories of New Zealand's sustainable food production.

Commentary from NZ Avocado (*Livingston, A. (2019, April 29)*) indicates that well over 1000ha of new avocado orchards have been planted over the past three years in the Far North, Mid North around Whangarei and Kaikohe, and at Taporā on the Kaipara Harbour northwest of Auckland. When established and producing, this land will provide a 25%+ increase in the national productive avocado canopy.

Confidence in the future is demonstrated not only by the new ground being planted, but also more intensive spacings, sales of clonal seedlings from nurseries, and the offshore production advice being sought from Australia and Latin America.

Industry projections are that new plantings will continue at a similar pace in the future and avocados will earn \$1 billion a year by 2040 (*Livingston, A. (2019, April 29)*).

In the same vein, among others, and predominantly in the North, we also have heavyweight investors such as MyFarm, and Pāmu (the brand name for Landcorp Farming Limited) expanding their interests in avocado production (*2020, November 23, Farmers Weekly NZ*)

Headlines such as found in Stuff.co.nz publication as recent as Aug 30th 2021:

"New Zealand: Avocado trees planted by the thousands in Taranaki"

This dairy farming-dominated region will see some 6000 avocado trees planted this year, with another 10,000 in 2022. Venture Taranaki believes avocados are a significant export industry for New Zealand and hopes the fruit could help the region's economy to diversify.

NZ production units have burgeoned on the strength of this positivity, with little end in sight to the development of more and more production.

As on-orchard viability questions are raised due to increased areas of new plantings, one of the solutions put forward is focus on increased yields per hectare – does this not serve to increase the likely overall production further still??

As per the following diagram, the ultimate goal as suggested by NZ Avocado is a NZ\$1 billion industry by 2040.....

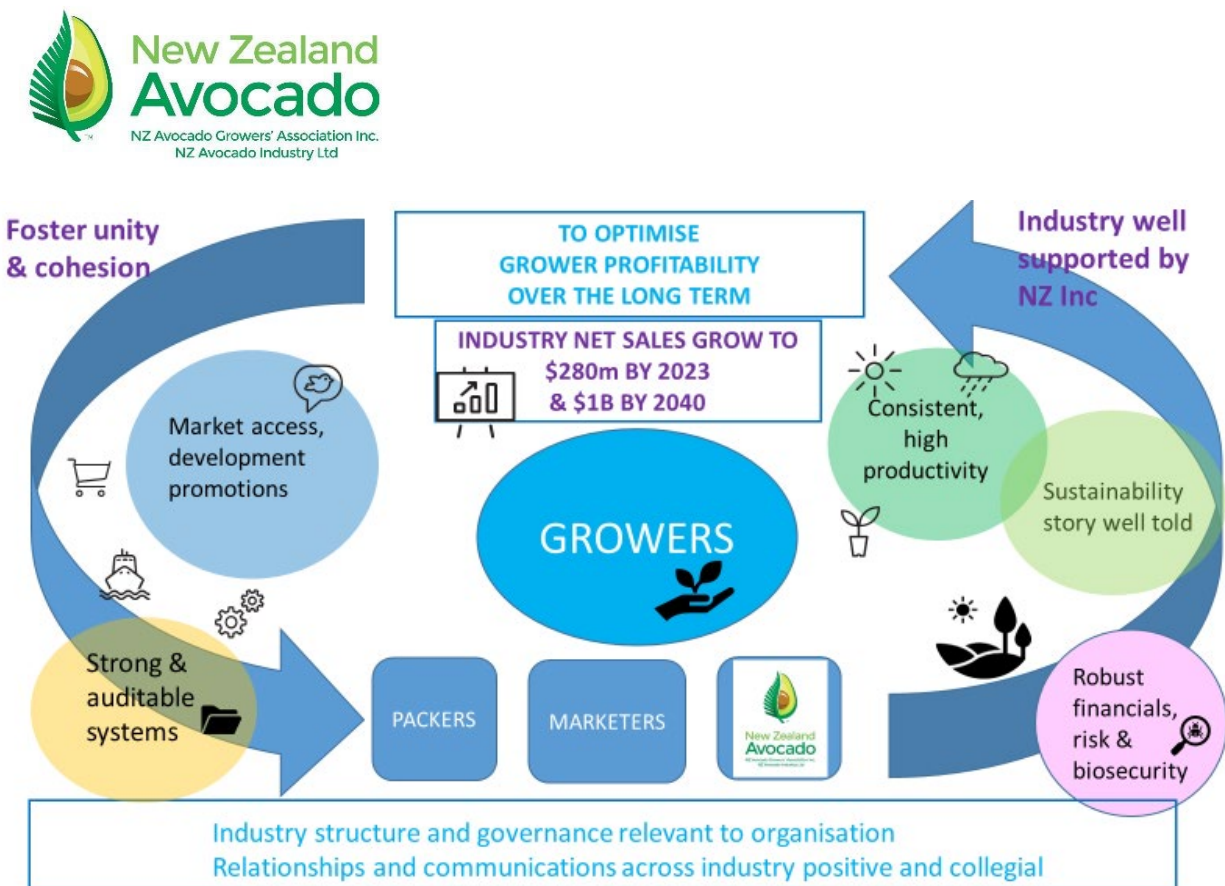


Figure 5 New Zealand Avocados plan to optimise grower profitability and industry sales

Source: New Zealand Avocado

Methodology

The methodology used for this report involved a literature review. The literature review was the major component of the research including findings from both domestic and international publications as well as industry reports, the current market trends, and the future trends. This research report investigates the expansion and direction of an industry on home soil and worldwide. It looks into the current scale of the avocado industry and the goals of the future laid out by Avocado NZ. The report will delve into the current challenges faced by growers and how likely these challenges are to persist or if there is a

shining light waiting at the end of the tunnel. An insider approach will be taken looking at how the current plans for the future are affecting ground level workers and compare those plans and challenges to other horticultural industries to find if a similar pattern is unfolding and how it can be managed.

The Debate

This 'project' serves to question the proposed New Zealand avocado industry production growth, and whether it is viable and sustainable from an environmental, commercial, on-orchard, social, and market perspective.

More is not always better, and perhaps we would be wise to maintain a boutique avocado industry in NZ, providing excellent, high quality products at acceptable value to both the producer and the consumer??

The avocado industry in NZ on such a commercial scale is relatively youthful when compared to our more mature horticultural export crops such as onions, buttercup squash, kiwifruit, wine grapes, and apples (White, J. 2001).

An argument could be made that the NZ domestic market is rapidly reaching full maturity, and at current prices is only marginally viable from a production perspective. The jury is out as to how much further per capita consumption can be encouraged to grow through consumer education and various promotional activities, while maintaining the required value back to growers. If this were to be the case, the large part of an increase in production would be heavily reliant on export markets to provide outlets for this increasing quantity at sustainable orchard gate returns.

Many industry participants from central Government, SOE's, industry bodies, investment vehicles, farmers, post-harvest operators, all have their own agendas when it comes to planting for future production. Some plantings may be for purely land-value purposes, with a view to development and sale well prior to any commercial production coming on-stream.

The risk to the NZ avocado industry at large, and especially to those serious commercial players committed to the long-term production and sale of fruit, is that the dynamics of supply and demand may well eventually erode value of the fruit to a point where orchard gate returns (OGR) do not meet the on-orchard cost of production and harvesting *Coupa* (2021, July 2).

I guess that is the risk any production unit runs, including manufactured goods. This 2021-22 season alone has seen growers pass up the help from contractors and take on the full workload themselves with help from family and friends. From harvesting, to pruning to irrigation maintenance.

We could debate whether there should be rules and regulations put in place for growers to comply with to ensure the industry is not saturated?

New Zealand Avocado have implemented an industry growing system known as ‘AvoGreen’ (AvoGreen, 2021) where growers are audited to make sure they are growing avocados in a responsible and sustainable way – but does this address the issue of unfettered plantings of new production?

Then perhaps we should be strongly considering the side effects of growing? How does the local community benefit? Scarcity of natural resources (water in particular)? Are current industry standards sufficient?

Is there any damage to mother nature that our new avocado infatuation has, and is there a way this is being reduced? Are we making sufficient and robust industry sustainable choices?

A debate that has polarised some Far North regions of NZ for months now has been around water supply:

Avocados are a water-intensive crop, growing them where there are limited other competing water demands is important. In places like Kenya criticism has been levelled at the fruit as “green gold causing environmental havoc”. Avocados have the potential to cause water stress and negatively impact an environment (Joyce, T, 2021).

Ultimately, it is consumer demand, be that at retail, restaurants, hospitality, institutional, various other food service, that will drive demand for any food product. Unfortunately, consumers often only see what's on the shop shelves or the plate in front of them, and are not always fully aware of the origin, or behind-the-scenes, of the food they are buying.

New Zealand consumer spending on fruit (2019, \$ million)

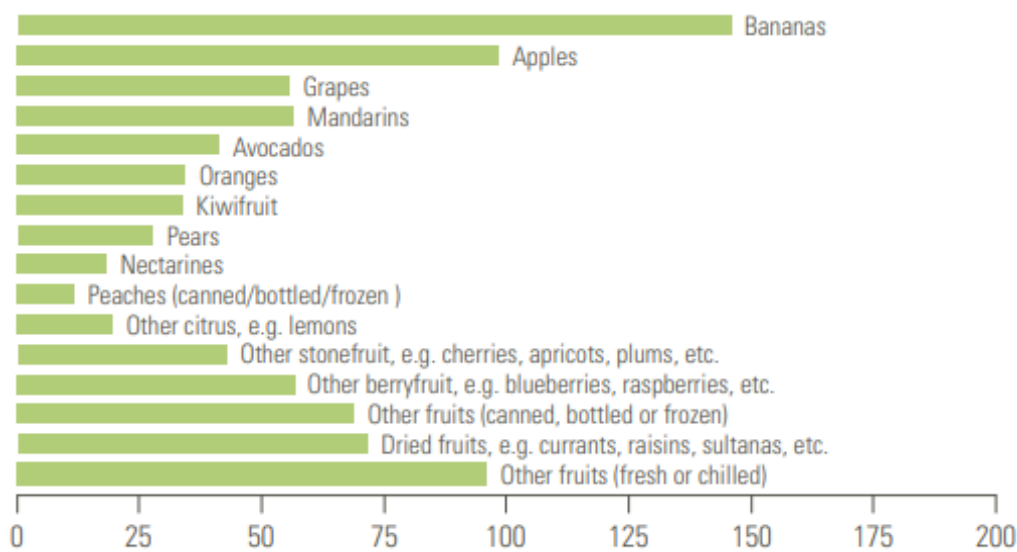


Figure 6 2019 New Zealand household consumer spending on fruit

Source: Statistics New Zealand: triennial Household Economic Survey (HES), year ending June 2019.
N.B. survey is of households only and excludes overseas visitors, people living in hotels and motels, etc., and excludes restaurants and takeout meals.

The Challenges

There are three key challenges that face New Zealand avocado production at viable commercial values:

1. NZ is geographically positioned at the bottom of the world
2. NZ does not naturally produce great avocados
3. Our cost of production along with post-harvest handling and packaging would be amongst the highest in the world

Basically, against our competitors we have no natural competitive advantages, or points of difference!

The ideal environment for the avocado tree is free draining soil and hot weather. Hence why Mexico is a top producer. Climate can have a major impact on the fruit growth which was apparent in 2019 in California. The country managed to only produce half the usual yield of avocados due to a heatwave in 2018 (Coupa, 2021).

Over the last 18-months these above 3 issues have been added to further by the various challenges a global pandemic has thrown at us:

1. Numerous and often recurring Covid lockdowns at home and abroad
2. Significant logistics and freight disruptions
3. Inability to conduct face-to-face business or attend industry expos to assist in developing markets

NZ's historical reliance on Australia as our primary export market could be described as frightening:

Unfortunately, Australia was New Zealand's largest market for avocado exports receiving more than 4.2 million (5.5kg) trays, and representing **~82%** of our export business in 2020 (Overseas Trade Export Statistics for year ended 30 June 2020)

NZ Avocado volumes to Australia were up 45% on the previous season. A combination of a short Australian domestic avocado supply (domestic production in Western Australia was depleted which allowed for more imports), and good New Zealand export pack-outs, contributed to the increase.

As for the balance of this past season's export crop, around 500,000 trays of avocados were exported to eight markets across Asia. Of those, Thailand was the largest market, followed by Taiwan and Singapore (New Zealand Avocado Annual Report 2020).

Volumes were down in some markets, where sea and air freight disruption had a major impact on New Zealand's avocado exports.

The balance of NZ's avocado exports went to a number of smaller markets such as India, and the Pacific Islands (New Zealand Avocado Annual Report 2020).

The New Zealand domestic market also delivered good value for avocados in 2020. Around 2.5 million trays worth over \$60m were sold in New Zealand. After Australia, the New Zealand market is the second largest for New Zealand avocados and has seen significant growth in the past five years, from what was a \$30m market in 2015. NZ Avocado is committed to investing in promotion in NZ to communicate the nutritional value and versatility of avocados to the NZ consumer (NZ Avocado promotions update, (2021).

Whether it is to world markets, or here at home in the NZ market, the NZ industry as a priority is committed to further developing markets for NZ fruit. In 2021 the Australian domestic supply is forecast to increase considerably, and even more-so over the coming five years and beyond.

Australian retailers who have run programmes of NZ supplied fruit for many years are under increasing pressure from parochial Australian suppliers calling on them to 'support local'. Their story is that they have quantity and continuity of supply going forward meaning there is rapidly reducing need for Australian retailers to be importing any fruit – currently that includes NZ and Chile supply (Productivity Commission 2021).

This being the case has spurred NZ exporters to rapidly review their global sales programmes with a view to reducing the percentage of crop going to Australia from 82% down to somewhere around 30-40% within a couple of seasons (Horticulture Export Structure modernised, 2016).

This ultimately is where the real challenge lies – how do we reduce reliance on the Australian market this much, at the same time developing and expanding new or alternative markets to absorb a. the additional quantity being redirected from Australia, while b. seeking to move an increasing NZ production quantity. All while competing with rapidly increasing supplies from other source countries with lower costs of production, better and lower cost logistics and shipping channels, and arguably a superior product.

Raising the point of competing Southern Hemisphere supply countries, such as Mexico, Peru, Columbia, even Kenya, Chile, and more recently Australia, who are seeking to export their own increasing crop to reduce pressure on domestic market sales, leads us to the point that these countries have very unified industry bodies, who are well versed in promoting their country, fresh produce industry, and individual product-groups. In addition, many of these countries are very well supported at both Central and Regional Government levels via various production and export policies, as well as the likes of freight subsidies (OECD & Food and Agriculture Organization of the United Nations, 2021).



Source: Fresh Plaza

NZ on the other hand is very much a support and subsidy-free country, with little cohesion within the industry. As growers, packers, exporters, the NZ produce industry is relatively fragmented when compared to many of our competitors, and the NZ avocado industry is no exception to this. Apart from limited, and contestable, NZ Avocado funds collected via various industry levies, individual shippers are left very much to their own resources to promote, advertise, and find ways to develop market loyalty and drive consumer demand for NZ avocados (ANZ Bank New Zealand Limited, 2018).

At the end of the day there is truth in the statement, that *'you can sell anything at a price'*, but the caveat around that has to be whether that sale price provides a commercially viable and sustainable orchard gate return to NZ growers.

A counter-argument commonly tabled, (ANZ Bank New Zealand Limited, 2018) is that demand for avocados continues to increase in markets across Asia, and that there are still good growth prospects in more mature avocado-eating markets. There may well be continued confidence in global markets, and in the NZ domestic market for that matter, as avocados continue to meet still-growing consumer demand. A key challenge is to continue building NZ fruit as a consumer brand, and how best we go about doing this without impacting overly on price point. We also need to be able to deliver on promises such as meeting export plans, maintain consistent and reliable supply channels and delivering premium quality New Zealand fruit to these markets during a time of continued disruption to global freight and logistics.

To summarise to this point:

- We have increasing production globally
- NZ has no natural competitive advantage, other than riding the NZ Inc clean, green, and healthy image

- NZ is distant from most major markets
- NZ has limited cost effective, competitive, reliable shipping options and service (sea and air) for the foreseeable future (3-5 years)
- Global pandemic has ravaged many markets, certainly disrupting most, impacting on ability to sell fruit at viable values
- Increasing competition predominantly from South America, and more recently Australia into virtually all of our export markets
- Fruit sales values are now vastly lower than the NZ industry has come to expect
- NZ is faced with rising on-orchard costs – compliance harvest, fertilisers, sprays, fuel, general labour, plus hefty industry commodity and promotion levies
- NZ new plantings have not reached anywhere close to production potential yet, and quantity is already having a significant impact on the NZ domestic market
- While we are increasing our plantings, our competitors are doing the same, and their freight to market component is considerably less than ours
- Our historically largest market (Australia) is rapidly becoming self-sufficient and will have little requirement to import fruit

The Solution

A bold statement.....

Sometimes you have to talk about & admit that you have a problem (with stakeholders) before you can start to work on how you are going to fix it.

Alternatively, you can live in denial.

This is not about coming across negatively but is highlighting genuine concern about existing and potential growers, as well as current and future investors, along with all of the downstream support services, both on-orchard and post-harvest, that create businesses and a lifestyle based around current expectations.

Sarcastically !!.....Fortunately to solve all of our problems we have the NZ provincial growth programme who have a masterplan for our flourishing avocado crop !!.....
 Their aim is to transform New Zealand's avocado industry into an *'efficient, well-informed, and highly capable industry, supplying premium health food to a number of high-value markets domestically and internationally* (Ministry for Primary Industries, 2020). *It will deliver best practice across the value chain, transferred through a network of innovation leaders, rural professionals and growers to achieve widespread adoption, driven by examples of success.'*

If only it was that simple!!

Or, maybe we should look back in time upon NZ at the kiwifruit industry in 1991/92..... The \$100m debt that growers had to repay, along with their industry paying growers to remove vines.

The wine grape industry went through a similar phase in their roller-coaster history where growers were paid \$10,000/acre to remove vines.

Perhaps we should have learnt from such lessons, and not run the risk of repeat behaviour.

Sustainability

At the 2021 Global Avocado Congress, delegates learnt how sustainability is key to in-market avocado growth. The theme was that there are bountiful opportunities to increase sales of avocados for suppliers who continue to invest in their businesses, the environment, and social enterprise (Global Avocado Congress Agenda, 2021).

Sustainability can have many meanings, but in this instance may need to be looked at from a different angle now. An increasing number of consumers care about how the fruit has been grown and transported. For NZ we can sell our production on our clean, green, safe-food, image, but our distance to market, and the 'food-miles' associated with this, may present an obstacle we will struggle to convince consumers as being attractive and environmentally friendly. This could be a real challenge for NZ as social compliance grows.

Reconnecting consumers with the food production system (especially those apartment dwelling 'Townies' who believe milk comes out of a bottle!) and creating more awareness about sustainability in the food sector should be part of our marketing plan.

Changing Market

While the global pandemic has delivered significant disruptions and challenges over the last 18 months, it has also created some, perhaps artificial or potentially short-lived, opportunities. Avocado sales have enjoyed impressive growth through this period, showing an increase in purchase frequency as locked-down consumers developed new habits and consumption occasions. While consumption may be high, avocados can still be regarded as somewhat niche. This offers the opportunity to drive purchase frequency, perhaps with a focus on large and ripened products, in essence turning that niche product into something more mainstream.

Figures from the USDA, ITC Trademap and the World Bank, indicate around 2.8m tonnes of avocados were traded worldwide in 2020, this is up 9% on 2019.

While a number of our world markets could be described as very mature consumers of avocados (USA and Australia are good examples), there are many more markets who are unfamiliar with the fruit, let alone know how to eat/utilise them. Avocado consumption in most European countries has steadily increased. Asia and the Sub-continent representing the world's largest population bases, have been much slower to embrace avocados, but their growing appetite for the fruit is described as showing no signs of abating.

While avocado trade into Asia is growing, consumer awareness of the product is typically described as still largely in a development phase (Jones, M. 2021) Currently global avocado consumption looks something like (FreshPlaza, 2021):

1. Asia's 3.6bn population = 0.21kg per person per annum
2. European consumption at 1.69kg per person
3. USA consumption at 3.70kg per person
4. Australia consumption at 4.67kg per person
5. Central America (the home of avocado production) is higher still

Using the USA as a country with the 2nd highest per capita consumption as an example, we could suggest that even in relatively mature markets, there is room for significant growth in avocado sales and consumption (FreshPlaza, 2021). The USA 'Hass Avocado Board' suggests that by 2025, Hass avocados will be America's most popular and desired fresh fruit (Hass Avocado Board, 2020). Demand continues upwards every year, and avocados are reportedly becoming increasingly more relevant to shoppers. Avocados have gone from an **impulse buy** to a **must-have staple** item that is on the consumer shopping list. Marketing campaigns from source countries like Mexico are extensive and very high profile. The Colombia Avocado Board claims that North America has not even come close to capturing the possibility of maximum avocado demand. The belief is that there are so many consumers who haven't experienced avocados outside of traditional usage, and there are 'heavy' users that can easily be converted to 'super-heavy' users to drive sales. Retailers in America commonly believe that today's consumers are creative and healthy, and continue to find ways to use avocados, hence their bold statement that the market is ripe for expansion, and they are preparing for the next wave in consumption (McShane, G. 2021).

Over the coming decade, trade will increasingly reflect diverging demand and supply developments among trading partners. Some regions are projected to experience large population or income-driven increases in food demand but do not necessarily have the resources for a corresponding increase in agricultural output. Moreover, socio-cultural and lifestyle-driven changes in consumption patterns are transforming the profile of demand in most regions.

Future Consumers

Utilising the right tools to convey the messages we want to get across is important. Educating and engaging with the consumer will improve knowledge, which ultimately will increase their intention for sustainable purchasing. This requires our identifying the various consumer demographics who **already** purchase, or who **may** purchase our avocados, so that we use the best mediums to connect with each. While digital technology and online platforms are an integral part of Generation Z (also known as those who were born mid-to-late 1990s as starting birth years and the early 2010s as ending birth years) daily lives, these may well not reach the Boomers within the world's many societies.

According to a study from *World Data Lab (2021)*, more than 1 billion Asian consumers will join the world's 'middle' class by 2030. Currently the middle class is made up of 3.75 billion people. Of the additional 1 billion people entering this class, India and China alone will add 750 million members. Other countries such as Indonesia and Bangladesh are also forecast to be large contributors to this growing middle class.

Generation Z is identified as already being 40% of the market, and their purchasing power is likely to increase exponentially. This and other 'younger' generations are often more adventurous in trying new or different things, and the way in which food may be prepared or consumed. From milk drinks to sushi, salads to guacamole and salsa, smashed avocado on toast to salad and cooking oils, there is strong demand globally, and the taste for avocados amongst younger generations, and in Asia at large, is only just getting started.

Supposedly, Generation Z consumers have a deep concern for the environment and tend to prioritise health. Consumers from this generation see consumption as an expression of individual identity, they are willing to pay for products that represent causes they believe in and can identify themselves with – an example of food basically becoming a fashion statement.

In line with much of this fashionable health aspect, and focussing more on younger generations, the 2021 NZ Avocado promotions programme is now underway. For this season the focus is on promoting a 'new differentiated story', **Triple Active New Zealand Avocados** (New Zealand Avocado. 2021).....

The storyline being that New Zealand avocados are grown in the right way and harvested at the right time, making them better for you and better for the world. Triple Active New Zealand Avocados contain 19 vitamins and minerals and three very special nutrients.....

1. Antioxidants to protect and repair
2. Omega-3 for heart and brain
3. Folate for safe natural baby development.

Social media has been the medium of choice to spread this message. As we know there are many questions around measuring the reach and efficacy of this as a promotional, educational, and advertising medium. The science around establishing what sales were gained from these activities is very vague.

Keeping in mind that NZ has limited resources to pour into promotion, education, and general market development, hindered further by the fragmented nature of our industry, how can we compete with other source countries chasing the same global markets.

As any product heads toward an overly mature supply situation, another angle to consider in promoting our product and developing markets, could be to 'create' points of difference.

If we have little natural advantage, could our focus move to organic production, carbon zero, further play on the clean, green, safe food aspects NZ can do so well. Are these points, and there well may be others, something we can promote that are seen to meeting the expectations of our younger consumer generations.

As one South American grower has commented 'Not everyone will be equally successful in avocado distribution in the future, but only those who treat the planet and its stakeholders with the required respect. Then we will see very interesting growth opportunities (Barker, M. 2021).

Some of our competitor countries have signed up to the UN's 17 Sustainable Development Goals and have a roadmap to become carbon neutral. Focussing on customer and consumer expectations and maximising the opportunities to win the trust of consumers, perhaps only progressive, responsible, and ethically focused suppliers who are serious and honest about the environment and sustainability will prosper.

Obviously out of all of this, to maximise the opportunities for NZ we need a well thought out roadmap of how best we promote, advertise, and grow markets. A master industry plan that encompasses many tools and angles that we can take to achieve the best for NZ.

The Questions

In considering the earlier points around global production competition, and the numerous challenges NZ faces as a production entity, the question in all of this is that when we start talking a national NZ crop going from 8m trays to 25m+ trays of avocados, are the tools in our arsenal going to be sufficient to sell such a crop?

We can make some assumptions here that maybe we can export 60%, some 15m trays of this fruit, but would these be at viable and sustainable commercial orchard gate returns (OGR) ? That would leave 10m trays to be absorbed into the NZ domestic market.

To put some perspective around values - up to the 2020/21 season a 5 years OGR expectation would have been in the NZ\$18-28 range per tray. Some new larger 'corporate' style orchard developments may have done their planning and development budgets based around a far more conservative NZ\$12-15/tray OGR. Looking at this current 2021/22 season, the NZ avocado industry is forecasting OGR's of NZ\$6-10 per tray. That is a significant drop within one season. If this is the impact, and obviously due to some additional challenges as discussed earlier, on a total national NZ crop of only ~8m trays, we have a lot of work to do if we believe we can achieve NZ\$10-12 per tray on a crop of 25m trays?

Is the 'Triple Active New Zealand Avocados' storyline going to save the day?

As far as the domestic market goes, NZ is not expecting a population increase of the size that would be needed to consume that volume (10m trays) of avocados. Based on current costs of packing, packaging, and distribution to our various markets, can we see Asia, Australia, and our other markets giving us an OGR of much more than NZ\$10 per tray when/if we have an export crop of 15m trays? These markets will not be relying on NZ for supply, and certainly will not be hastened to assist us with our sea and air freight delivery difficulties.

At some point, if NZ avocado investors are given such realistic projections, will they think twice about continuing to plant at the rates we are seeing, or will they think twice and seek other investment opportunities?

Summary

It is a fact that more avocado trees are being planted in NZ, and the potential production to-date is more than 3-fold increase on the current position (New Zealand Avocado Annual Report 2020).

Our competitor avocado producing countries are all doing the same thing.

We are seeing a collapse within 1 season of both domestic and export market sales values and OGR's.

All of our costs associated with production and getting fruit to market are rising (New Zealand Avocado Annual Report 2020).

We struggle to compete on quality, logistics and shipping cost and reliability, and industry resources required to promote and expand our markets and market-share.

We have no natural competitive advantage in growing avocados in NZ.

So where is the science and common sense to support the positive rhetoric that is actively encouraging ongoing additional plantings. From within the horticultural industry, and more specifically the NZ avocado industry, are there other agendas at play here. Is it irresponsible and foolhardy to be promoting a dream when the reality could be something quite different?

This is not to say that avocados are alone in this position. The NZ cherry industry is going through something very similar, as is the NZ pipfruit industry to a degree. Historically some of our big volume vegetable industries (buttercup squash and onions) have been through a roller-coaster ride of increasing and decreasing production levels, but these have been self-managed by a handful of large key growers, who are packers and exporters in their own right (NZ Horticulture Export Authority, 2011). Quantities grown can be adjusted annually by putting less/more seed in the ground, and professional growers have found levels at which they can sell their produce to key markets at financially viable returns. Tree crops do not have this flexibility.

Conclusions

One possible outcome of what has been discussed through this paper, could well be one that is already written in the history books. Our reliance on the Australian market has been an all too familiar theme moving from hero to zero across other NZ crops.

Strawberries and stonefruit (apricots, nectarines, plums, peaches) all found favour for many years in Australia. Over time the window for these products from NZ was gradually closed to a point where we virtually send nothing to Australia now. In actual fact, NZ typically imports Australian berryfruits through our winter months – the tables have turned. Australia is a geographically diverse country, and by moving around the various states can comfortably produce many crops year-round. Combined with the strong lobbying voice of Australian farmers and growers, their increasing production will see Australia self-sufficient in yet another crop – Avocados – in a very short few years. We should probably note here that there may be one-off events, which we have seen in previous years, where weather or other growing conditions have rendered a much-reduced Australian avocado crop. NZ has benefitted hugely from such events by meeting increased demand and receiving exceptional sales values from the market.

One other point of note countering this, is that in 2020 Chile had clearance to export commercial quantities of their avocados into Australia for the first time. Up until this time NZ was the only country with viable clearance from Australian biosecurity authorities to

be able to send avocados to Australia. So regardless of an increasing domestic Australian production, NZ's privileged market access was and is under threat from another Southern Hemisphere supplier who has many advantages over NZ as discussed earlier.

If the current increasing production development goes unchecked, the impact will not just be on new developments, but also equally on the older-established orchardists who have been part of the NZ avocado industry for many years. The trickle-down effect to all the industry support infrastructure will be significant. Many such involved industries have built their livelihood and future around this industry.

As a promoted key export driver from NZ, and an earner of foreign currency into NZ, should our avocado industry push the pause button and reflect upon just what it is we are trying to achieve here?

Should likely investors be provided with all the information, and not just the drivers which best suit a few. Or is it just the right thing to come clean around where this industry could possibly be heading as the responsible thing to do.

Do we push for some accountability and a much larger industry future plan, taking into account all of the true issues, or do we take a laissez faire approach and let what is underway run its course, and mop up the carnage later?

At what cost, and to whom?

Recommendations

We should be investing more time into seeking alternative markets, other than our closest neighbour, to grow long-term industry value. It is critically important to develop other markets to match expanding New Zealand supplies. This means growing other promising Pacific Rim markets, such as Greater China

The rapid rate of plantings will cause the fruit return to plummet unless we implement a restricted planting rate to ensure the market stays competitive and keeps new and old growers with a plausible return.

Industry bodies need to work together as one cohesive group to support growers, positively promote the industry and provide more effective solutions to the rising on-orchard costs – compliance harvest, fertilisers, sprays, fuel, general labour, plus hefty industry commodity and promotion levies. A master industry plan that encompasses many tools and angles that we can take to achieve the best for NZ.

Due to our little natural advantage of growing avocados in NZ, our focus should move to organic production, carbon zero, further play on the clean, green, safe food aspects. All which NZ can do so well to help create our point of difference. There is accumulating evidence that consumers are impacted by the perceived sustainability, and that consumers are willing to pay a premium for products that are sustainable over a non-sustainable competitor.

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