Pacific Trade Invest
NEW ZEALAND

Building a Commercial Fresh Pineapple Export Industry in Fiji:

FEASIBILITY STUDY

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Contents

List of Acronyms

ACIAR	Australian Centre for International Agricultural Research
BAF	Biosecurity Authority of Fiji
BQA	Bilateral Quarantine Arrangement
CIF	Cost, Insurance, and Freight
FCLC	Fiji Crop & Livestock Council
FJD	Fijian Dollar
FOB	Free on Board
G.A.P.	Good Agricultural Practices
GDP	Gross Domestic Product
GMA	Gross Margin Analysis
IHS	Import Health Standard
MoA	Ministry of Agriculture and Waterways (Fiji)
MD2	Millie Dillard 2
MG-03	Mayan Gold 03
MPI	Ministry for Primary Industries (NZ)
MSC	Mediterranean Shipping Company
NZD	New Zealand Dollar
ROI	Return on Investment
RQ	Ripley Queen
SC	Smooth Cayenne
SOP	Standard Operating Procedure
TLTB	iTaukei Land Trust Board
USD	U.S. Dollar

List of Measures & Conversions

ac	acre (.4 ha)
ha	hectare (2.47 ac)
kg	kilogram (.001 t)
t	tonne (metric ton)(1,000 kg)

Executive Summary

Fiji Agriculture & Pineapples

Agriculture plays a vital role in Fiji's economy, contributing 7.8% to the GDP in 2023 and employing about 30% of the workforce, primarily in rural areas. In 2022, agricultural exports made up 68% of Fiji's total domestic exports, with kava, taro, turmeric and ginger leading the way. The sector is dominated by small-scale farms, of which over 90% are under 5 hectares, and land tenure is mainly customary or leased land. Transportation costs, particularly between the two main islands and in rural areas, hinder the competitiveness of agricultural products, though infrastructure improvements in roads, air transport, and communication networks are helping address these issues.

Pineapple production in Fiji dates back to the 1860s and has experienced periods of growth and decline, often competing with sugarcane for land and resources. Driven by strong domestic demand, particularly from the tourism sector over the past forty years, pineapple remains a key crop—second only to coconut in permanent crop volume – with over 28,000 tonnes harvested in 2020, nearly all of which was sold or consumed locally.

The Western Division accounts for around 61% of Fiji's pineapple production, with Ba Province – home to Nadi, Lautoka, Ba, and Tavua – producing 95% of that output. The dominant variety is Ripley Queen, followed by Smooth Cayenne and Veimama. Pineapple is typically grown on sloping or marginal land with lower productivity. Pineapple is a resilient crop that tolerates extended dry periods and thrives in acidic soils, including those previously used for sugarcane. In Fiji, pineapple is grown entirely in open fields using low-technology methods and relies almost solely on rain-fed irrigation.

Domestically, pineapples in Fiji are primarily sold through municipal markets, roadside stalls, and directly to the tourism and hospitality sector, including hotels, restaurants, and resorts. A 2017 study estimated the tourism industry to be an FJD $1.3 million market for pineapple annually, equivalent to approximately FJD $1.8 million in 2024 based on tourism growth. However, value addition remains minimal, with only a few processors purchasing pineapples on a regular basis. Another cannery has not purchased pineapple in two years due to the purchasing price exceeding their processing cost threshold. There are a few small cottage industries selling dried or candied pineapple to the tourism market.

Farmers may sell directly to consumers, but many rely on middlemen to transport their produce to the various markets. In some areas, collection by vendors or buyers at the farm gate is also common. Formal contractual agreements between farmers and buyers are virtually non-existent in Fiji's pineapple industry. This absence is largely due to past breaches of agreements by both parties.

This study identified only one local pineapple association (in Ba), and found that the industry lacks formal oversight, advocacy, or partnership support.

The main pineapple season in Fiji runs from November to January, with over half of annual production occurring between mid-November and early January. The offseason extends from February to October. While many farmers use flower induction hormones to manage supply, the technique has not yet been refined enough to ensure consistent year-round production. As a result, pineapple prices fluctuate significantly with the season – bundles of 3-6 pineapples can sell for as little as FJD $3-$5 during the peak season, rising to FJD $20-$30 in the offseason.

Based on survey results for this study, the estimated gross margin for one acre of pineapple in Fiji is FJD $2,760.43, meaning that after covering variable costs like labour and inputs, a farmer can expect to earn around $2,760.43 per acre. The most significant costs in pineapple production are fertilizers and weedicides, which together make up 43% of total variable production costs.

The pineapple industry in Fiji faces a range of structural and operational constraints that limit its growth and competitiveness. These include a fragmented grower base, lack of uniform standards and grades, and high input and transportation costs. Farmers also contend with inadequate storage infrastructure, limited record keeping, and low levels of financial literacy. Export logistics and shipping costs further reduce margins, while the adoption of modern technology remains low. The sector also suffers from limited structured training and extension support, limited research and development specific to pineapple, ongoing labour constraints, and land tenure insecurity, all of which contribute to reduced investment and hinder efforts to scale production sustainably. Addressing these issues is critical to improving productivity, consistency, and profitability for growers within both local and export markets.

NZ Market for Pineapples

In 2024, New Zealand's total import value (CIF) of pineapples was nearly NZD $16.7 million, with about 9,000 tonnes imported annually for each of the last two years. Three countries export whole fresh pineapple to New Zealand in meaningful quantities. The Philippines leads the way, capturing 59% of market share by volume in 2024, with Ecuador holding 32% of the market, and newcomer Costa Rica with 8%. Nearly all pineapple ships to NZ by sea, with only minor monthly variation other than a notable dip in supply in September before and end-of-year surge heading into the holiday and summer season. December is by far the busiest month for pineapples in NZ.

New Zealand's supermarket industry is dominated by a duopoly of Foodstuffs and Woolworths, which control over 80% of the market and largely dictate prices, quality, and product availability. There are four major pineapple importers at the moment who supply the entirety of the supermarket chains, independent and specialty grocers, hospitality industry and smaller buyers.

Dole's 'Tropical Gold' is the dominant brand on the market. Nearly all pineapples in the New Zealand market are of the MD2 or MG-03 variety, both of which are derivatives of the Smooth Cayenne – the most significant commercial variety of the 19th and 20th centuries due to its high yield, juiciness, and suitability for both fresh consumption and canning. MD2 has been the whole, fresh pineapple standard globally since the late 1990s, as it was bred to be sweeter, more uniform in size and ripeness, and to have a longer shelf life than its predecessor.

After holding steady for well over a decade, pineapple prices increased about 30% from 2021 to 2024. Current prices generally retail between NZD $3.50-$6 per fruit, with fruits typically ranging from 1-1.5kg. During specials prices can drop below $2 per fruit.

The market trend is overwhelmingly toward whole, fresh pineapple, but with growing demand for fresh pre-cut pineapple chunks and slices that offer convenience and less mess. Dole Piñabar machines are gaining popularity in New Zealand, with around 30% of New World supermarkets featuring these self-serve slicing machines, which allow customers to insert a whole pineapple into the machine and receive a peeled, cored, and (with some models) sliced pineapple within a matter of seconds.

Data points are quite mixed when it comes to gauging consumer demand for pineapple. At the consumer level one could safely say there is unmet demand, considering New Zealand is a relatively small, somewhat isolated, temperate climate country in the Southern Pacific Ocean with limited tropical fruit production and often brief fruiting seasons.

At the importer and retail level, however, the market is highly controlled, with existing suppliers well-established, offering a nationally beloved and world-renowned brand (Dole) alongside similar alternatives of reasonable quality. A possibly indicative demand signal was Costa Rica's entry into the market in mid-2024, which did not expand the overall pineapple market but instead took market share from existing importers last year. The first four months of 2025 have followed a similar pattern, with Costa Rica holding an 8% market share and the overall market growing by just 3%, suggesting limited net demand growth.

An online consumer demand survey for this study revealed that New Zealand consumers overwhelmingly want to eat more whole, fresh pineapple. Supermarkets account for the vast majority of sales, with price, taste, and availability being significant factors. Despite the presence of a premium brand, there is a clear gap in the availability of quality pineapples in the NZ market. In fact, quality was by far the most commonly cited issue in terms of barriers to purchasing more pineapple.

Fiji Pineapple Exports to NZ

Pineapple exports from Fiji have been largely dormant since the early 1980s, when up to 120 tonnes were shipped annually to New Zealand. Attempts to revive sea freight exports in the 1990s faced challenges due to quality issues and competition from cheaper imports. Since the 2000s, only small volumes of airfreighted Ripley Queen variety pineapples have reached overseas markets, with annual exports exceeding 10 tonnes in volume only a few times. In 2023, New Zealand imported 12.7 tonnes of Fijian pineapple – the highest volume recorded in over a decade.

Fiji's current pineapple export industry is limited, with small consignments airfreighted sporadically – primarily during the November to January peak season. This trade usually involves personal or cultural networks, and are sold in niche retail channels in New Zealand, such as community markets and ethnic grocers. Three exporters are currently active, operating in Fiji's Western Division, often shipping pineapples alongside other produce like eggplant and okra. Fiji pineapples command high retail prices in New Zealand, selling between NZD $5.99 and $8.99 per kg, and sometimes even higher due to biosecurity and freight costs.

Exportation is governed by Fiji's Fruit Export and Marketing Act and regulated by the Biosecurity Authority of Fiji (BAF), requiring certified facilities, farm registrations, and phytosanitary inspections. New Zealand's revised 2024 Import Health Standard has eased varietal and maturity restrictions for pineapples, but maintains strict requirements around pest control and packaging. Despite these improvements, Fiji faces persistent challenges with New Zealand biosecurity checks: 100% of consignments are intercepted – usually for mealybugs – triggering costly lab testing and fumigation. These processes delay delivery, raise import costs significantly, and drastically reduce shelf life, making consistent airfreight exports economically unviable. Note that interception and fumigation is a regular occurrence for all NZ pineapple importers, but they are far less impacted due to their high sea freight volumes, streamlined logistics and more resilient varieties.

The high-cost structure of Fiji pineapple exports is largely driven by airfreight and post-arrival treatment in New Zealand. Current FOB prices range from FJD $2.50 to $4.00 per kg, with $3 per kg being the most common price currently, and airfreight costs approximately FJD $1.30 to $1.60 per kg. With additional import fees, and due to the small consignment size, the importer pays over NZD $6/kg before the fruit is even sold. One importer noted that selling at a profit is often impossible and, in some cases, large volumes of fruit must be discarded due to spoilage following fumigation. While sea freight offers a promising alternative – cutting shipping costs nearly in half – Fiji's current pineapple varieties are not suited to the transit times, the current fastest route being an 8 to 10-day voyage from Suva/Lautoka to Tauranga. Without addressing the biosecurity and post-harvest shelf-life challenges, Fiji's pineapple export sector is unlikely to achieve meaningful growth.

MD2 – the globally preferred export variety – was introduced to Fiji in 2024 and is currently being propagated at the Sigatoka Research Station. MD2 offers several advantages over Fiji's current export variety, Ripley Queen: superior shelf life, sea freight suitability, fumigation resilience, and broader market demand. Its successful adoption would enable higher-volume, lower-cost exports, with potential

to engage farmers across all regions of Fiji, including those currently excluded due to logistical constraints from airfreight shipments out of Nadi. If MD2 proves suitable to Fiji's growing conditions, it represents a transformative opportunity for Fiji's pineapple export sector. It will take approximately 7 years, possibly longer, to build MD2 pineapple production to a consistent, export-ready level.

Conditions for Export to NZ

Major New Zealand importers and supermarket retailers identified seven key conditions that Fiji must meet to successfully export pineapples into the mainstream market. While Fiji has potential – particularly with product differentiation – significant gaps remain in price, consistency, certification, and biosecurity standards.

- **Price Competitiveness**

  Fiji pineapples must retail at a price point competitive with current market leaders from the Philippines, Costa Rica, and Ecuador. At present, Fiji pineapples are nearly double the market rate. Importers suggest a viable landed price range is NZD $2.50 per fruit, or $25–$30 per carton – a range achievable only via sea freight, not airfreight. Without price parity, major importers will not consider the product.

- **Product Differentiation**

  Fiji must offer a clear and marketable point of difference. While the Ripley Queen variety offers unique flavour and strong appeal with specific demographics (e.g. Pacific and Asian consumers), major importers are not currently interested in this variety. However, there is interest in Fiji-grown MD2-type varieties, which, if delivered at scale, could meet both product and supply expectations. Fiji's smallholder farmer supply base also presents a potential social value branding opportunity.

- **Size and Weight Standards**

  The NZ market expects pineapples in 8 to 12 count cartons, with uniform fruit weighing 1–1.5 kg each. Ripley Queen pineapples from Fiji typically fall below this weight and show considerable variation in size, making it difficult to meet standard packaging expectations. MD2 and similar varieties are naturally better suited to these size requirements.

- **Shelf Life**

  Supermarkets require pineapples with a minimum one-week retail shelf life. Dole achieves up to two weeks due to fast and hygienic post-harvest handling and shipping. Ecuadorian and Costa Rican pineapples generally have a one-week shelf life due to the much longer transit time. Currently, fumigation of Fiji pineapples reduces retail shelf life to half a week in most cases. If biosecurity clearance is improved, airfreighted Ripley Queen pineapples could meet the one-week minimum, but this is not guaranteed under current conditions. MD2 pineapples grown and shipped from Fiji can easily achieve a two-week shelf life, making them more attractive than South and Central American imports.

- **Consistent Supply**

  Importers require year-round, reliable, and frequent delivery of high-quality pineapples. Top suppliers to NZ all ship multiple 40' containers on a weekly or fortnightly basis. Fiji could start smaller (e.g. one 20' container every fortnight), and scale from there. This demands improvements in flowering hormone control, productivity and post-harvest processes. Previous efforts that prioritized quantity at the expense of quality have failed. Consistency of supply is far more critical than quantity supplied in order to meet supermarket program demands. An online survey targeting Fiji's tourism industry revealed the local pineapple industry still struggles with supply consistency, even in domestic markets.

- **GlobalG.A.P. Certification**

  Both major importers and supermarket chains require GlobalG.A.P or equivalent certification for fresh produce. This farm-level certification sets standards for food safety, environmental sustainability, and worker welfare. Only one Fijian farm (non-pineapple) is currently G.A.P.-certified. For most growers, certification is cost-prohibitive and administratively burdensome. A group certification model or a more context-appropriate local standard may be a more achievable solution.

- **Biosecurity Clearance**

  Airfreight pineapples must consistently clear NZ's MPI inspections pest-free to avoid delays, reduced shelf-life, and – most critically – high additional costs. While current pre-export practices in Fiji fall short of the rigorous washing and waxing systems used by major exporters like Dole, extensive pre- or post-harvest treatments are not necessarily the answer. As evidence by the major players, despite robust systems, interception and fumigation still occurs regularly. A bilateral effort, supported by targeted industry lobbying, may be the most cost-effective and sustainable solution. Without this, the only viable mitigation may be a high-volume MD2 sea freight program that can better absorb the cost of interception.

To be clear, no major importers or supermarkets are interested in an import program with current Fiji pineapple varieties. Several expressed keen interest in a program with an export-bred variety like MD2. Several current Fiji pineapple importers indicated willingness to continue – even expand – imports, contingent on resolving the high-cost biosecurity issue.

Realistic Market Opportunities & Comparative Benchmarking

Based on this study's findings, there are two realistic paths forward for Fiji pineapple:

1. Improve the air freight model with the Ripley Queen variety, and/or
2. Invest in full-scale MD2 production, aiming for sea freight exports within seven years.

Moderate success can be achieved with air-freighted Ripley Queen pineapples, but this must be at increased volumes and a lower cost per kilogram – which is critically dependent on a biosecurity solution and improved production practices, namely hormone application for consistent year-round fruiting. The Fiji Red Papaya has proven large airfreight quantities can be successful in the New Zealand market, and islands such as Mauritius and Reunion have proven the ability for Queen-variety pineapples to have success as a niche fruit in EU markets, particularly France. An MD2 program will require similar hormone application and production practice improvements to be viable, in addition to its mass propagation efforts over the next several years. There is much that Fiji could learn from the Dominican Republic's attempts at MD2 conversion over the last several decades. Across all relevant benchmarks, similar themes emerged, namely the importance of cooperatives and associations to the success of the industry, substantial government and donor support, and rigorous quality standards.

With a highly successful airfreight program, Fiji could potentially capture 1-2% of market share in NZ. An MD2 sea freight program sending one 20' reefer a week would capture around 5% of market share – which would also be considered an immense success.

Fiji pineapple's export marketing strategy should emphasize its key points of differentiation, namely:

- Varietal alternative (in the case of Ripley Queen)
- Superior taste, ripeness and freshness
- Socio-economic impact of supporting small farmers vs. large corporations
- The 'Fiji' brand
- Lower food miles and carbon footprint

Fiji's pineapple export industry faces several key risks that could impact its competitiveness in the New Zealand market. These include the more lucrative and less demanding domestic market, which may discourage farmer commitment to export initiatives. Other challenges include the non-adoption of year-round fruiting practices, extreme weather events, pests, and inconsistent yields or fruit quality. Structural issues like insecure land tenure and weak adherence to post-harvest quality standards also pose risks. In particular, continued biosecurity interception at New Zealand's border undermines airfreight viability unless resolved, possibly through renewed bilateral negotiations.

Recommendations & Financial Projections

To increase Fiji's market share of pineapples in New Zealand, it is essential to align the interests of farmers, exporters, and buyers while addressing key constraints across the value chain. Farmers are willing to scale up if demand is reliable, while exporters face risks from border interceptions and prefer standardized fruit sizes to improve marketability. Fiji cannot compete on price with large-scale suppliers, but it can differentiate on taste, freshness, and ethical sourcing. A pragmatic, low-cost approach is recommended—intervening only where necessary to unlock progress, safeguard viability, and preserve existing domestic market efficiencies. Any increase in production or coordination costs must be offset by gains in efficiency or productivity, given Fiji's already high price point. This study recommends pursuing both enhancement of the Ripley Queen airfreight program and mass propagation of MD2 for a future sea freight program, consolidated into a hypothetical *Fiji Pineapple Project* which consists of seven recommendations across four thematic areas:

Theme	Recommendation
1. Industry Governance and Institutional Strengthening	
1.1	Formalize the pineapple industry through the formation of a national association, regional cooperatives, and farmer clusters
2. Production Systems and Farm-Level Capacity	
2.1	Strengthen on-farm production systems to enable year-round supply, higher yields, and improved quality
2.2	Support farmers and cooperatives to achieve G.A.P. certification
2.3	Expand pineapple research and enhance extension services aligned with geographic commercial production zones
3. Market Access and Logistics	
3.1	Resolve biosecurity issues through comprehensive pest management and bilateral discussion
3.2	Create a Standard Operating Procedure for the airfreight of Ripley Queen pineapple
4. Enabling Environment and Incentives	
4.1	Consider strategic incentives to support the viability and long-term growth of the pineapple export industry

A comprehensive *Fiji Pineapple Project* incorporating all of the recommendations above is estimated to cost FJD $4.2 million, with funding contributions comprising approximately $1.3 million from the Government of Fiji, $2.9 million from donors, and $172,450 from other sources such as initial revenues generated through cooperative activities. Overall, the project would be 27% government-funded, 69% donor-funded, and 4% from other funds. The Ripley Queen airfreight program is expected to return the invested funds within five years. The MD2 sea freight program, on the other hand, will take about nine years to achieve a return, as it won't be export-ready until around year 7. However, once operational, it will quickly recoup its costs thereafter.

This initiative would generate significant social and economic benefits for Fiji. The Ripley Queen airfreight program, with annual revenues into Fiji of approximately $596,960, creates 12–17 jobs in addition to farmer and exporter profits. The MD2 sea freight program, generating around $1.59 million in export revenue, creates 32–41 jobs. A combined program, capturing 7.44% of the New Zealand market, would generate $2.26 million in total revenues, creating 42–57 jobs across the value chain. These programs provide meaningful employment opportunities, particularly for women and youth, in roles such as grading, packing, logistics, and digital functions, fostering inclusion within Fiji's agricultural sector. The local economic impact is substantial, with the majority of revenues remaining within Fiji's economy, strengthening the nation's position in the global fresh produce market.

FJ$4.2m
estimated cost of pineapple project

42-57
new job created

7
the # of steps to meet NZ supermarket conditions

Study Background

Fiji's pineapple industry holds significant untapped potential to contribute meaningfully to both the domestic economy and regional trade, particularly in fresh fruit exports to New Zealand. In recent years, fresh pineapples have gained growing consumer interest in New Zealand's supermarket trade, yet Fiji's presence in this space remains extremely limited. Recognising the opportunity to develop a more competitive and structured pineapple export sector, Pacific Trade Invest NZ commissioned this study to assess the feasibility of a commercial scale fresh pineapple export industry in Fiji.

Objectives

The study aims to capture a comprehensive picture of Fiji's existing pineapple farming systems, with a particular focus on the supply of fresh, whole pineapples for the New Zealand supermarket trade. It is designed to support national efforts to build a commercially viable, export-oriented pineapple value chain that delivers inclusive economic benefits – especially for smallholder farmers, women, and youth – while addressing infrastructure, regulatory, and market challenges.

Specifically, the study seeks to:

- Assess Fiji's current capacity for fresh pineapple production for both domestic consumption and export;
- Outline a five-year development plan to increase competitiveness and expand commercial-scale farming in priority areas;
- Recommend practical strategies to capture 1–5% market share for Fiji's fresh pineapple exports to New Zealand, with tailored outcomes based on different timelines, pineapple varieties, and logistics strategies;
- Identify investment opportunities, infrastructure gaps, and policy measures that would enable sustainable growth of the sector;
- Explore the potential for a standard operating procedure to guide quality, production, and export standards across the sector.

This study includes a value chain analysis, covering agricultural practices, input use, post-harvest handling, infrastructure, logistics, export readiness, and market dynamics. It also incorporates stakeholder consultations across Fiji and New Zealand, and provides insight into cartons and container volumes, retail pricing, and value-add potential.

The overarching goal is to support the transformation of Fiji's pineapple industry into a resilient and competitive export sector – one capable of consistently meeting importer requirements while delivering broad-based economic gains.

Methodology

Stakeholder Consultations – Research for this study included consultations with a wide range of public and private sector stakeholders in both Fiji and New Zealand. These included government officials, exporters, importers, supermarkets, logistics companies, development partners, subject matter experts, and others. Most consultations in Fiji were conducted in person, while all New Zealand consultations were held virtually.

In-person Surveys – In-depth, questionnaire-based surveys were conducted with both pineapple farmers and buyers across Fiji. Farmer survey data was particularly valuable for basic financial analysis to estimate operational costs and margins.

Online Surveys – Two online surveys were undertaken: one to assess consumer demand for pineapples in New Zealand, and another to gather feedback from Fiji's tourism industry on satisfaction with locally grown pineapples. The latter serves as a useful proxy for international market expectations.

Secondary Information – Secondary data was sourced through extensive online research and from resources at the Fiji National University's Koronivia Campus Library. Research for this study took place from December 2024 to May 2025.

Report Structure

This report is structured to move from broad contextual information to detailed market analysis and actionable recommendations.

Section 1 provides an overview of the role of agriculture in Fiji's economy, including land tenure, farm structure, and infrastructure—offering important context for understanding the challenges and opportunities facing the pineapple sector.

Section 2 examines the current state of Fiji's pineapple industry, from production systems and domestic markets to insights from farmer and buyer surveys. It also includes value chain mapping and basic financial analysis to assess gross margins.

Section 3 focuses on the New Zealand market for fresh pineapples, covering import volumes, key players, supermarket dynamics, consumer trends, and demand patterns.

Section 4 provides a comprehensive analysis of Fiji's current position in the New Zealand market. It examines export volumes, regulatory requirements, key challenges, cost structures, varietal suitability, and the specific conditions necessary to expand exports to New Zealand.

Section 5 explores realistic market opportunities for Fiji pineapples in New Zealand. It benchmarks comparable commodities and small island exporting countries, outlines potential market share scenarios, and proposes a targeted marketing strategy. The section concludes with a risk analysis related to scaling up exports.

Finally, **Section 6** outlines key recommendations for developing a viable pineapple export sector, including institutional support, marketing strategy, and financial projections required to scale up to commercial export levels.

1. Agriculture in the Fijian Economy

1.1. Contribution to the Economy

In 2023, agriculture accounted for 7.8% (FJD $841.3 million) of Fiji's real GDP, with the non-sugar sector contributing 7% (FJD $759.3 million). Agriculture's share of overall real GDP has fluctuated between 6% and 9% over the past decade. Non-sugar agriculture has gradually but steadily increased, rising from 84% of total agricultural output in 2014 to 90% in 2023.[1] The agricultural sector employs about 30% of the workforce, particularly in rural areas, where approximately 40% of the population resides. Since the mid-1990s, the contribution of agriculture to GDP has declined significantly due to increased urbanization, the growth of tourism, emigration, and more recently, the Pacific Australia Labour Mobility (PALM) scheme, which allows Australian businesses to hire workers from Pacific Island countries, thereby reducing the local labour pool available for agricultural activities.

In 2022, agricultural exports accounted for 68% (FJD $927.5 million) of the total domestic exports with kava, taro, turmeric, ginger and other vegetables with a combined share of 87% of the total value of fresh/chilled crop and livestock exports. The major export destinations for fresh/chilled produce were the United States, New Zealand, Australia, neighbouring Pacific Island countries, Canada, Hawaii, Germany and the United Kingdom.[2]

1.2. Farm Structure and Land Tenure

Agriculture in Fiji is dominated by small farms with a large number of farms below 1ha in size, mostly used for subsistence farming and a very small number of large commercial farms over 100 hectares (ha). Table 1 summarizes the size of land holdings in Fiji.[3]

1 Base year 2014 - https://www.agriculture.gov.fj/documents/stats/2023%20Agriculture%20Real%20GDP%20Brief%20Summary.pdf

2 2022 Agriculture Annual Trade Report https://www.agriculture.gov.fj/documents/stats/2022%20AGRICULTURE%20ANNUAL%20TRADE%20REPORT.pdf

3 2020 Fiji Agriculture Census Report https://www.agriculture.gov.fj/censusrep.php

Table 1: Number of households with farm land by land size and division

Division	Total (ha)	<1 ha	1 - 3 ha	3 - 5 ha	5 - 10 ha	10 - 20 ha	20 - 50 ha	50 - 100 ha	>100 ha
Fiji (total)	68, 424	44, 475	14,383	4,255	3,000	1,355	598	145	213
Central	17,426	11,967	3,894	859	327	166	122	53	38
Eastern	5,864	4,286	1,446	76	29	9	9	1	8
Western	25,435	17,566	4,202	1,786	1,305	342	121	44	69
Northern	19,699	10,656	4,841	1,534	1,339	838	346	47	98

As depicted in Table 1 above, agriculture in Fiji is dominated by small holder farmers (land holdings of <1 - 3 ha) who comprise 86% of the total farming households in Fiji. More than half of the total farming land is made up of land holdings less than 5 ha representing 92.2% of the farming households in Fiji. Despite having a more than substantial land mass, one of the biggest impediments to agricultural development is access to land.

The land tenure in Fiji is predominantly customary and a significant percentage of this land is leased. There are native reserve lands that cannot be leased and are used by the traditional landowners. Fiji land tenure falls broadly under the following categories:

1. **Freehold Land**: can be bought and sold, with full ownership transferred to the buyer
2. **Lease from State**: state-owned lands which can be leased; ownership is not transferred
3. **iTaukei Lease/Native Lease**: lands which are leased from the iTaukei Lands Trust Board (TLTB), formerly the Native Land Trust Board (NLTB), which act on behalf of traditional owners. Ownership cannot be transferred.
4. **Traditional Ownership**: These are lands belonging to the *Mataqali, Tokatoka, Yavusa, Kovukovu* and cannot be leased out. However, members of the traditional land-owning unit can utilize the land.

Other forms of land lease exist and these include:

1. **Occupying Land with Informal Arrangement**: the lessee can make an informal arrangement to use the land by approaching the traditional land owner who will then demarcate the area. Sometimes, these are given out on yearly rentals or traditional gifts.
2. **Occupying Land without any Legal Arrangement**: these can be deemed as people squatting on the land and utilizing the land to grow crops, etc. Generally, these lands have no traditional owners and can be part of state land without title.

Table 2: Number of Households with Farm Land by Type of Land tenure and Land Area

Type of Land Tenure	No. of Households	Area of Farm Land (ha)	% share
Freehold	6,772	27,005	13.90%
Lease from State	3,770	11,618	6.00%
iTaukei/Native Lease	9,598	16,198	23.70%
Traditional ownership (Mataqali, Tokatoka, Yavusa, Kovukovu)	41,556	105,388	54.10%
Occupy land with Informal Arrangement	7,063	4,129	2.10%
Occupy without any Legal Arrangement	300	348	0.20%
Other	50	82	0.05%

As depicted in Table 2, the total area of farm lands in Fiji amounts to 194,769 ha with the bulk of the land under customary ownership.[1] In most cases, farms on native land leases have 30-year lease terms and the leases may not be renewed after this term with the land reverting back to the local *mataqali* (clan). Often the land is left idle after the non-renewal of leases.

Access to prime agricultural land is much sought after by all ethnic groups in Fiji and freehold land is scarce in Fiji which is reflected in its high price. Native Reserve Land can be leased to Fijians acting as trustees on behalf of the owners and this arrangement has been used for tourism and forestry ventures.[2]

Fiji's dual economy system is very much displayed in the use of *mataqali* land in that, much activity is geared towards subsistence farming and for generating income from a few cash crops without financial rental payments. Some chiefs prefer profits to be shared by the community and are unwilling for villages to personalize land for themselves.[3]

1.3. Physical Infrastructure and Transport

Fiji's road and transport infrastructure is well developed with access to most remote farming areas, such infrastructure comprising roads, jetties and wharves, airfields, telecommunications including mobile networks, electricity and water supply. Rural development has ensured that farmers and those living in rural areas have access to electricity either connected to the grid or through solar units, while the water supply is from community dams and pipelines or through boreholes. The 2020 agriculture census revealed that 63.3% of farmers had mobile phones.

Most large-scale farmers have their own transportation, and bus services operate in rural areas. However, transport whether road or seas, is costly, particularly when moving produce between the two large islands, Viti Levu and Vanua Levu.

1 2020 Fiji Agriculture Census Report https://www.agriculture.gov.fj/census rep.php
2 Veit 2009 https://www.fao.org/fileadmin/templates/est/AAACP/pacific/FAO_AAACP_Paper_Series_No_7_1_.pdf
3 Veit 2009 https://www.fao.org/fileadmin/templates/est/AAACP/pacific/FAO_AAACP_Paper_Series_No_7_1_.pdf

The shelf life or freshness of the produce is affected the longer it takes to transport said produce to its final destination. This has caused several agricultural ventures to fail, as high transportation costs make competitive pricing unfeasible.

Air transport is vital for accessing export markets with the main port for air shipments being Nadi, Viti Levu. Infrastructure is being developed at both the Nausori and Labasa airports for expanded services which may open up export opportunities from these hubs if freight charges are feasible. Courier companies also exist which freight courier to many of the major islands and can be used for marketing and transporting of agricultural inputs and produce.

2. Pineapple Production in Fiji

2.1. Historical Background

The history of pineapple cultivation in Fiji may go back as far as the 18th century when inter-island trade was rife between Tonga and Fiji Islands. However, the first recorded case of pineapple cultivation was in 1863, where a farmer named Swanston was cultivating pineapples imported from Melbourne, Australia in his garden.[1] By 1870, pineapple was already established as a crop in Levuka and exported by steamer ships berthing in Levuka. Fiji colony pineapples were claimed to be one of the best among the British Colonies due to the soil and climatic conditions claimed to be very favourable for pineapple cultivation.

The colonial administration recognized bananas and pineapples as priority crops with pineapple farmers receiving various levels of government support.[2] By 1911, 31.6 ha of land in Fiji were under pineapple cultivation.[3] In 1926, the Fiji Pineapple Company, a venture between the Fiji Government and Dominion Canners Ltd, was formed to can pineapples in Levuka. Garick, 1930, mentioned that "The soil on Ovalau has been and is producing a pineapple which when canned has been pronounced by experts to be equal to if not actually superior to the highest grade of canned pineapple for sale on the world's market."

1 Stokes, 1969 in Prasad, 2024 https://research.usc.edu.au/esploro/outputs/doctoral/Postharvest-loss-of-pineapples-and-its/991007798702621
2 Surridge, 1931 in Prasad, 2024
3 https://husfarm.com/statistic/production/pineapples-in-fiji

The 1920s and 1930s saw an increase in cultivation of pineapple with the Hawaiian Pineapple Company's Scheme in Vanua Levu, West Coast Pines in Nadi, and the takeover by Colonial Sugar Refinery (CSR) of West Coast Pines in 1936 to commence their own cannery operations in Lautoka.[1] Pineapples were harvested twice a year, in June and in December for canning in Lautoka. The 1930's also saw renewed interest by the Fiji Department of Agriculture in pineapple research including varieties with the CSR promoting the Smooth Cayenne variety with its suitability for canning, and the Department of Agriculture promoting the Ripley Queen variety for fresh exports with better eating quality and longer post-harvest shelf life.[2]

Figure 1: Labourers harvesting and planting suckers in Lautoka circa 1940 (PC: Australia National University)

The 1950s saw CSR take the lead to reduce pineapple yield loss through improved post-harvest handling practices and recommendations for harvesting. Post-harvest handling and packaging for exports were developed by the Ministry of Agriculture.[3] The 1950s also saw the closure of the CSR operated Lautoka cannery in 1955 due to major areas under pineapple cultivation giving way to the construction of the Nadi International Airport.

The 1960s saw a renewed interest in soil nutrition, genetics, and cultivars, and it was determined that Fiji pineapples were suitable for "Talasiga" type soil, which is common throughout Vanua Levu and described as highly erodible, infertile, dusky red soils.[4] The late 1960s pineapple was introduced to new areas such as Ba, Ra, Waidradra and Lomaivuna.

Fiji gained independence from Britain in the 1970s and while pineapples continued to be an important national crop, there was little research done on pineapple at this time. Government development plans at the time sought to promote fruits including pineapples to meet local and export demand with an increase in areas under pineapple production in 1976 focusing on Vanua Levu to utilize the Batiri Citrus juice facility.[5]

The 1980s saw further growth of the industry with increased fresh pineapples exported to New Zealand, with such exports amounting to approximately 120 tonnes annually.[6] However, by the mid-80s there were only a small volume of pineapples exported to NZ.

Attempts were made to revive pineapple exports to New Zealand in the 1990s, but these attempts were short-lived, aggravated by poor quality and supply constraints. These efforts also coincided with Dole entering the NZ market with pineapples from the Philippines at much reduced and competitive pricing.[7]

Pineapples continued to be an important commodity into the 2000s, almost entirely on the domestic market. The 2009 agriculture census identified 914 pineapple farmers with 445 ha planted and 300 ha bearing fruit. Total harvested was 2,829t, of which 2,349t was sold. The 2020 Agriculture Census identifies 1,503 households planting pineapple, harvesting 28,629 metric tonnes from 715.72 ha with a value of FJD $46,332,430.[8]

2.2. Current State of the Pineapple Industry

Pineapple is the second highest proportion of volume harvested (30.8%) after coconut (38.1%) of permanent crops harvested in Fiji,[9] with an estimated annual harvest of 28,629 tonnes. over 99% of it sold or consumed domestically. As a contributor to real GDP, pineapple production fluctuated during the decade; however, the overall trend is positive, with a modest but steady compound annual growth of around 2.9% (from FJD $4.4 million in 2014 to $5.7 million in 2023).[10] Table 3 below highlights the pineapple crop by division and households planting pineapples with the areas, volume and value of production in Fiji.[11]

1 Prasad 2024
2 Surridge, 1931 in Prasad, 2024
3 Neild, 1955 in Prasad, 2024
4 https://www.fao.org/4/ag120e/ag120e20.htm
5 FAJ, 1976 in Prasad, 2024
6 McGregor 2017
7 Tubuna et.al. 2006 https://www.deakin.edu.au/__data/assets/pdf_file/0009/404766/2006-03eco.pdf
8 2020 Fiji Agriculture Census Report https://www.agriculture.gov.fj/census rep.php. NOTE data discrepancy explained in Table 5.
9 2020 Fiji Agriculture Census Report https://www.agriculture.gov.fj/census rep.php
10 Base year 2014 - https://www.agriculture.gov.fj/documents/stats/2023%20Agriculture%20Real%20GDP%20Brief%20Summary.pdf
11 2020 Fiji Agriculture Census Report https://www.agriculture.gov.fj/census rep.php

Table 3: Pineapple Statistics per 2020 Agriculture Census

Description	Number of Households	Number of plants planted	Area planted (ha)	Area Harvested (ha)	Volume Harvested (t)	Value of Harvest (FJD'000)
Fiji	1,503	8,556,292	233.72	715.72	28,629.00	46,332.40
Central Division	330	2,439,614	66.64	51.77	2,070.60	2,562.10
Eastern Division	202	50,398	1.38	1.90	76.00	132.90
Northern Division	626	787,289	21.51	36.83	1,473.30	2,525.90
Western Division	345	5,278,991	144.20	625.23	25,009.10	41,111.60

As depicted from Table 3, a total of 1,503 households in Fiji cultivate pineapple with 41.7% of the farmers growing pineapples in the Northern Division. Based on the data from the census, the following summaries can be made:

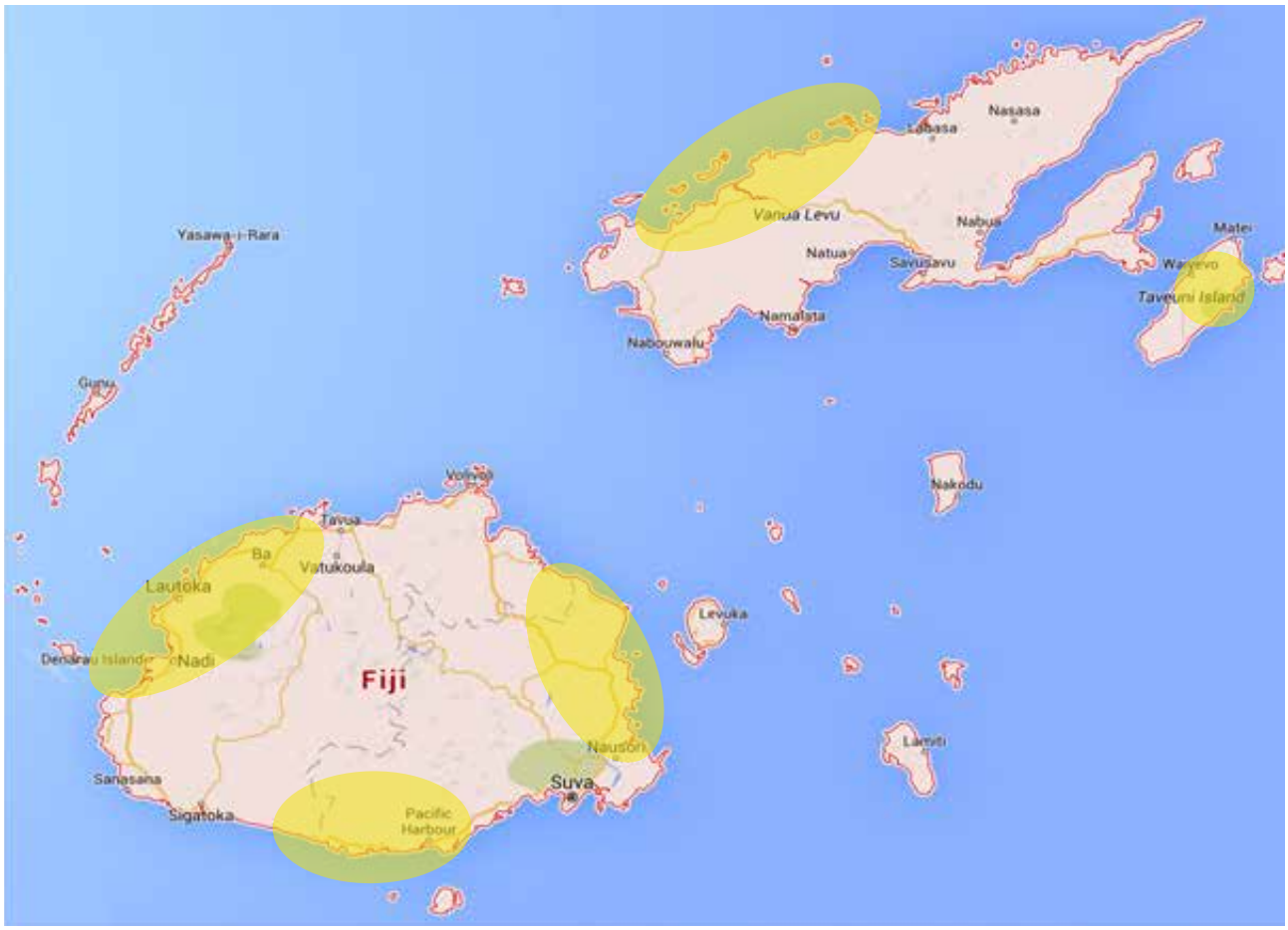
Table 4: Average Pineapple Farm Size based on Division

Description	Key Locations	Average Farm Size (ha)	Average Farm Size (ac)
Fiji		0.632	1.560
Central Division	Suva, Nausori, Korovou	0.3588	0.886
Eastern Division	Kadavu, Lau, Lomaiviti	0.0162	0.040
Northern Division	Vanua Levu, Taveuni	0.0932	0.230
Western Division	Rakiraki, Tavua, Ba, Lautoka, Nadi, Sigatoka	2.2302	5.509

Based on Table 4, the average pineapple landholding is highest in the Western Division at 2.2 hectares (5.51 acres), although only 30% of households are cultivating pineapples there. This contrasts with the Northern Division, where 41.7% of Fiji's pineapple farmers reside, but the average landholding under pineapple cultivation is much smaller at 0.09 hectares (0.23 acres).

The map below highlights the major pineapple growing regions in Fiji.

Figure 2: Map of Fiji with major pineapple growing regions highlighted



There are, however, vast discrepancies between various statistical publications regarding production volumes and yield, as shown in Table 5.

Table 5: Discrepancies in various statistical publications

Source	Annual Production (t)	Annual Yield (t/ha)
2009 Agriculture Census	2,829	9.4
2020 Agriculture Census	28,629	40
2021 Key Statistics on Fiji Agriculture Sector[1] (2019-2021 average)	7,000	
Fiji Agriculture Online Data Library[2] (2023 data)	8,479	
Prasad 2024 Study		30
Farmer Survey for this report		25
FAOSTAT (2023 data)	8,591	7

Such discrepancies make data analysis very challenging. Table 6 summarizes the production of pineapple in Fiji from 2017-2023 using FAOSTAT.

1 https://www.agriculture.gov.fj/documents/stats/2021%20Annual%20Key%20Statistics%20on%20Fiji%20Agriculture%20Sector%20(final%202023).pdf
2 Fiji Agriculture Online Data Library

Table 6: Pineapple production from 2017 – 2023[1]

Description	2017	2018	2019	2020	2021	2022	2023
Area (ha)	530	601	705	1060	907	1013	1227
Production (tons)	5,906	6,008	7,158	7,423	6,350	7,393	8,591
Yield (kg/ha)	11,143	9,997	10,153	7,000	7,000	7,300	7,000

Based on Table 6, the areas under production from 2017 (following TC Winston) increased by 131%, while production increased by 45%. Average yields declined by 37%. Figure 3 below captures this trend visually.

Figure 3: Pineapple production, yield and area under production from 2017 – 2023

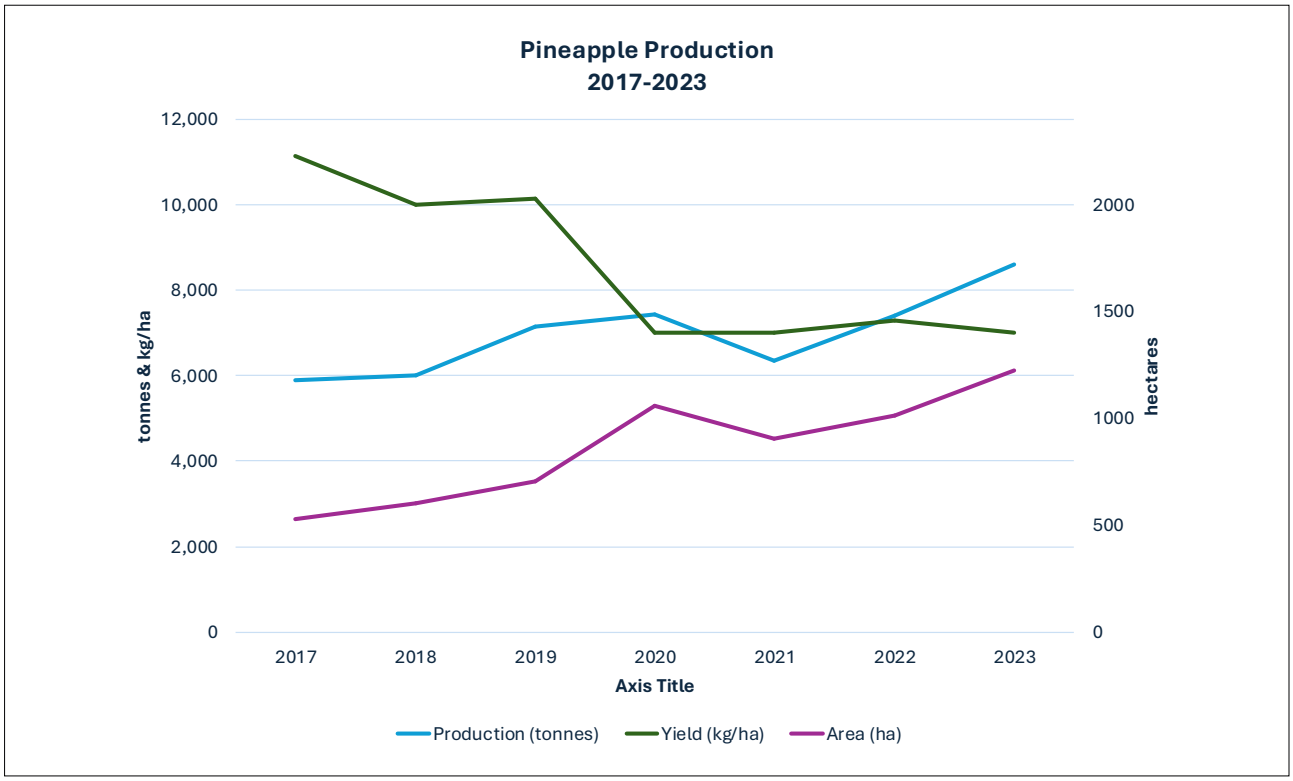


Table 7 depicts percentage change of pineapple production from 2017 – 2023 based on data from Table 6.

Table 7: Percentage change in Area, Production and Yield of Pineapples in Fiji from 2017-2023

Description	Area		Production		Yield	
	(ha)	% change	(t)	% change	(kg/ha)	% change
2017	530		5,906		11,143	
2018	601	13%	6,008	1.73%	9,997	(10.3%)
2019	705	17%	7,158	19.14%	10,153	1.6%
2020	1060	50%	7,423	3.70%	7,000	(31.1%)
2021	907	(14%)	6,350	(14.46%)	7,000	0%
2022	1013	11%	7,393	16.42%	7,300	4.3%
2023	1227	21%	8,591	(16.21%)	7,000	(4.1%)

1 FAOSTAT

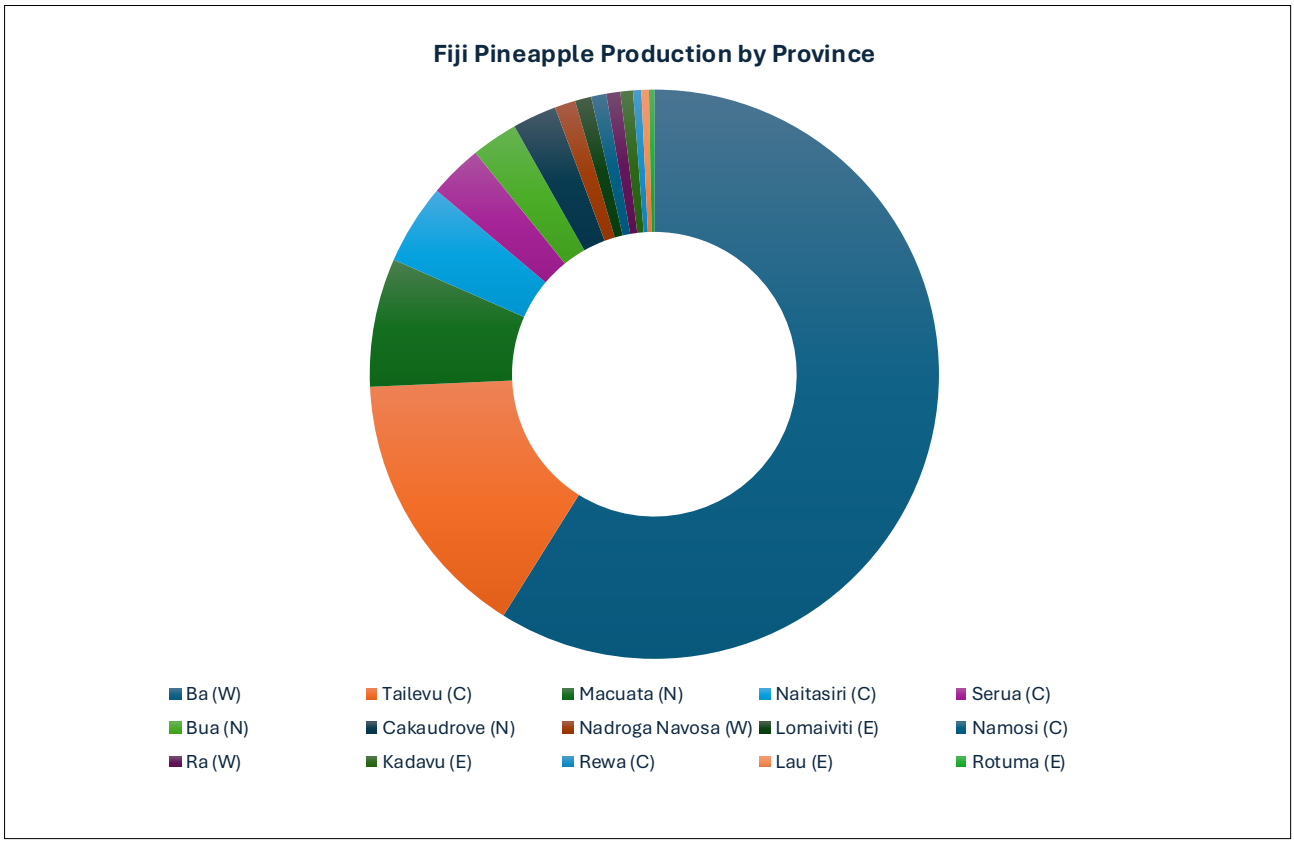
The period 2017 to 2023 covers two major anomalies affecting pineapple production in Fiji. The first is the impact of Tropical Cyclone Winston in 2016 and the subsequent dry weather spell in 2017. The second is the COVID-19 pandemic from 2020 – 2022. This period shows erratic changes in pineapple production in Fiji with a decline in both areas cultivated as well as production.

2.3. Pineapple Production

Based on an average of data from the 2020 Agriculture Census and the Fiji Online Agriculture Statistics Data Library, the Western Division accounts for approximately 61% of Fiji's total pineapple production, while the Central Division contributes around 24%, the Northern Division about 12.5%, and the Eastern Division approximately 2.5%. Ba Province – which includes Nadi, Lautoka, Ba, and Tavua – alone produces about 59% of all pineapples in the country, as shown in the chart below, which breaks down production by province.[1]

1 2020 Fiji Agriculture Census Report & Fiji Online Agriculture Statistics Data Library

Figure 4: Fiji Pineapple Production by Province



Based on the farmer survey conducted for this study, the average age of male farmers was 49.3 years and the average years of cultivating pineapples was 14.8 years. This means that farmers have considerable experience in pineapple cultivation in Fiji. 54% of the farmers were cultivating pineapple on land leased from the TLTB, and 23% of the farms were located on state/crown leased lands. Production practices vary between smallholder land holdings which are largely classed as subsistence and semi-subsistence and large commercial holdings which use considerably more inputs in their production process.

Generally, pineapple in Fiji is cultivated on marginal or less productive land, often on sloping terrain. The pineapple is a hardy crop which can withstand long periods of dry weather with little or no precipitation, and grows well in acidic soils, including post-sugar cane soils. Annex 2 shows the package of practices as outlined by the Ministry of Agriculture, an old package of practice followed during the period of colonialism, current farmers' practices and recommended practices. 84% of the pineapple farms surveyed were situated on gentle slopes with the double row planting method preferred.

Production systems for pineapple vary among farmers. Most of the farmers gained knowledge through experience (trial and error) and follow their own routine. The larger commercial farmers have had considerable experience and keep their production techniques closely guarded.

Currently, there are two main commercial varieties cultivated in Fiji: Smooth Cayenne and Ripley Queen and a less common third variety – Veimama. Some old plantations are said to have the gray and maroon variety.[1] According to stakeholders,[2] there are old cultivars along the Nausori Highlands and most of the varieties generally grown are of F3 and F4 generations, hence the smaller fruit sizes. 95% of the farmers surveyed were cultivating Ripley Queen, which has been the export variety of choice the last three decades, albeit in very small airfreight quantities.

Figure 5: Ripley Queen (L) and Smooth Cayenne (R) (PC: MoA; Dan Russell)

Fiji has a main harvesting season and a mini harvesting season, although some farmers also produce off-season pineapples through the application of hormones to induce flowering. The main season runs from November to the end of January, with more than half of the annual production occurring between mid-November and early January. The mini season occurs from June to the end of July, with a smaller flush of flowering and fruiting compared to the main season. The off-season spans from February to May and from August to October. Peak harvest takes place annually between November and January.

During the off-season, large commercial farmers often apply hormones to induce flowering, whereas most smaller farmers rely on natural, seasonal production and do not use hormones. Some farmers report that pineapples fruit year-round on their farms without hormone use. This was observed in the Ba area, where pineapples were developing in February. The Director of Research at the Ministry of Agriculture also emphasized this trend, stating that "pineapple is no longer considered a seasonal crop in Fiji."

This, however, does not alleviate the need for hormone application, which remains critical for ensuring consistent and predictable off-season supply—especially for meeting commercial production targets.

Figure 6: Double row cropping at Vulagi Settlement near Natovi

Pineapple production in Fiji relies on low technology methods with 100% of the crop grown in open fields using rain fed irrigation. While large farmers do not irrigate their crops, small scale farmers tend to irrigate during dry spells. Pineapples are not the sole crops grown on these farms as 92% of the farmers also cultivate other crops such as sugarcane, watermelons, cassava, etc., for income and food security particularly during the pineapple off-season.

In 2017, a comprehensive pineapple production guide was developed by longtime Vanua Levu pineapple farmer Dr. Aad Van Santen, and Kyle Stice, under the EU-funded Pacific Community project *Improvement of Key Services to Agriculture*.[3] The guide outlines appropriate production techniques, covering everything from planting material and site selection to post-harvest handling. Alongside extension resources such as the Ministry of Agriculture's *Crop & Livestock Guide 2025*,[4] it forms the current package of recommended practices used in Fiji today.

1 Qiqi, E., 2025, Personal Interview
2 Patel, H., 2025, Personal Interview
3 Van Santen & Stice 2017 "Pineapple Production in Fiji: Trainer's Guide"; Instructional videos: https://www.spc.int/fr/node/10720
4 https://www.agriculture.gov.fj/documents/booklets/Crop%20and%20Livestock%20Guide%202025.pdf

Soil Type

All of the farmers surveyed responded that they did not have their soils tested nor did they know the soil type on their farms. However, the majority of the farmers know that soil fertility is low on their farms and pineapples are one of the few crops which can develop and fruit in soils with low fertility.

A comprehensive soil suitability study was published in 2012 by the Pacific Community which contains the suitability profile for pineapple (and all crops) in every location in Fiji.[1] As referenced above, pineapple grows well in acidic soils, including post-sugar cane soils.

Soil Management Practices

Farmers use various soil management practices to enhance crop production. At planting, 38% apply farmyard manure, while 92% use synthetic fertilizers. Crop rotation is practiced by 31% of farmers, and 46% incorporate a fallow period. Additionally, 69% utilize more than two different soil management techniques. Synthetic fertilizers are primarily purchased from retail stores and the Ministry of Agriculture. While 39% obtain some fertilizer from local Ministry offices, 54% source theirs from both retail stores and other suppliers beyond the Ministry.

Weed Control Management and Use of Hormones

Weed control is managed both manually and with the use of weedicides, with 64% of farmers using chemical applications. Floral induction hormones are used by 54% of farmers, all of whom purchase them from retail outlets. Harvesting frequency varies, with 46% harvesting once a week and 38% harvesting two to three times a week. Weedicides are sourced from retail outlets, with 54% of farmers also obtaining them from additional sources such as other farmers.

Post-harvest Loss

According to Prasad's 2024 study, on-farm post-harvest loss for pineapple was 17.4%, with an additional 8.2% lost at the vendor level, resulting in a total post-harvest loss of 25.6%. While sizeable, this figure is comparable to – or better than – losses reported in countries like India and Ethiopia, which have conducted similar studies. However, as Prasad concluded, it still represents a significant loss of agricultural productivity.[2]

Between 2017 and 2018, the Australian Centre for International Agricultural Research (ACIAR) supported a series of on-farm agronomic and post-harvest training workshops for pineapple farmers in Fiji. These workshops were conducted by Dr. van Santen, Koko Siga Consultancy, the University of the Sunshine Coast, MoA, and the Fiji National University.[3] Much of the effort focused on the large farming community in the Central Division, particularly in the hills of Lawaki, Tailevu, with additional capacity-building workshops held in the Ba and Ra provinces. Supplementary masterclasses for MoA extension officers were also conducted at the Seaqaqa Research Station.

The key topics covered during the training included land preparation, erosion control, crop rotation, identification of nutritional deficiencies, fertilizer application, various floral induction techniques, and post-harvest handling practices.

Baseline studies conducted in 2016 and 2017 with the Vulagi Pineapple Farmers Association in Lawaki aimed to assess existing post-harvest practices, identify key risk factors, and quantify commercial losses using participatory methods. One of the main outcomes of this work was the development of improved harvesting equipment design options and the creation of fruit colour grading charts.

1 A Reference Manual for Utilising and Managing the Soil Resources of Fiji, SPC 2012 https://pafpnet.spc.int/attachments/article/170/Manual%20for%20Utilising%20Soil.pdf

2 https://research.usc.edu.au/esploro/outputs/doctoral/Postharvest-loss-of-pineapples-and-its/991007798702621

3 Underhill 2021, Enhanced fruit production and postharvest handling systems for Fiji, Samoa and Tonga https://www.aciar.gov.au/sites/default/files/2021-09/final-report-HORT-2014-077.pdf

Figure 7: Colour grade & shelf life of pineapple[1]

Further studies carried out between 2016 and 2018 to assess the impact of harvesting, handling, transport, and market practices on fruit quality loss found that post-harvest loss could be reduced by half with better care at key points along the supply chain – particularly between the field and the packing shed – and if farmers harvested fruit at the ¾ peel colour stage rather than waiting for full ripeness.

1 Underhill 2021, infographic did not specify variety although photo is of Smooth Cayenne or Veimama.

Figure 8: Assessing shelf life at Fiji National University (PC: ACIAR)

Figure 9: Whole and slice pineapple options at the Suva Municipal Market, February 2025

2.4. Domestic Markets for Pineapples

Several market opportunities exist for pineapples in Fiji, and these generally depend on the quality of the fruit. The export and tourism industries require a consistent supply of high-quality produce when compared to the domestic market which accepts lower quality at cheaper prices. Processing requires standard fruit sizes. Lowest grades and those about to deteriorate are generally sold as sliced fresh pineapples.

Domestic Urban Markets

The Fijian municipal markets are well established and exist in every major town and city. Suva, the capital city, has one major market in the city itself and markets exist in areas of large populations e.g. Lami, Laqere, Nakasi, and Bayley Bridge to name a few. Table 8 outlines the major municipal markets in Fiji.

Table 8: Fresh Produce Markets in Fiji

No.	District	Number of Markets	Location
1	Suva	12	Suva Market; Flagstaff Mini Market; Raiwaqa Mini Market; Nabua Mini Market; Kaukimoce Mini Market; Laqere Market; Narere Mini Market; Delainavesi Mini Market; Makoi Mini Market; Lami Market; Nakasi Market
2	Rewa	1	Nausori Market
3	Tailevu	1	Korovou Market
4	Rakiraki	1	Vaileka Market
5	Tavua	1	Tavua Market
6	Ba	1	Ba Market
7	Lautoka	2	Lautoka Market; Tavakubu Satellite Market
8	Nadi	2	Nadi Market; Namaka Market
9	Sigatoka	1	Sigatoka Market
10	Navua	1	Navua Market
11	Labasa	1	Labasa Market

Various roadside stalls and markets operate beyond the outskirts of urban centres. With a growing urban population driven by rural-to-urban migration, demand for fresh produce, including pineapples, remains strong. Pineapples are a staple in local diets, commonly used in salads, as snacks, and as meat tenderizers. Urban consumers prefer locally grown fresh fruits over expensive imported options, which take longer to reach store shelves.

Figure 10: Roadside pineapple stall outside of Lautoka

The vendors who were surveyed reported that they sell most of their pineapples regularly due to high demand. Sliced fruit stalls, popular in markets and along roadsides, often sell chilled pineapple slices sprinkled with mango-skin powder, giving them a red hue – especially favoured by children and teenagers. Domestic markets offer pineapples of varying quality, with prices set accordingly.

Tourism

A 2017 survey of fresh produce demand from Fiji's hotels and resorts showed a total of 536 tonnes of pineapple, valued at FJD $1.3 million (USD $0.6 million), were purchased by the tourism sector in Fiji annually.[1] Extrapolating from the 2017 findings using 2024 tourism earnings, the tourism sector's annual demand for pineapples could now be worth as much as FJD $1.82 million (USD $0.84 million).[2] The tourism industry demands high-quality produce, with most Grade A pineapples consumed by hotels and resorts. A local processor also provides fresh pineapple juice, giving tourism operators the option to purchase locally made juice.

Hotels typically contract suppliers (not farmers) for their fresh produce needs. Middlemen play a key role, sourcing pineapples from farmers and sometimes retailers to meet demand. Farmers with their own transport rarely supply hotels directly, as the quantities required are relatively small compared to their harvest. Instead, they sell to middlemen and retailers who can fulfil hotel orders. Hotel procurement often includes a credit period, usually 30 days after delivery. However, farmers generally prefer cash on delivery.

1 "From the Farm to the Tourist's Table" https://mcttt.gov.fj/wp-content/uploads/2022/07/FromtheFarmtotheTouristsTableFinalReport.pdf

2 https://www.statsfiji.gov.fj/category/tourism-and-migration-statistics/tourism-earnings/

Processing and Value-adding

There are three pineapple processors of note in Fiji. Food Processors Fiji Ltd. (FPFL), a state-owned enterprise, operates the country's main cannery for fruits and vegetables. According to FPFL, they have not sourced pineapple for two years, citing high purchase prices that render them uncompetitive against imported canned products. FPFL aims to purchase pineapples at around $0.45/kg to remain viable, but current market prices are closer to $1.00/kg, or even higher. Valley Fresh, based in Sigatoka, has found a successful niche producing pineapple juice and puree primarily for the local tourism industry. They process about two tonnes of pineapple each month, yielding roughly one tonne of juice, and operate year-round.[1] A Suva-based health food vendor, Food Culture Fiji, includes pineapple in its premixed frozen smoothie pack sold in supermarkets around the country.

There are also a few small cottage industries selling dried or candied pineapple to the tourism market.

Figure 11: FPFL canned pineapples (L); Fresh pineapple juice pouch by Valley Fresh (M); Food Culture Fiji smoothie pack (R)

2.5. Farmer Survey

The research team for this project was able to meet with 18 pineapple farmers throughout the country, and delivered detailed farmer surveys to 16 of those farmers. The surveyors were guided by the local Ministry of Agriculture extension officers in their respective districts. The sample was taken to include both large and small farmers. Surveyed farmers were from the following locations:

Table 9: Location of Farmers Consulted and Formally Surveyed

No.	Location	Farmers Consulted	Farmers Surveyed
1	Tailevu	2	2
2	Rakiraki	2	2
3	Ba	5	5
4	Seaqaqa	5	4
5	Lautoka	1	1
6	Nadi	2	2
7	Taveuni	1	-
Total		**18**	**16**

1 Consultations with both entities

Figure 12: Interviewing pineapple farmers in Tailevu (above) and Seaqaqa (below)

Farm Size and Tenure

Among the farmers surveyed, 54% leased land from the TLTB, 23% owned freehold land, 8% leased land from the State, and 15% farmed on communal (mataqali) land. The average farm size was 19.9 acres (8 hectares), with 18.4% of the land allocated to pineapple cultivation. This percentage was influenced by some farmers' access to communal land for farming. These figures align with expectations, as TLTB leases dominate agricultural land tenure in Fiji.

Crops Grown

All farmers interviewed cultivated additional crops alongside pineapples. These included sugarcane, watermelon, assorted vegetables, and root crops. The primary reasons for growing other crops were:

1. Generating income to cover land lease payments (especially for sugarcane farming as the Fiji Sugar Corporation (FSC) directly deducts these payments from sugarcane proceeds; and
2. Ensuring household food security and supplementary income.

As pineapple production declines at certain times of the year, farmers rely on these alternative crops for income or household consumption.

Farm Equipment

None of the surveyed farmers used tunnels or greenhouses; all crops were grown in open fields. This reliance on open-field cultivation makes production highly dependent on weather conditions and may limit crop availability to specific seasons.

Among the respondents, 53% owned vehicles, and 53% owned tractors, while all farmers had some form of cultivation equipment such as mouldboard ploughs or tine harrows. Since most pineapple farming takes place on sloping land, tractors cannot be used to pull contour lines, so draught animals are used instead to make the planting furrows.

Notably, very few farmers rented or shared transport. This is primarily because most sell their produce to middlemen who collect it directly from the farm gate, reducing the need for market transportation. Large commercial farmers tend to invest more in capital equipment compared to smallholder farmers.

Sourcing Agri-inputs and Finance

Most farmers surveyed were reluctant to take out loans for farm investment. This hesitancy stems from several factors, including the difficulty of securing financing for pineapple cultivation and deeply rooted religious and cultural beliefs, particularly among Fijian farmers of Indian descent. Additionally, many farmers prefer to avoid the financial risks associated with loan repayments.

Table 10: Farmer Survey - Response to sourcing inputs for pineapple cultivation

The majority of farmers purchase their own agricultural inputs, such as fertilizers and weedicides, from retail suppliers rather than relying on the Ministry of Agriculture, which often faces shortages. Pineapple seed stock is primarily sourced from farmers' own fields, using suckers, slips, and shoots after a year of cultivation.

19.9 acres
Average farm size

No.	Description	Response	Comments
1	Planting Materials	84% of the farmers face no issue or constraint with procuring planting materials	New farmers and small holder farmers have some constraints in procuring planting materials but as the size of the cultivated area increases, they are able to obtain planting materials from their own crop.
2.	Land Preparation	8% of the farmers use the Ministry of Agriculture for land preparation despite very reasonable ploughing rates.	92% farmers use their own machinery or hire out to private contractors at higher costs compared to the rates the Ministry of Agriculture offers. This is due to the timeliness of operations and there is no time-lag with private contractors
3.	Fertilizer (price and availability)	31% of the farmers responded they have no issues with procuring fertilizers	Most farmers opt to purchase from retail outlets at a higher price than from the Ministry of Agriculture since there is always a shortage of fertilizer with the Ministry. 69% of the farmers have an issue with the price of fertilizers and wish to get subsidized prices for the industry similar to the sugar-cane industry
4.	Pesticides (including weedicides)	31% of the farmers have no issue with procuring pesticides and weedicides	69% of the farmers think that price is high for weedicides when compared to the same chemical offered to sugarcane farmers by FSC.
5.	Access to Finance	23% farmers have no problems with access to finance.	Most of the farmers have an aversion to taking loans or seeking financial assistance from lending institutions due to religious and cultural beliefs.

Access to Information

The majority of the farmers surveyed receive moderate to little information in terms of farming practices, harvest and post-harvest operations. Information is based on their personal experiences and other farmer's experiences which they use for their package of practices. All the farmers surveyed do not keep written records of the farm income and expenses, and some may not even know if they are operating at a profit or loss. They see cash flow and grow their basic food requirements on farm, which suffices for their needs. Smallholder farmers supplying to middlemen do not have market information and depend on the middlemen to provide prices and market information.

Farmers have had no training in agribusiness and do not know where to acquire the knowledge to treat farming as a business. Set out below is a summary of farmers' knowledge and access to information on the following topics.

Planting Methods and Spacing

The majority of the farmers base methods and spacing by conferring with other farmers, although some information is provided by the extension services of the MoA. The older farmers claim that experience in pineapple cultivation as well as trial and error have given them enough knowledge to produce a profitable crop.

Appropriate Use of Fertilizers and Pesticides

100% of the farmers surveyed indicated that they have had no training on the appropriate use of fertilizers. None of the farms visited had ever done a soil test. These farmers used fertilizer since other farmers are using fertilizer or upon observation. The primary source of information for the appropriate use of fertilizer and pesticides were from family members and friends who are also engaged in pineapple cultivation.

Disease and Pest Control

100% of the farmers surveyed indicated that their farms are disease and pest free. However, this may be due to a lack of information on disease and pests relating to pineapple. Considering over 99% of pineapples are sold and consumed locally, there is little need to address microscopic or minor pest issues that do not affect the fruit.

Post-Harvest Handling

Differences have been observed in post-harvest handling and storage practices. Most crops are harvested at the ripe stage to meet consumer demand and are transported in sacks from the field to the roadside or the farmer's residence. From there, the produce is delivered to markets either by middlemen or by the farmers themselves. None of the surveyed farms had dedicated storage facilities for preserving pineapples over an extended period, as all pineapples are transported within 24 hours of harvest.

Figure 13: Correct storage for transport (crown down) (PC: Aqbal Azam Ali)

Access to Inputs

100% of the farmers surveyed were aware of where to purchase inputs.

Access to Packing Material

The exporters supply packing crates to farmers supplying them with pineapple. 100% of the farmers surveyed were aware of where to purchase packing materials (sacks).

Access to Markets or Buyers

The majority of the farmers were aware as to where to get the information on access to markets or buyers. This is from friends and family and often middlemen. The Ministry of Agriculture's extension division – responsible for linking producers to markets, relaying national-level information to farmers, and collecting insights from the field – has had little visible impact in consistently providing regular market information to producers, despite its critical role in supporting productivity and the uptake of new programs.

Training in Business

None of the farmers surveyed received any training on running their farms as a commercial business. 75% of the farmers surveyed show that personal experience, family and friends are their main source of training in operating their farms as commercial businesses.

Farmer Groups

23% of the farmers surveyed claimed that they belong to a pineapple farmers group.

Land Preparation

The average cost of preparing one acre of land amounts to FJD $970. However, the cost of one acre of land preparation can be as high as $4000 to $5000 per acre if preparing new lands for planting. Generally, farmers use their own equipment with at least 2 rounds of ploughing, ridging and planting. The labour cost for planting ranges from $20-$30 per person per day with meals provided by the farmer.

Figure 14: Soil prep and planting in Ba (PC: Aqbal Azam Ali)

Constraints to Producing Pineapples for Export[1]

From the farmers' point of view, the main constraints to producing pineapples for export are:

1. **Quantity demanded by exporters** - The quantity of pineapples required by exporters is relatively small compared to the total yields harvested by farmers. For instance, each exporter surveyed requires approximately one tonne of pineapples per week for export. However, the average yield per acre is around 10 tonnes. To meet the weekly export demand, a farmer would need to harvest about 1,000 plants per week, which equates to just 0.06 acres. This creates a challenge for farmers, as maintaining a consistent supply requires programmed planting—a practice many farmers either do not understand or lack the capacity to implement effectively.

2. **Price** - Exporters typically purchase pineapples at or slightly above the local market price to ensure a steady supply. However, during peak season, prices drop significantly, ranging from $0.50 to $0.80 per pineapple (less than 1 kg each). Given this price fluctuation, farmers prefer to sell their entire harvest at once rather than dividing it up – sending a small portion to exporters while searching for other buyers for the remainder. Farmers currently supplying exporters often have multiple buyers and act as type 2 middlemen (described in detail in the next section).

   Farmers were also asked what would be an acceptable farmgate price for export pineapples. The average response was FJD $1.55/kg (median - $1.60, mode - $2.00).

1 NOTE: This is in response to a farmer survey question and not intended as complete export analysis, which is covered in section 4.

2.6. Buyer Survey

Types of Buyers

There are different types of buyers of pineapple, and different supply chain models have been developed following the survey. Buyers are broadly classed as:

- Middlemen
- Retailers
  - *i. Market vendors*
  - *ii. Sliced fruit vendors*
  - *iii. Supermarkets*
  - *iv. Restaurants/hotels*
- Exporters
- Processors
- Consumers

Buyer classification is based on the stage of the supply chain. Retailers are defined as those who sell pineapples directly to consumers; therefore, any entity engaged in direct consumer sales is considered a retailer.

Published data on the total number of retailers in Fiji is limited, with even less detail available on those specifically selling pineapple. However, reasonable estimates can be drawn from available research and institutional knowledge. It is estimated that there are dozens of Type 1 middlemen (explanation below) operating across the country buying and selling pineapple. Fiji has thousands of market vendors, with up to 200 of them regularly selling pineapple. A 2019 rapid assessment for Prasad's 2024 study identified 142 vendors selling pineapple in municipal markets and 93 roadside vendors at that time.[2] There are over 70 supermarkets in Fiji, including both major chains and independent outlets; however, pineapples are more commonly sold by storefront vendors, or in nearby markets, rather than within supermarkets themselves. There are approximately 500 restaurants in Fiji.[3] There are three active exporters and three processors of pineapple.

Middlemen

Middlemen, though often overlooked, play a crucial role in the pineapple sector by providing essential services and establishing market connections that have been developed over many years. Their involvement helps maintain competitive market prices, as competition among middlemen drives them to procure pineapples at the best possible value. However, this same competition has also contributed to farmers' resentment, as many perceive they have been exploited over the years.[4]

2 Prasad 2024 https://research.usc.edu.au/esploro/outputs/doctoral/Postharvest-loss-of-pineapples-and-its/991007798702621

3 https://www.tripadvisor.com/Restaurants-g294331-Fiji.html#LOCATION_LIST

4 Veit 2009 https://www.fao.org/fileadmin/templates/est/AAACP/pacific/FAO_AAACP_Paper_Series_No_7_1_.pdf

According to Veit, it is possible to broadly class middlemen into 4 rough classifications that operate in Fiji:

Type 1: Business Operators/Service Providers

Type 2: Farmers Supplementing Income

Type 3: Market Vendors/Farmers with Market Stalls

Type 4: Importers (not applicable to pineapple)

Type 1: Business Operators/Service Providers

This group sources pineapples from local farmers and delivers them to end markets. They do not engage in the actual production of pineapples but play a key role in the supply chain. While they are often based near rural farming areas, they do not typically reside there, making it feasible for them to make regular trips to source produce.

Most operators have storage facilities and own light goods vehicles, enabling them to transport pineapples daily to consumer markets. Some of these businesses operate as contractors with strong connections to hotels, where competition is fierce. Those supplying the tourism industry typically grade their produce, although basic grading is usually done on the farm.

These operators pay cash when collecting produce from farms but may offer credit to regular buyers. They also provide some market information to farmers. Approximately 80% of their business relationships are built on trust, as they consistently work with the same farmers. Formal contractual agreements are rare, as farmers tend to sell to the highest bidder. The profit margin for middlemen in this sector is approximately 20%.

Type 2: Farmers Supplementing Income

This category of middleman is primarily a farmer who supplies municipal markets using their own truck. When farm output is low – especially in the off-season – they purchase from nearby farms to fill their load before heading to market. Most operate on small rural farms under 10 hectares, and all transactions are conducted in cash. There are no contractual arrangements involved, nor are these of interest to most farmers, who primarily sell their own produce. Profit margins typically range from 5–10%, after accounting for transportation costs.

Type 3: Market Vendors/Farmers with Market Stalls.

This group consists of market vendors who directly source from rural areas and are farmers who have market stalls in one of the municipal markets. They improve their competitiveness by cutting out the costs to other middlemen. Some of the vendors deliver to nearby hotels. They do not have suitable storage facilities and cater for market demand. Profit margins are between 5-10% factoring in the cost of transportation and rental of the market stall.

Exporters

Exporters are buyers who purchase pineapples exclusively for export. Three exporters were interviewed during the survey. They source pineapples directly from local farmers and Type 1 middlemen.

Exporters often have well-equipped storage facilities, and their profit margins tend to be slightly higher than those of other middlemen. While some exporters also engage in farming, their primary supply comes from farmers and middlemen.

Pineapples are typically shipped alongside other fruits and vegetables to their destination markets. Although exporters generally aim for a 20% profit margin, various costs and challenges – discussed later in this report – can sometimes reduce their margins to 5–10% for pineapple.

Processors

This group of buyers purchase from farmers and middlemen with preference given to the latter. The sole purpose is to process and add value to the produce and offer to consumers. Often the product is subsequently either retailed or wholesaled to other retailers. Active processors in Fiji were discussed in the previous section above.

Hotels

Hotels purchase from a mix of farmers, produce markets and middlemen, with larger operations veering toward the latter. Purchasing officers prioritize convenience and value, seeking the best price with minimal effort. They often maintain relationships with multiple middlemen and compare prices before placing orders.

2.7. Farmer-Buyer Relations

The relationship between farmers and buyers has always been shaped by a fundamental conflict: buyers seek to purchase at the lowest possible price, while farmers aim to maximize their profit margins. This dynamic often leads to price distortions, with farmers frequently forced to sell at lower-than-expected prices, particularly when market conditions favour buyers. Conversely, buyers must be able to purchase at a price that makes their risk and investment worthwhile.

Lack of Market Information

The agricultural sector in Fiji suffers from significant information asymmetry,[1] leaving farmers vulnerable to price manipulation and exploitation. Market information is either unavailable or not disseminated in a timely or efficient manner, resulting in a lack of transparency in price and quality.

This lack of information affects planning across the entire value chain. Farmers often remain unaware of buyer preferences and demand trends because feedback from the supply chain is minimal.

1 Veit 2009 https://www.fao.org/fileadmin/templates/est/AAACP/pacific/FAO_AAACP_Paper_Series_No_7_1_.pdf

As a result, they struggle to plan planting and harvesting cycles effectively, leading to frequent oversupply of seasonal crops, including pineapples. Improving communication channels between buyers and farmers is crucial to bridging this gap and ensuring better coordination in production and marketing.

Marketing Records and Farm Prices

Reliable sources of accurate price data are scarce. While the Ministry of Agriculture records weekly market prices across Fiji, this information is not easily accessible to farmers. Furthermore, there is no centralized record of farmgate prices, and even when such data is available, its accuracy is often questionable.

Prices are typically measured in bundles or dozens rather than by weight, which adds another layer of inconsistency. Interestingly, pineapples in New Zealand are also sold individually rather than by weight. To maintain price stability, the size of bundles fluctuates between peak and off-season periods. For instance, some pineapple farmers adjust their pricing strategy accordingly, as illustrated in Table 11.

Table 11: Example of Farmgate Pricing Strategy for roadside vendors growing pineapples during peak season

Grade	Price ($/ bundle)	Number of pineapples in bundle
A	$5.00	3
B	$5.00	4
C	$5.00	5 - 6 depending on size

In off-seasons or during low supply, the size of the bundle may decrease, but the price remains the same. Similarly, during the in-season the weight of the bundle may increase but which is not recorded.

Figure 15: 3 for $5 bundle of Smooth Cayenne for sale roadside near Rakiraki Feb. 2025 (avg. 1kg per pineapple)

As part of the value chain analysis, both the farmers and buyers were requested to recall farmgate prices for the preceding years of 2023 and 2024. While some buyers keep records, farmers do not. The majority of the farmers struggled to recall prices or have a baseline wholesale price to their preferred middlemen.

Farmgate prices depending on farmer and buyer fluctuate or can fluctuate quite significantly. One of the major constraints is that farmers will rarely tell the correct prices, and are always willing to sell to the higher bidder, understandably so.

Segregation of Buyers and Farmers

Overall, there has been a lack of coordination between buyers and farmers leading to information gaps in the value chain. The end result is a general distrust between buyers and farmers, with farmers believing that buyers are trying to cheat them, while buyers think that farmers are intent on deceiving them.

To many farmers, especially those supplying to the middlemen, the only market indicators are enquiries from the buyer and from informal conversations with family and friends. To many buyers, the best information of product availability is personal visits to the farm.

Exporters and type 1 middlemen are the most separated of the groups due to the formal nature of their businesses. Type 2 and type 3 middlemen have much closer ties to the farmers and also due to their self-interests in the farms.

Depending on location, the focus of any feasibility study of export processing facilities must factor in the type pf buyer. Processing facilities for exports if located close to urban areas or with good accessibility may prove to be beneficial to type 1 middlemen and exporters.

Contractual Agreements

Formal contractual agreements between farmers and buyers are virtually non-existent in Fiji's pineapple industry. This absence is largely due to past breaches of agreements by both parties. Pricing is another major factor – farmers often prioritize selling to the highest bidder, making long-term commitments difficult to enforce. Additionally, seasonal price fluctuations create challenges, as contracts may not adequately account for shifts in supply and demand.

Power dynamics along the value chain also impact compliance with contractual obligations. During peak harvest seasons, buyers typically hold more bargaining power, while farmers may gain leverage when supply is low. However, in most cases, Fijian pineapple farmers are price takers rather than price setters, leaving them vulnerable to market conditions dictated by buyers.

Finance and Insurance

Both the buyers and farmers were found to have little access to external sources of finance. While many farmers are loan-averse, as discussed above, part of the challenge also lies in limited access to information – many actors in the value chain are simply unaware of the financing opportunities available. Financial institutions, in turn, may be reluctant to invest in agriculture due to the lack of reliable data and accurate information needed to make informed decisions.

Access to collateral is another key factor when seeking finance, and smallholder farmers or those working on communal lands often have limited means to provide it—making it more difficult to secure loans from financial institutions. The use of contracts can be one avenue of providing collateral, but there is little prospect of the use of contracts in the pineapple industry.

Another important factor is the high risk of default as exemplified from past experience. This limits access to finance particularly for smaller enterprises. Agriculture is both a risky investment and business. The prevalence of adverse weather patterns in the Pacific does little to assist small holder enterprises since one single cyclone can decimate the crop and render income generating enterprises useless.

The feedback above is despite notable improvements in access to finance for farmers in Fiji over recent years. The establishment of the Personal Property Securities Registry in 2019[1] has allowed movable assets – such as farming equipment or vehicles – to be used as collateral, addressing a major barrier for those without land titles. Financial institutions such as the Fiji Development Bank[2] and Bank of Baroda Fiji, among others, have also introduced agriculture-focused loan products to support farmers.

However, access to finance remains uneven and, in practice, can still be challenging for many farmers.[3] The application process can be time-consuming and discouraging, particularly for smallholder farmers and those on communal land, who may struggle to meet collateral and documentation requirements. Additionally, while financing options exist for major crops such as sugarcane and root crops, access to tailored financing for crops like pineapple may be more limited.

2.8. Market Models for Fiji Pineapple

As depicted in **Figure 16** below, pineapples are marketed both locally and exported to other countries, with over 99% of pineapples sold or consumed locally.

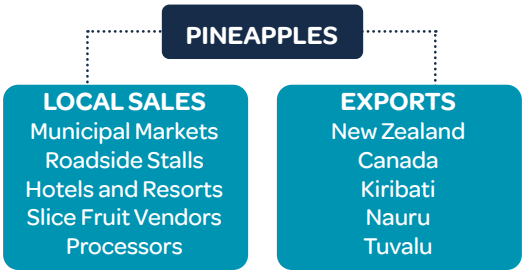


Figure 16: Markets for Fiji Pineapple

Pineapples are usually sold in bundles or bunches to consumers and there is a growing popularity of freshly sliced pineapples sold in municipal markets and roadside stalls in the country. Retail prices range from $3.00 - $5.00 per bundle during the peak-season and may increase to as much as $20.00 - $30.00 a bundle during the off-season. The size of the bundles varies between seasons with 3 - 6 pineapples in each bundle. During the off-season, pineapples are sold individually with a price range of $3.00 for a pineapple weighing approximately 0.8 kg to $7.00 for a pineapple weighing approximately 1.5 kg. There have been certain instances where a pineapple can cost as much as $10.00 in the local market.

Figure 17 illustrates average monthly prices for pineapple at the Suva and Lautoka markets over one year span from April 2023 to March 2024.[1]

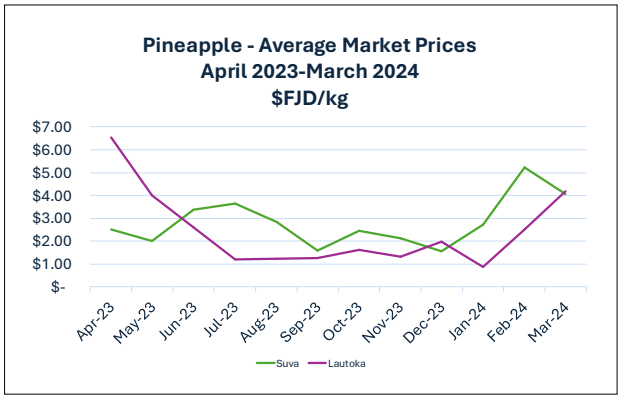


Figure 17: Average market prices - Suva & Lautoka, 2023-24

The tourism sector consumes a lot of fresh pineapples with contracted suppliers and middlemen supplying the bulk of their requirements. Pineapples sold to the tourism sector are mostly Grade A, which means an average weight of approximately 1.5kg[2] and standard sized fruits.

1 https://pacificmakete.com.fj/2022/11/08/latest-news/loans-and-banking/?utm_source=chatgpt.com
2 https://www.fdb.com.fj/agriculture-loans/
3 https://www.fijitimes.com.fj/farmers-raise-concern-on-difficulty-accessing-loan-and-credit/?utm_source=chatgpt.com

1 Fiji Agriculture Online Data Library
2 While 1.5 kg is considered the ideal weight, consistent Ripley Queen pine apples of this size are increasingly rare due to poor ratoon management and successive cultivar generations (F3 and F4). Additionally, Ripley Queen's naturally lower juiciness makes it lighter than a similarly sized Smooth Cayenne pineapple.

Export prices vary depending on the country of import and freight costs for that destination. For example, pineapples destined for Canada may be sold for a lower cost per kg due to higher freight costs for that destination, than compared to pineapples exported to NZ. Pineapple exports to New Zealand are covered extensively later in this report.

Model 1 depicts the farmer selling directly to consumers through roadside stalls and fresh slice pineapples.

Figure 18: Model 1 - Farmer to Consumer

MODEL 1:
Farmer Direct to Consumer (Local)

(Roadside sales, etc)

This approach is carried out by small to medium scale farmers who are able to transport to the highways where they operate roadside stalls. Some farmers also transport their produce to municipal markets and sell directly to consumers. This model eliminates the need for middlemen and all costs associated with marketing are borne by the farmer. Often, these farmers distort the market price by offering their produce at lower prices to sell off their produce. These farmers are a major risk to large commercial scale pineapple farmers since their cost of operations are very low and many do not use fertilizers etc. to improve productivity.

Model 2 is a popular model in Fiji where farmers sell to a retailer who then engages the end consumer.

Figure 19: Model 2 - Farmer to Retailer to Consumer

MODEL 2:
Farmer to Retailer to Consumer (Local)

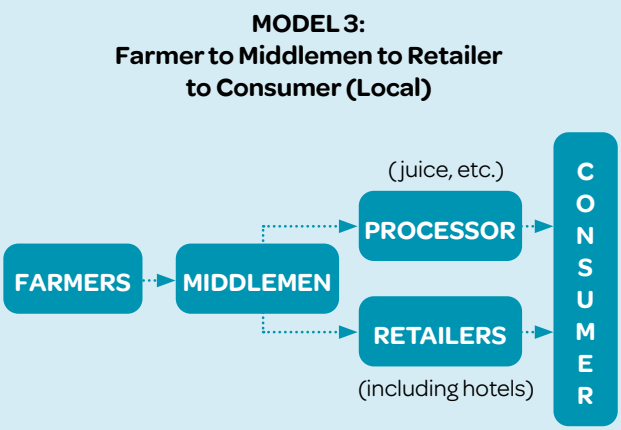
(Market vendors, Fruit Sellers, Supermarkets, etc)

In this model, farmers who have the capability, supply directly to retailers who sell to consumers. Retailers sell whole, fresh pineapples; fresh sliced pineapples; or a combination of both. Some supermarkets in Fiji do sell pineapples when available and there are farmers who supply supermarkets. Often the farmers tend to transport their produce to the retailer either using their own transports or hire when the need arises. Larger more commercialized farmers often own trucks for delivery often travelling approximately 215 km from Ba District to Suva Market. Suva Market is one of the larger markets in Fiji located in the capital city, Suva and caters for wide and diverse cultures, races, and socioeconomic classes of people making it a high-price market in Fiji. Often, farmers may sell to more than one retailer or type of retailer such as selling to market vendors in Suva and Nausori markets respectively and to roadside vendors along the way.

Model 3 is another common model that introduces a middleman between the farmer and retailer or processor.

Figure 20: Model 3 - Farmer to Middleman to Retailer to Consumer

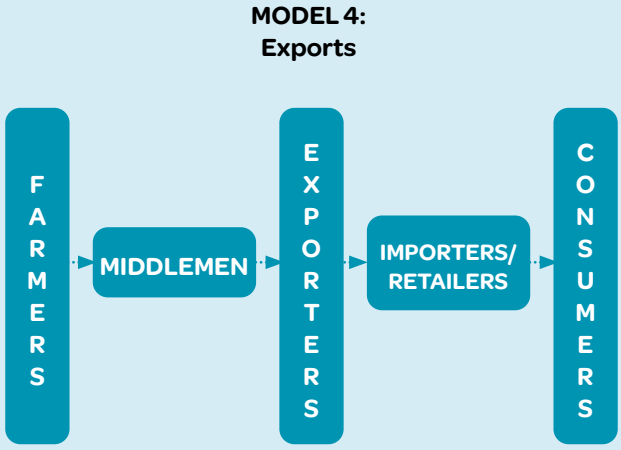
In this model, farmers sell directly to middlemen and no transport cost is incurred by the farmer. The middlemen travel to farmers at their own expense and buy at average farm-gate prices of $8.00/dozen. The middlemen set their own price depending on the customer and there may be some instances of price discrimination also depending on the customer. For processing, the price during in-season is at an average of $1.00/kg and off-season prices for supply to processors are at an average of $2.50/kg. Retailers include market vendors, hotels and fresh slice pineapple vendors. More research needs to be carried out on this model especially with pricing mechanisms to different retailers by the middlemen.



Model 4 depicts a simple model for exports of pineapples from Fiji.

Figure 21: Model 4 - Exports

The exporter buys directly from the farmer; middlemen or a combination of both. The current exporters supply directly to importers who often double as the retailer in the importing country. These retailers have family ties to the exporters and often the pineapples are sold at smaller supermarkets and retail outlets. One of the basic problems exporters have in supplying to the major retail supermarket chains is the quantity, quality and price demanded by the major retail supermarkets. As with model 3, more research needs to be carried out especially at the middlemen level. Exporters who are located within the pineapple producing areas often purchase directly from farmers while those who are not located within the pineapple producing areas purchase both from farmers who are willing to transport their products to the exporters site or through middlemen.



2.9. Value Chain Mapping

Before reaching the final consumer produce usually changes hands several times. In order to create a value chain map, value chain players and their activities need to be identified in the primary step.

Figure 22 below represents the principal processes in the pineapple value chain.

Figure 22: Principal processes in the pineapple value chain

The value chain map of pineapple in Fiji is presented in Figure 23. The map represents the different functions, players and facilitators involved in the value chain process. The activities of the major players have been provided in the consequent tables below. On the basis of information gathered from the primary study, the tentative movement of produce through various actors was positioned in the map. This was achieved partly through commodity chain analysis. it involves four steps presented in the upcoming subsections. The movement of fresh pineapple in the flowchart for local consumption is represented by a continuous black arrow and for export consumption by a continuous red arrow.

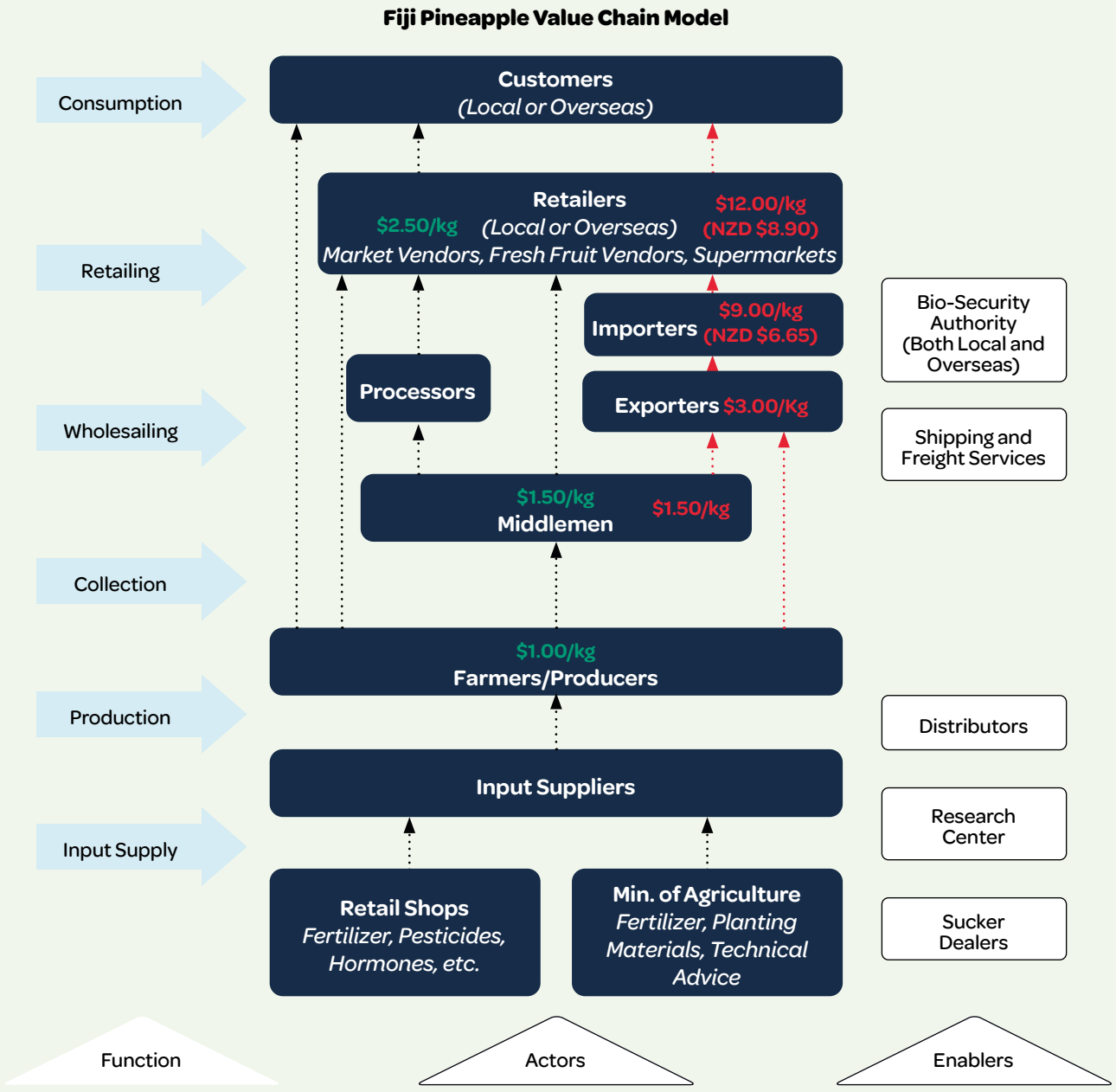


Figure 23: Fiji Pineapple Value Chain (current)

Price represents $FJD selling price of that actor. Red signifies export pathway and prices.

The above model identifies the functions, the actors and the enablers (supporting actors) in the pineapple industry in Fiji. Prices represent the theoretical value at each stage as pineapple moves from the farmer to the middleman, vendor, and ultimately the consumer. For example, starting from a farmgate price of FJD $1, a local consumer might pay around FJD $2.50 for a 1kg pineapple, while a New Zealand consumer could pay as much as FJD $12 for the same fruit. The prices presented in the diagram are largely illustrative, as pineapple prices can vary significantly depending on seasonal availability, the grade and quality of the fruit, farmer-buyer relations, the distance to market, and the number of actors in the value chain.

The core functions are explained in the table below.

Major Functions in the Pineapple value chain

Input supply, production, collection, wholesaling, retailing and consumption were the major functions involved in the process. The major inputs used were organic manures, chemical fertilizers, suckers, implements, weedicides, hormones, etc. At the farm level, farmers grade the pineapples. The pineapples reach the consumers through middlemen, suppliers and sellers. Some traders and wholesalers are engaged in the movement of pineapples. Table 12 below outlines the major functions in the value chain.

Table 12: Major Functions in the Fiji Pineapple Value Chain

Function	Description	Comments
Input Supply	Includes the supply of inputs to the pineapple farmers. Inputs include pineapple planting materials, fertilizer, weedicides, and hormones	Input suppliers: 1. Weedicides - Retail outlets 2. Hormones - Retail outlets 3. Fertilizer - Retail outlets, MoA, South Pacific Fertilizer, other farmers 4. Planting Materials - Self, MOA, other farmers 5. Poultry Manure - Poultry farms
Production	Includes the combination of the factors of production: land, labour, capital and management to combine inputs to produce pineapples.	Production is affected by nature and all farmers interviewed do not invest into any technology to protect their crops from the sun (to prevent sun-scald) or insect pests (except spraying pesticides). Most farmers do not plant at the correct plant density to maximize productivity and there is improper ratoon management which leads to increased fruit production but smaller sized pineapples. This leads to pineapple sizes getting smaller every year (Grade C).
Collection	Includes harvesting and collecting the pineapples for distribution. Middlemen who deal with more than 1 farmer and supply to more than 1 retail outlets often have a storage area, or prefer to load from farms and supply directly to retailers on the same day or the very next day.	The Collection function is very important since it deals with harvest and post-harvest handling of pineapples. Pineapple is very susceptible to bruising, and requires delicate handling. Most farmers transport pineapples in sacks from the fields and stack the pineapples on the side. This leads to bruising on the bottom side and once tissues inside the pineapples get damaged, they tend to spoil very easily. Often to compensate for product loss, farmers tend to load extra pineapples (free of charge) to compensate for losses along the way.
Wholesaling	Includes the functions of transportation and distribution at wholesale prices to vendors, exporters, etc.	Average distances in Fiji are approximately 230 km to the Central Division where the bulk of Pineapples are traded and market prices are higher when compared to the Western Markets.
Retailing	This function is where the pineapple is available for sale directly to consumers. Generally, retail price margin is set at 100% wholesale price, but more often prices are discounted to minimize losses.	This function is a very risky function as it depends on consumer preference and choice. Therefore, the price set by the retailer also entails the risk of storing the product for sales as pineapples are perishable and tend to spoil easily once it is displayed in the open especially after it has been transported in modified environments.
Consumption	The function where consumers actually purchase the pineapples to satisfy their utility.	Consumer preference is a function of price, taste, etc, and depends on the consumers mood. Consumers want value for money.

Actors in the Pineapple Value Chain

Table 13: Actors in the Fiji Pineapple Value Chain

Actor	Description	Comments
Input Suppliers	Supply inputs to the farmers	Raw ingredients for almost all inputs are imported into the country which raises cost of production with the exception of planting materials. Includes retail outlets, MoA, South Pacific Fertilizer, sucker suppliers, etc.
Farmers/ Producers	Are the farmers who utilize land, labour and capital and purchase inputs from the input suppliers to produce pineapples for commercial purpose.	Distances affect cost of inputs: the longer the distance, generally the higher the cost. Ripley Queen was the favoured variety by most farmers due to its hardiness and sweet taste.
Middlemen	Are actors in the value chain who play an integral role in linking farmers to other actors. Their roles include supply to processors, exporters, and retailers. Sometimes, they also supply to other middlemen.	Are the price setters in the pineapple industry and often have more market information than any other actor in the value chain. Majority of the farmers depend on middlemen
Processors	Process raw pineapples into value added products such as pineapple juice, canned pineapples, etc.	Value addition increases the shelf life of the product and returns are higher depending on the cost and profit margin of the processor and the price consumers are willing to pay for the final product. Processing involves use of technology and equipment therefore price of value-added products is always higher.
Exporters	Principally involved in procuring pineapples and processing for exports. In Fiji, exporters supply pineapples to their own retail outlets (Fresher Marketing) or to retail outlets with familial ties.	Processing in this sense means meeting the requirement of Biosecurity as per IHS Guidelines. In Fiji, only the tops are removed to about 5 cm and pineapples are often cleaned with blasts of hot air.
Retailers (local and overseas)	Principally involved in selling the pineapple either in fresh or processed form to consumers.	Often advertise, or promote their pineapples to ensure 100% sales. Desired profit margin is always set at 100% of costs to factor in perishability risk.
Consumers (local and overseas)	Purchase pineapples for consumption.	

Value Chain Enablers

These are the service providers in the pineapple value chain process. The major input suppliers were sucker dealers. The principal government agencies supporting the value chain are:

- the **Ministry of Agriculture** which provide extension and carry out research services, and
- **Biosecurity authorities**. Distributors are an important service provider in moving the produce from one place to another. Shipping and freight services include air freight used for exports. It is important to know that commercial banks do not play any significant role in the Pineapple value chain. Table 14 below describes the value chain facilitators.

Table 14: Enablers/ Facilitators (Supporting Actors) in the Fiji Pineapple Value Chain

Enablers	Description	Comments
Sucker Dealers	Supply suckers for planting. Majority of the sucker dealers are pineapple farmers who sell suckers as an additional income stream	Includes Ministry of Agriculture and other pineapple farmers who wish to get rid of extra suckers. The Ministry may assist with transporting suckers from the supplier to the buyer, but the cost remains the responsibility of the buyer.
Research Centre	Deal with pineapple research including varieties, harvest and post-harvest of pineapples	Currently the pineapple research station is based at Seaqaqa, Vanua Levu which has the commercial varieties: Smooth Cayenne, Ripley Queen and other varieties: Veimama, A gray variety and 2 other local varieties.
Ministry of Agriculture	Provide support to pineapple farmers through supply of inputs: suckers, fertilizer and extension and advisory services	Constrained with lack of inputs such as fertilizers, skilled plant breeders and plant geneticists. Have actively promoted pineapple planting as per their strategic development plans
Distributors	These provide distribution services for pineapple and pineapple products chiefly in overseas markets. Most of the distribution roles are undertaken by middlemen in Fiji.	Add Costs along the value chain to the final product
Shipping and Freight Services	Roles include transport and other services for pineapples especially for exports	Add costs along the value chain to the final product
Biosecurity Authorities (local and overseas)	Provide the legislation for IHS and associated regulations for exports	Add costs along the value chain especially when shipment is intercepted.

2.10. Economics of Pineapple Production

The economics of pineapple production was carried out to assess the cost involved in cultivation, returns and to understand the relative profitability of pineapple cultivation and assist in deriving the benefit - cost ratio.

Gross Margin Analysis

The Gross Margin Analysis (GMA) below outlines the total expenditures incurred by farmers when cultivating one acre of land. This GMA is based on data collected from all 16 farmers surveyed for this project. Two approaches were calculated to estimate gross margin per acre. The **weighted gross margin** is based on total revenue and total variable costs across all surveyed farms, divided by the total area farmed. While useful for understanding overall sector performance, this approach can be skewed by the results of larger farms. In contrast, the **unweighted gross margin** averages each individual farmer's gross margin per acre, giving equal weight to all farms regardless of size. This provides a more accurate reflection of the experience and returns of a typical farmer and will be used for further analysis.

Table 15: Gross Margin Analysis - 1 acre of pineapple (based on farmer survey) ($FJD)

Item	Value
Revenue (average per farmer)	**$92,198.47**
Variable Costs (average per farmer)	
Land Preparation	$1,339.38
Planting Materials	$397.19
Manure	$140.98
Fertilizer	$2,344.22
Weed Control	$5,025.30
Hormones	$190.75
Harvesting Costs	$6,420.00
Irrigation	$25.00
Transport Cost	$1,837.50
Labor Cost	$625.00
Total Variable Cost	**$18,345.31**
Revenue less Variable Cost	**$73,853.16**
Average Acreage (of farmers surveyed)	**17.11**
Gross Margin per acre (weighted)	**$4,316.53**
Gross Margin per acre (unweighted)	**$2,760.43**

Assumptions of the GMA:

1. *Each pineapple is approximately 1kg (based on physical observation and interviews)*
2. *There are no marketing costs since majority (> 50%) of the farmers sell at farm gate to middlemen.*

From the farmer survey, the gross margin per acre is $2,760.43, meaning that after accounting for variable costs like labour, fertilizer, and transport, farmers earn this amount for each acre of pineapples they grow.[1] From the survey, large farmers use mechanized land preparations and animal draught power for land preparation and planting. Small holder farmers prepare and plant manually.

Comparison with Sugarcane

Sugarcane is a comparable commodity for gross margin analysis, as it performs well in the same dry zones as pineapples and often competes for land on farms. As depicted in Table 16, gross margin for pineapples is much higher than the sugarcane crop, both with and without subsidized inputs for fertilizer and weedicide,[2] making pineapple a lucrative crop to cultivate.

1 This is based on a relatively low sample size but can be used as basis for current pineapple operations in Fiji.

2 Various sources. Assumptions: Selling price of sugarcane is based on the 2023 prices of sugarcane received for the season; Weedicides and fertilizer prices are based on the 2019 prices for subsidies. Harvesting cost is FJD $30/t

Table 16: Gross Margin comparison of pineapple and sugarcane

Description	Pineapple	Sugarcane w/ subsidized inputs	Sugarcane w/o subsidized inputs
Gross Margin per acre	$2,760.43	$1,272.88	$958.76

Cost of Production

Cost of Production refers to those costs which are directly involved in producing pineapples and are generally on a per hectare basis. Due to the small size of pineapple holdings when compared to farms outside Fiji, the cost of production has been worked out on a per acre basis for this report. Table 17 depicts the cost of production of pineapples in Fiji per acre.

Table 17: Cost of Pineapple Production per acre

Description	Cost ($FJD)	Percent of cost (%)
Human Labor	625.00	4%
Cost of Planting Materials	397.19	2%
Manures and Fertilizers	2,485.20	14%
Plant Protection Chemicals	5,025.30	29%
Hormones	190.75	1%
Harvesting Costs	6,420.00	37%
Land Preparation	1,339.39	8%
Land Rentals	906.25	5%
Total	**17,389.08**	**100%**

As shown above, 43% of the total cost of production is from fertilizer and plant protection chemicals, which includes weedicides. Harvesting costs constitute approximately 37% of the total cost. The cost to produce one acre of pineapple is $1072.24 and cost to produce one pineapple (one kg) is $0.16. All the figures derived are averages to depict the national scenario. Detailed analysis could be done on type of land holdings, size of farms, etc. However, the purpose of this study is for the entire country, therefore averages can suffice.

The vast majority of production costs are borne by the farmers. While the Ministry of Agriculture does provide some support – such as subsidizing land preparation through tractor hire or providing excavators to farmer groups – most farmers still carry out their own land preparation due to delays in service delivery. MoA also distributes fertilizer when available, but the quantities are often insufficient, especially for larger farms where it may cover less than 5% of their needs. Given its irregularity and limited scale, this support has minimal impact on overall production economics. Also mentioned by McGregor in 2017, a price distortion exists in the fertiliser market, with subsidised, VAT-free fertiliser available to sugarcane farmers but not to pineapple growers.[1] While some pineapple farmers access this fertiliser indirectly, it is not suited to their crop and its availability is inconsistent. This underscores the need to properly subsidise the right type of fertiliser for pineapple production.

2.11. Key Constraints of the Pineapple Sector

The challenges currently facing the pineapple sector are not exclusive to pineapples but are common across many horticultural crops in Fiji. These systemic constraints hinder both productivity and market competitiveness:

- **Fragmented Grower Base**
  A large number of growers operate independently, leading to oversupply and intensified competition in local markets. Most pineapple farmers are smallholders cultivating multiple crops with minimal technological input. Typically, they are seasonal farmers, marketing their pineapples during the peak harvest period (November–January), which causes a sharp decline in prices. This market saturation reduces profitability for larger commercial growers. The absence of grower coordination distorts market equilibrium and undermines price stability.

1 McGregor 2017

- **Lack of Uniform Standards and Grades**
  While some informal grading systems exist—primarily based on size—there is a critical need for formalized standards that reflect key quality attributes such as brix levels (sweetness), size, weight, and appearance. A standardized grading system would enhance transparency, support targeted marketing, and incentivize growers to improve product quality. For example, tourism and export markets demand high-grade pineapples, while processors may require specific sizes. A clear grading structure would allow pricing to reflect product value more accurately.

- **High Input Costs**
  Fertilizers and other inputs are expensive and not always suitable for pineapple cultivation. Many farmers use generic NPK blends, which are not recommended for pineapples, and often under-fertilize due to cost constraints. This results in lower yields and inconsistent fruit sizes. Additionally, the need to travel to urban centres to procure inputs raises costs further—costs that are rarely factored into farm budgets.

  High Transportation Costs
  Commercial farmers with their own vehicles can transport pineapples directly to market, but smaller growers must either hire transport or rely on middlemen who collect produce at the farm gate for lower-than-market prices. While this reduces logistics burdens for farmers, it also limits their earning potential.

- **Inadequate Storage Infrastructure**
  Most farmers lack access to proper storage facilities. While larger growers transport directly from the field, smallholders often store harvested pineapples in makeshift sheds or on home verandas, exposing the fruit to damage from heat and rain. There is a need for affordable, secure, and ventilated storage options to maintain post-harvest quality.

- **Limited Record Keeping and Financial Literacy**
  Few growers maintain accurate farm records, resulting in unreliable financial data and hindering proper cost-benefit analysis. Financial literacy remains low across the sector, limiting farmers' ability to make informed business decisions and weakening Fiji's competitiveness in export markets.

- **Export Logistics and Shipping Costs**
  At present, all pineapple exports are shipped by air freight, which, while offering speed and better handling, limits volume and raises per-unit costs. Sea freight, though cheaper, takes 8–14 days, making it unsuitable for fresh pineapples. A long-term solution is needed to balance cost-efficiency with product quality and shelf life.

- **Low Adoption of Technology**
  Pineapples in Fiji are grown exclusively in open fields; there is no use of protected agriculture or modern technologies, even in research stations. This exposes crops to pests, animals (including feral pigs, which can destroy up to 20% of crops in some areas), and weather extremes. Furthermore, knowledge of pineapple genetics, plant nutrition, and microbiology is limited both among farmers and within extension services, hindering scientific advancements in production.

- **Lack of Structured Training and Extension Support**
  Most farmers have developed their techniques through trial and error over time. There is little formal training available on best practices in planting patterns, density management, or ratooning. This contributes to overcrowding, uneven fruit quality, and inefficient fertilizer use. Over-fertilization, in particular, is a concern and has contributed to soil degradation in other crop sectors, such as sugarcane.

- **Labour Constraints**
  Pineapple cultivation is labour-intensive, requiring manual work for weed control, earthing, and harvesting. Labor scarcity and rising living costs have pushed wages to FJD $25–30 per day, excluding meals. Including meals and refreshments, the effective cost rises to FJD $40–50 per day—an expense often overlooked in farm budgeting.

- **Land Tenure Insecurity**
  A significant portion of Fiji's agricultural production occurs under leased land, with lease durations becoming shorter over time and renewals less certain than in the past. This uncertainty discourages long-term investment in agriculture, which typically requires stable land access and extended payback periods. Farmers on short-term leases are unlikely to invest in improvements such as irrigation, permanent structures, or long-term crops. Instead, they focus on maximizing short-term yields with minimal input costs, often at the expense of soil health and sustainability, while seeking alternative land for future use. Financial institutions are also reluctant to lend to these farmers due to the risk of forced relocation, further limiting access to capital. The result is reduced productivity, minimal use of fertilizers, neglected soil conservation, and the widespread adoption of unsustainable practices.

- **Lack of Research and Development**

  There appears to be limited research and development focused specifically on pineapple production, and the outcomes of existing scientific work have not been widely disseminated to farmers. Survey results indicate that many farmers rely on alternative sources for technical guidance, rather than the Ministry of Agriculture. During field visits, the pineapple research station appeared less developed compared to research efforts in other sectors like sugarcane and rice. While some varietal taste research has been conducted, the results have not yet been published or broadly shared. Discussions with research staff also highlighted gaps in available information on pineapple genetics, conservation practices, and the infrastructure needed to manage cross-pollination between varieties. These gaps present opportunities to strengthen research and improve information flow to better support the sector.

3. The New Zealand Market for Pineapples

3.1. Pineapple Imports

There are currently 14 countries with whole, fresh pineapple market access into New Zealand. These are:[1]

Table 18: Countries with Pineapple Market Access to New Zealand

Countries with Pineapple Market Access to NZ	
Australia	Panama
Cook Islands	Philippines
Costa Rica	Samoa
Ecuador	Taiwan
Fiji	Thailand
Indonesia	Tonga
New Caledonia	Vanuatu

1 NZ MPI https://piersearch.mpi.govt.nz/importing-commodities-to-new-zealand/

In 2024, New Zealand's total import value (CIF) of pineapples was nearly NZD $16.7 million, with about 9,000 tonnes imported annually over the last two years. Despite the numerous pathways, only three countries export whole fresh pineapple to New Zealand in meaningful quantities. The Philippines has led the way, averaging 5,752 metric tonnes a year from 2020 to 2024, accounting for 67% of market by volume. Ecuador is the second-largest exporter, averaging 2,664 tonnes annually and holding a 31% market share by volume during the same period. The pathway for Costa Rican pineapples opened in March 2024, leading to the export of nearly 750 tonnes to New Zealand since May last year.

Table 19: New Zealand Pineapple Imports by Country (2020-2024)

New Zealand Pineapple Imports by Country (2020-2024)												
	2020		2021		2022		2023		2024		5-Year Total	
	Quantity (kg)	%	Quantity (kg)	%	Quantity (kg)	%	Quantity (kg)	%	Quantity (kg)	%	Quantity (kg)	%
Philippines	5,954,648	73.96%	5,831,714	70.66%	5,927,782	69.49%	5,721,201	63.23%	5,325,624	59.18%	28,760,972	67.07%
Ecuador	2,095,470	26.03%	2,419,920	29.32%	2,579,850	30.24%	3,309,390	36.58%	2,915,640	32.40%	13,320,271	31.06%
Costa Rica	-		-		-		-		748,461	8.32%	748,461	1.75%
Fiji	30	0.00%	-		901	0.01%	12,773	0.14%	6,923	0.08%	20,627	0.05%
Tonga	703	0.01%	1,341	0.02%	1,960	0.02%	4,387	0.05%	793	0.01%	9,184	0.02%
Pakistan	-		-		19,500	0.23%	-		-		19,500	0.05%
Taiwan	-		-		-		-		1,250	0.01%	1,250	0.00%
Annual Total	8,050,851		8,252,975		8,529,993		9,047,751		8,998,691		42,880,265	

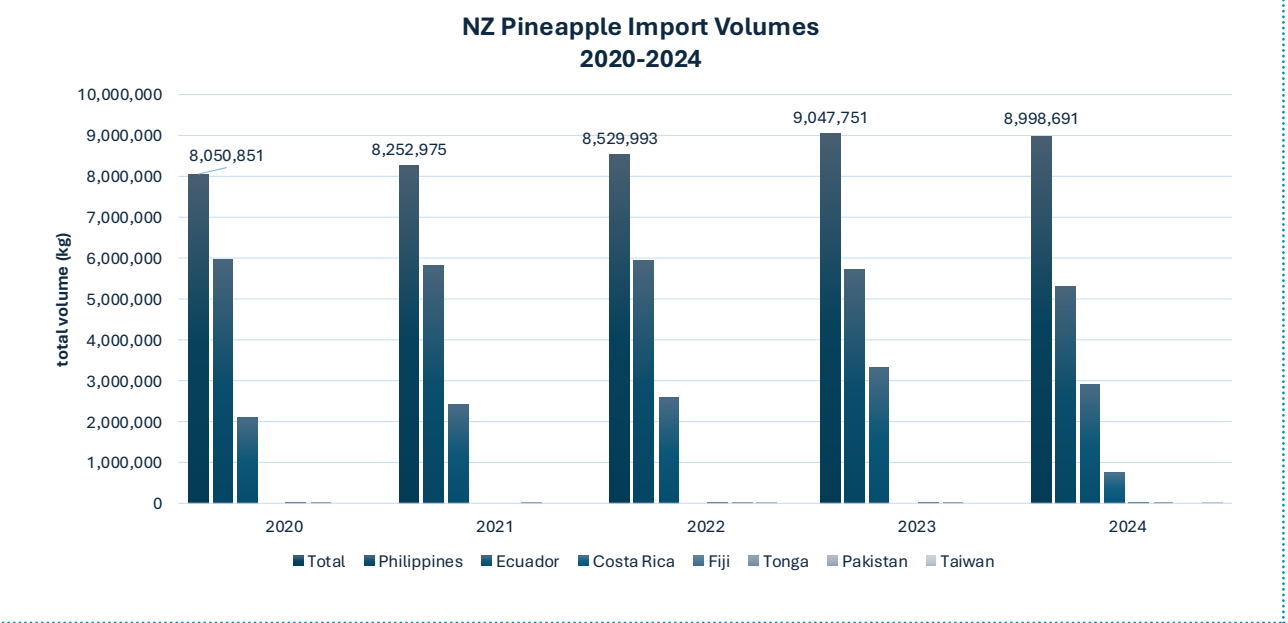


Figure 24: New Zealand Pineapple Imports by Country (2020-2024). (Inset below illustrates lower-volume countries.)

Import Routes

New Zealand's three main ports of entry for pineapples are Auckland, Tauranga, and Christchurch (Lyttelton) seaports. Pineapples from the Philippines endure an approximately 10-day transit to Auckland and Christchurch, while shipments from Ecuador and Costa Rica usually on the same vessel, takes 21-28 days to reach Tauranga. The small Tongan consignments also arrive via Tauranga, benefitting from a 4-day transit.

Fiji and Taiwan are the only countries that airfreight pineapples, with all shipments arriving at Auckland Airport. Sea freight journeys from Fiji would take 8 to 14 days depending on the shipping line and ports of loading and discharge.

Seasonality

There is some seasonal variability in pineapple volumes in the New Zealand market, primarily due to supply fluctuations from the Philippines. For much of the year, supply looked similar between 2023 and 2024, but with noticeable drops in supply from the Philippines in June (a natural peak season for that country) and November of 2024. Costa Rica added considerable supply to the end-of-year surge in demand leading into New Zealand's summer and holiday season last year. The Ecuadorian supply was much more consistent throughout 2023 than 2024.

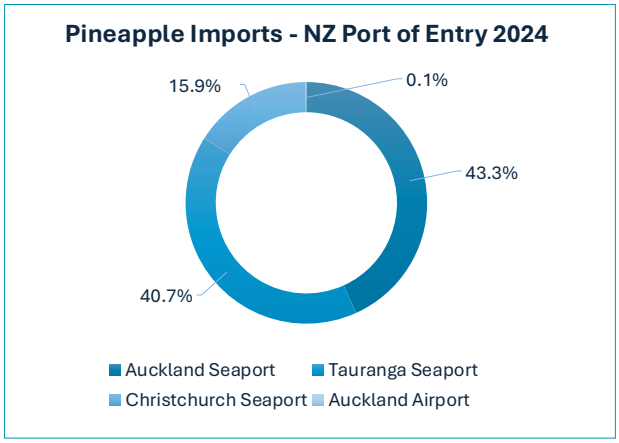


Figure 25: Ports of Entry for Pineapple Imports

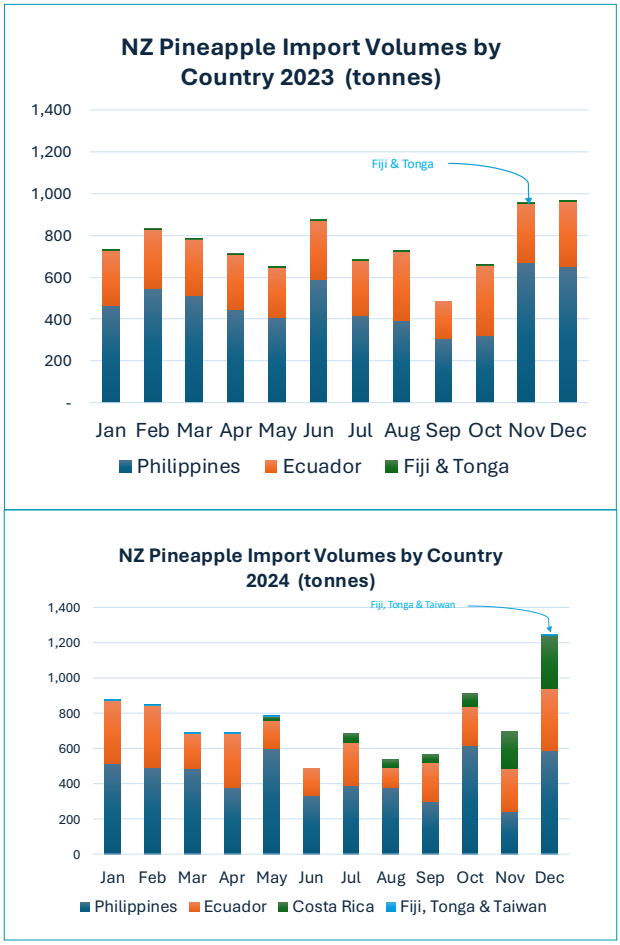


Figure 26: NZ Pineapple Import Volumes by Country 2023 & 2024

By stacking 2023 and 2024 imports, a bit clearer trend emerges, with above average supply the first two months of the year, a slightly lower but steady supply through midyear, with a noticeable dip in September before supply picks up again for the end of year surge.

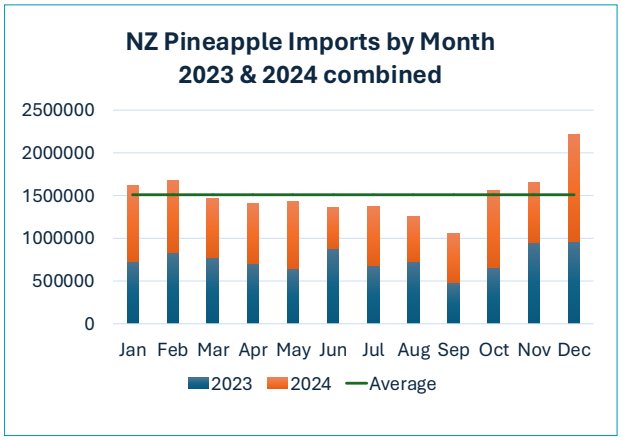


Figure 27: NZ Pineapple Import Volumes 2023 & 2024 (stacked)

3.2. NZ Supermarket Duopoly and Major Importers

In total there are over 800 produce-containing supermarket outlets in New Zealand, 37 food/fruit delivery services and over 25 farmers markets, as well as thousands of smaller convenience stores, dairies and service stations that sell produce.[1] New Zealand's supermarket industry is dominated by a duopoly of Foodstuffs NZ and Woolworths NZ, which control over 80% of the market and largely dictate prices, quality, and product availability.[2] While smaller grocery retailers exist, they have minimal competitive impact, as the major players offer the widest range of products, competitive pricing, and convenient shopping locations both in-store and online. In March of 2025 the NZ Government announced plans to "structurally separate" Foodstuffs and Woolworths in order to foster genuine competition.[3]

1 Fresh Facts 2024 https://unitedfresh.co.nz/assets/site/Fresh-Facts-2024-%E2%80%93-Online-Version.pdf

2 Commerce Commission NZ 2020 https://comcom.govt.nz/about-us/our-role/competition-studies/market-study-into-retail-grocery-sector

3 https://www.nzherald.co.nz/business/supermarket-duopoly-on-notice-as-government-targets-high-food-prices-considers-structural-separation-of-foodstuffs-woolworths/Q2G4Z2MS6ZF6NLB4APBZKHDT5E/

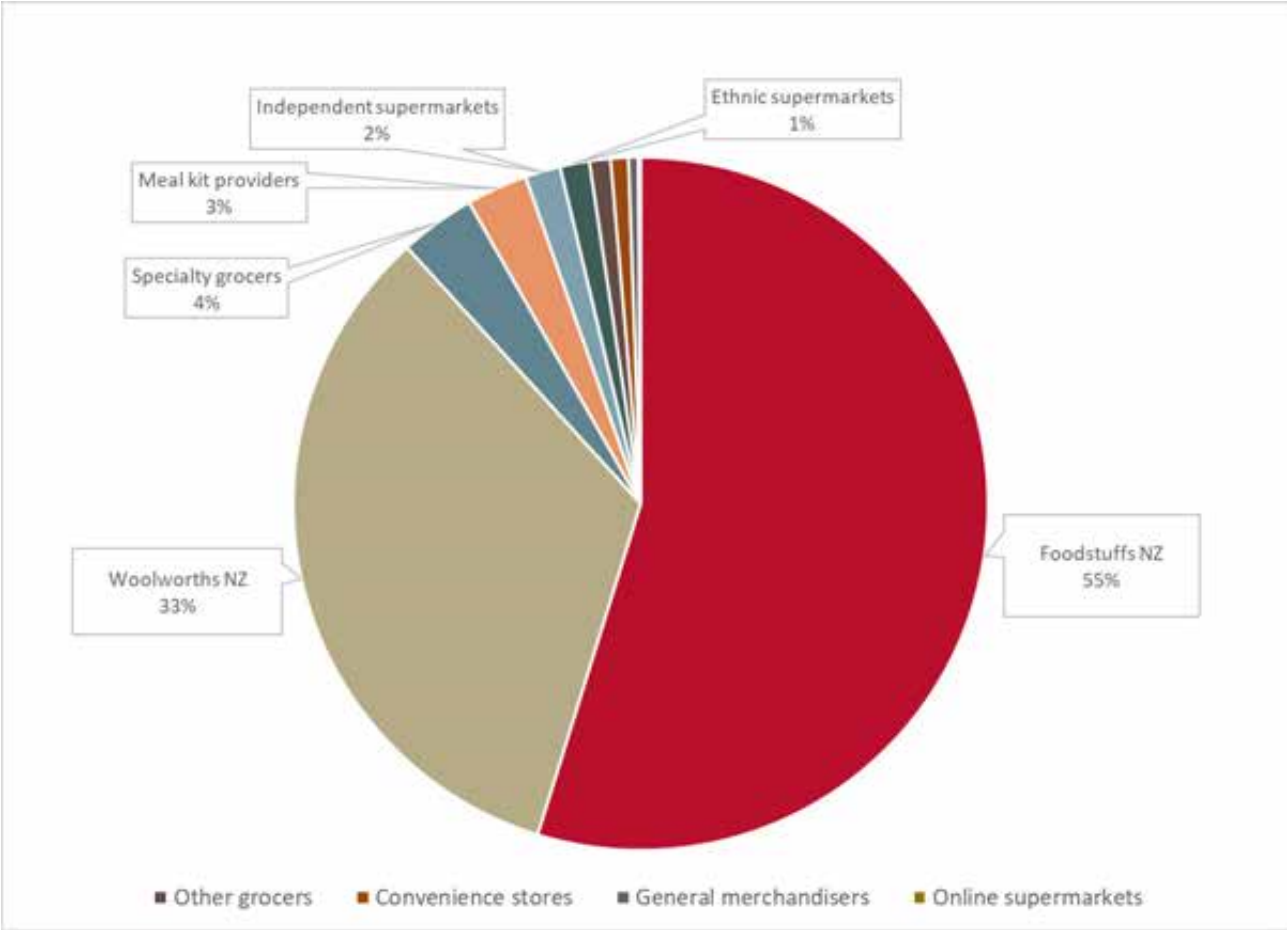


Figure 28: Estimated national market share of grocery sector consumer survey in NZ Retail Market study

Foodstuffs is the parent company for popular supermarket chains such as New World, PAK'nSAVE, Four Square, On the Spot and Raeward Fresh and has over 500 outlets across the country, while Woolworths owns over 260 supermarkets branded as Woolworths (formerly Countdown), FreshChoice and SuperValue.[1]

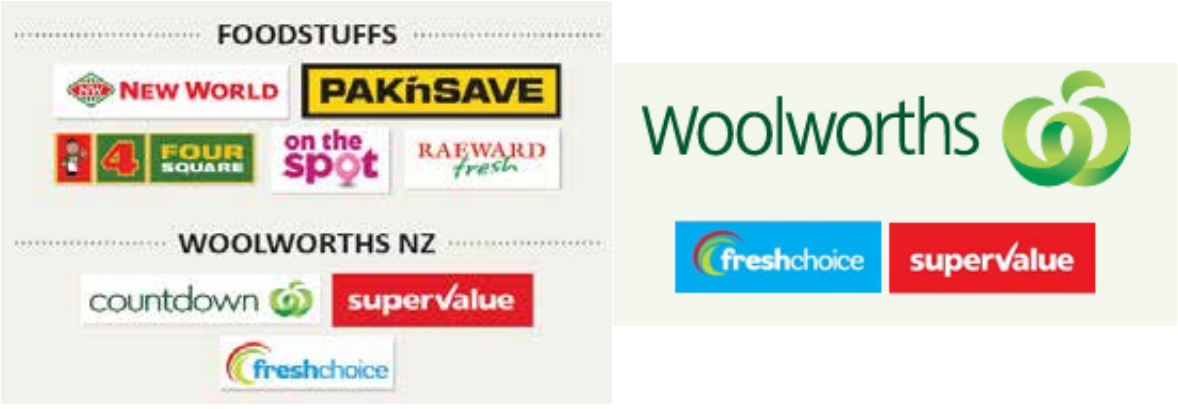


Figure 29: Foodstuffs and Woolworths Supermarket Chains

1 Fresh Facts 2024 https://unitedfresh.co.nz/assets/site/Fresh-Facts-2024-%E2%80%93-Online-Version.pdf

A key distinction is that Foodstuffs operates a cooperative model, where each store is independently owned and managed by a local grocer. As a result, Foodstuffs' headquarters has limited control over store inventory and inter-store cooperation. Woolworths follows a more traditional corporate model, with greater headquarters oversight at the retail level—an important factor to consider when entering the supermarket sector.

Other significant retailers in the produce space are:

Table 20: Non-duopoly produce retailers

Retailer	Locations
Fruit World	22 stores across Auckland region
Moore Wilson's	4 stores in Wellington region
Farro	7 stores across Auckland region
The Warehouse	43 stores throughout NZ
Tai Ping Supermarket	9 stores across Auckland
Wang Food Market	5 Stores across Auckland
Costco	1 store in West Auckland
Jack Lum & Co	Famous fruit and vegetable shop in Remuera, Auckland

In the case of pineapples, the supermarket duopoly gives the two major retailers significant purchasing power, leaving importers and wholesalers with limited leverage. Most fruit imports, including pineapples, follow a pull model, where importers only bring in what retailers have already committed to buying and what they are confident they can offload on the wholesale market. These factors combined reduce importers' ability and incentive to introduce new varieties or take risks in the market.

That being said, the larger importers in New Zealand hold considerable influence over the pineapple market, especially for the independent and specialty supermarkets that don't have the ability to source directly or influence buying decisions. Currently the four major importers of pineapple in New Zealand are:

Table 21: Major pineapple importers in NZ

Importer	Country of Origin	Brand
MG Fresh Produce Group	Philippines	Dole
Woolworths NZ	Ecuador	Terra-Sol
T&G Fresh (Turner & Growers)	Costa Rica	Fyffes
Seeka	Philippines	Sumifru

These importers primarily sell directly to major supermarket retailers through structured arrangements, supply other wholesalers (including the hospitality industry wholesalers), or act as wholesalers themselves – serving independent and specialty supermarkets and other small buyers. In Woolworths' case, they function as both the importer and retailer. Other importers/wholesalers such as Fresh Direct and Healthy n Fresh are not currently importing pineapple.

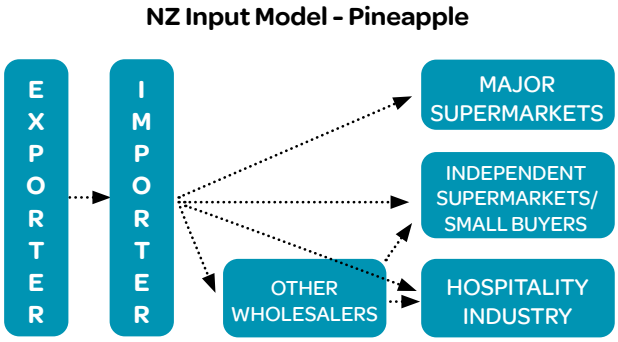


Figure 30: Pineapple import model in NZ

3.3. Brands and Varieties

The whole, fresh pineapple market in New Zealand is dominated by Dole from the Philippines, which has sent over 13 million cartons since 1993. Dole's success stems from its mastery of varietal preference, advanced post-harvest handling and cold chain management, and the strong branding of 'Tropical Gold,' which has set the standard for premium pineapples in the market.

Terra-Sol from Ecuador, Fyffes from Costa Rica, and Sumifru from the Philippines are the other current major exporters to New Zealand. With the possible exception of Sumifru's Gracio, non-Dole pineapples in New Zealand are typically sold without a brand name or, due to their varietal similarities, may benefit from the market recognition and consumer association of Dole's established 'Gold' pineapple brand.

Nearly all pineapples in the New Zealand market belong to the MD2 or MG-03 variety, both of which are derivatives of the Smooth Cayenne – the most significant commercial cultivar of the 19th and 20th centuries due to its high yield, juiciness, and suitability for both fresh consumption and canning. MD2 has been the whole, fresh pineapple standard globally since the late 1990s, as it was bred to be sweeter, more uniform in size and ripeness, and to have a longer shelf life than its predecessor.

Domestic NZ Production

In recent years, a small domestic production of Queen variety pineapples has emerged from a handful of farmers in Northland, NZ, with an estimated annual yield of less than 40 tonnes. These pineapples are primarily sold at farmers' markets direct-from farm, or other small outlets. This local supply represents, at most, less than half a percent of total market share. Domestic production is not factored or considered anywhere else in this report.

34. Retail Prices & Volume

Pineapple retail prices in New Zealand defied inflation for well over a decade from 2009 to 2022, which, in real terms, made pineapple more affordable to the general public over that time span. The post-covid era saw a dramatic spike in prices however, with the average annual retail price increasing by nearly NZD $1 (over 30%) in just three years from 2021 to 2024.[1] As with most commodities, this price hike also reflects the sustained weakness of the NZ dollar against the US dollar the last few years, with exchange rates reaching prolonged lows unseen in nearly 20 years.[2]

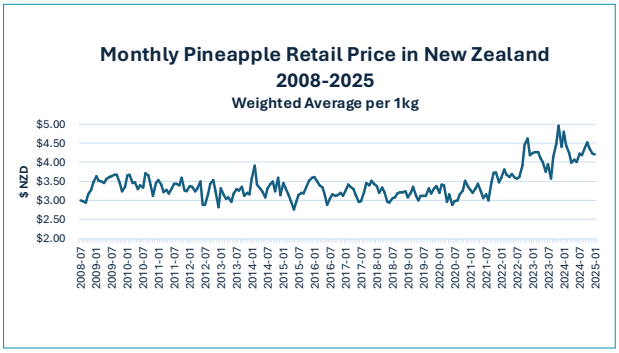


Figure 31: Monthly Pineapple Retail Price in NZ (2008-2025)

It is important to note that pineapples in New Zealand are sold per fruit, not by weight. Given that pineapples typically range from 1 to 1.5 kg each, the price per fruit may be 20% to 50% higher than the per-kilogram prices shown in the graph above. Current prices generally retail between NZD $3.50-$6 per fruit, but with specials sometimes dropping below $2 per fruit.

Figure 32: Examples of pineapple prices in NZ

A NZ consumer survey[3] conducted for this study found a broad and relatively even distribution of purchase prices, ranging from NZD $3.50 to $6.00, with about 20% of consumers pay between $6 to $8 or more per fruit.

Figure 33: Online survey response - pineapple purchase price

In terms of volume, the major supermarket chains on average move several hundred pineapples per week per store, with a few larger stores eclipsing 1,000 pineapples some weeks.[4] In terms of weight, this translates to an average weekly throughput of several hundred kilograms, with some stores handling over a tonne per week.

3.5. Market Trends

Over the last few decades, the pineapple industry has seen several promising value-added trends, including processed chunks, sealed and pouched products, and frozen options. Many of these have not lived up to expectations and fresh pineapple continues to dominate consumer demand by a significant margin, a trend partly driven by the post-COVID shift toward healthier eating habits.[5] Within the fresh pineapple space, there is growing demand for pre-cut pineapple chunks and slices, which offer convenience and less mess. Woolworths, for example, has reported double-digit growth in recent years through its centrally processed cut fruit program, which is distributed to stores in grab-and-go containers. Despite this, whole pineapples remain the preferred choice. According to Foodstuffs, approximately 90% of fresh pineapple sales are whole fruit, with only 10% sold as pre-cut portions. This is corroborated by the consumer demand survey undertaken for this study, where whole, fresh pineapple was overwhelmingly the most preferred form.

1 https://figure.nz/chart/WNZOpEoBKRyz4hBh-k2DwUfVh9lrAjMKz
2 https://www.macrotrends.net/2557/new-zealand-us-dollar-exchange-rate-historical-chart
3 Survey conducted February-March 2025. Survey is summarized in Consumer Demand section of this report.
4 Supermarket consultations
5 Overwhelming response from consulted stakeholders

One of the most innovative products to enter the New Zealand supermarket scene in the past decade is the Dole Piñabar – a machine that peels and cores a fresh pineapple in seconds. Customers select a whole pineapple from the shelf, place it in the machine, set their takeaway container at the bottom, press a button and 20 seconds later a peeled, cored pineapple arrives in your container. Some models also slice the pineapple into spears. Nearly 40 of these machines are installed, primarily in New World supermarkets across the country. Some supermarkets report that the Piñabar has doubled or even tripled pineapple sales.[1] However, these machines come at a high cost, priced in the tens of thousands of NZD each. It remains unclear to what extent non-Dole pineapples are used in the machine, but the variety likely must match the size and shape of the MD2.

Figure 34: Piñabar in New World supermarket, Dunedin

3.6. Consumer Demand

According to United Fresh, pineapple is one of the top eight fruits consumed in the country, accounting for 2% of supermarket produce department sales in NZ in 2023.[2]

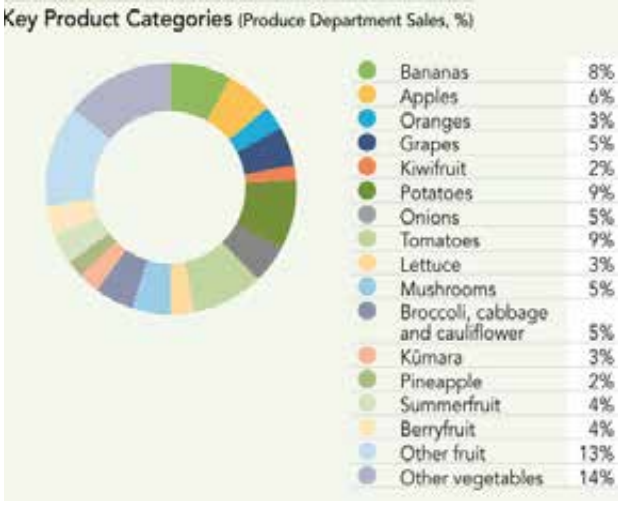


Figure 35: Fruit and Vegetable sales in NZ supermarkets 2023

Data points are quite mixed when it comes to gauging consumer demand for pineapple. At the consumer level one could safely say there is unmet demand, considering New Zealand is a relatively small, somewhat isolated, temperate climate country in the Southern Pacific Ocean with limited local tropical fruit production and often brief fruiting seasons. This dynamic helps explain the strong popularity of year-round imported fruits like bananas in New Zealand. Considering more than half of adults and nearly 30% of children are not meeting their daily recommended servings of fruits,[3] there is clearly an unmet need.

At the importer and retail level, however, the market is highly controlled, with existing suppliers well-established, offering a nationally beloved and world-renowned brand (Dole) alongside similar alternatives of varying, but reasonable quality. A possibly telling demand signal was Costa Rica's entry into the market in mid-2024, capturing 8.3% of total volume while overall imports for the year declined by 0.5%. In other words, Costa Rica's entry didn't expand the pineapple market – it simply took shares from existing importers. This trend continued through the first two months of 2025; however, supply rebounded in March, and overall for the first four months of 2025, total volume was 3% higher than the average for the same period over the previous two years[4] – suggesting modest market growth alongside a continued reallocation of market share. In 2024 the Philippines appeared to redirect some of its supply to Japan, China, and South Korea, key markets in Northeast Asia.

Consumer Demand Survey

The authors of this study conducted an online survey of the general public to gain deeper insights into New Zealanders' pineapple purchasing habits and overall preferences. Despite the relatively small sample size, clear trends emerged, providing valuable insights into consumer demand. This section covers the highlights of the survey.

Of the 151 respondents, 47% purchase whole, fresh pineapple only a few times a year, 24% purchase monthly, 17% weekly and 11% never purchase whole, fresh pineapple.

1 https://supermarketnews.co.nz/news/pineapple-sales-triple-thanks-to-new-machine/

2 Fresh Facts 2024 https://unitedfresh.co.nz/assets/site/Fresh-Facts-2024-%E2%80%93-Online-Version.pdf

3 In 2022/23, nearly half of adults (44.9%) usually ate the recommended amount of fruit (2+ servings per day). Among children aged 2–14 years, 70.9% ate the recommended amount of fruit (1 to 2 servings, depending on age). https://www.health.govt.nz/publications/annual-update-of-key-results-202223-new-zealand-health-survey

4 Stats NZ https://www.stats.govt.nz/large-datasets/csv-files-for-download/overseas-merchandise-trade-datasets/

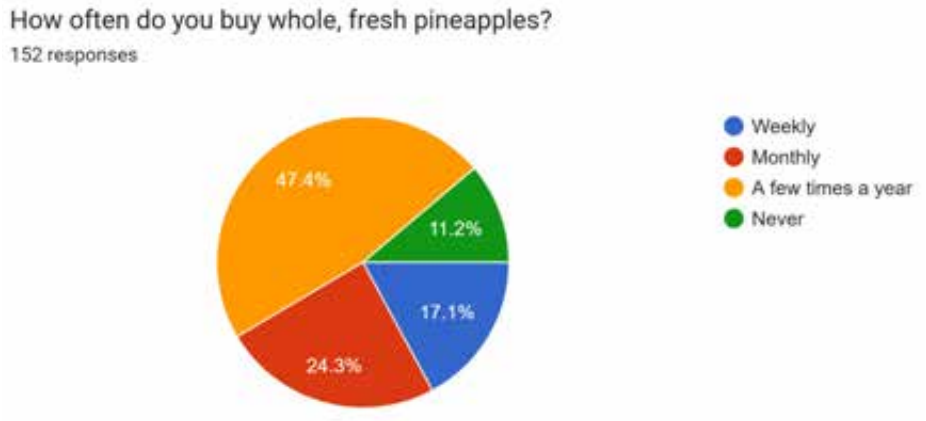


Figure 36: Online survey response - frequency of purchasing pineapple

Consumer preference overwhelmingly favours whole, fresh pineapple, with demand more than three times higher than the next most preferred option – which, notably, is also a fresh form (slices or chunks)

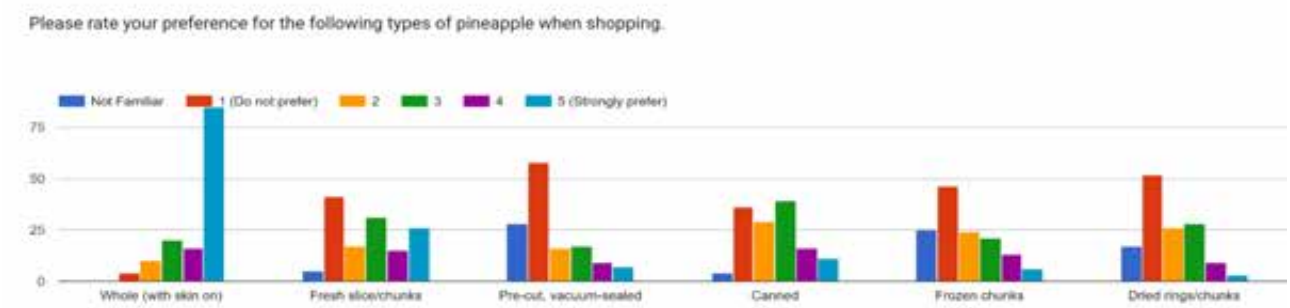


Figure 37: Online survey response - pineapple preference type

Ninety-four percent of respondents purchase their pineapples from supermarkets.

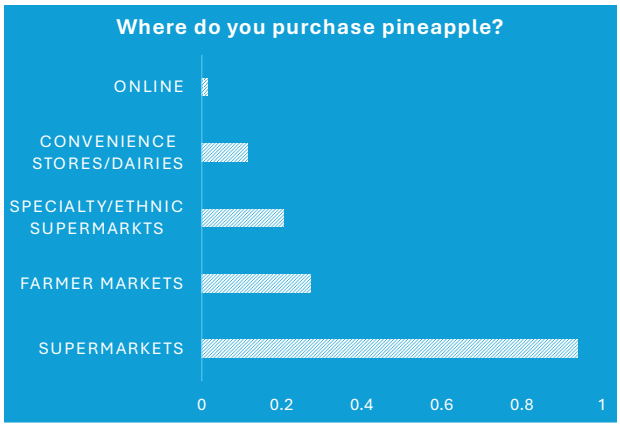


Figure 38: Online survey response - pineapple purchase location

Of consumers currently purchasing pineapple, over 87% would like to purchase it more often, and of those not currently purchasing pineapple, 53% would like to start.

What's stopping them?

Of the people not currently purchasing pineapple, 67% stated there was limited to no availability in their area, while 56% said the price was too high. Of those currently purchasing pineapple, 88% stated that high prices were sometimes an issue or a common issue and that unavailability was sometimes an issue or a common issue for 75% of respondents. Quality issues, such as taste, are also major issues for purchasers, as 88% of respondents felt quality was at least sometimes an issue. In fact, quality was by far the most commonly cited issue for pineapple consumers.

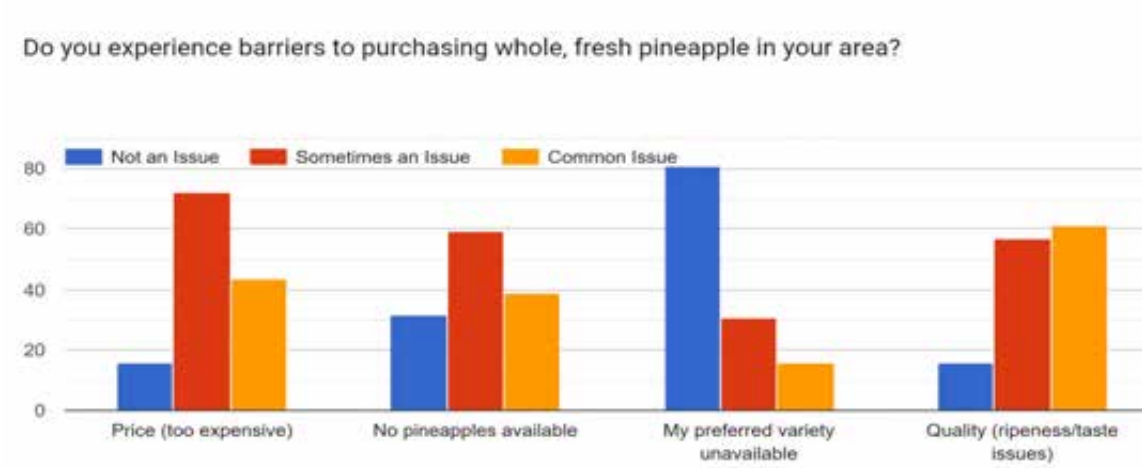


Figure 39: Online survey response - barriers to purchasing pineapple

Nearly half of respondents were confident they pay a fair price for pineapple and 72% of people would be willing to pay a higher price for a pineapple of superior taste.

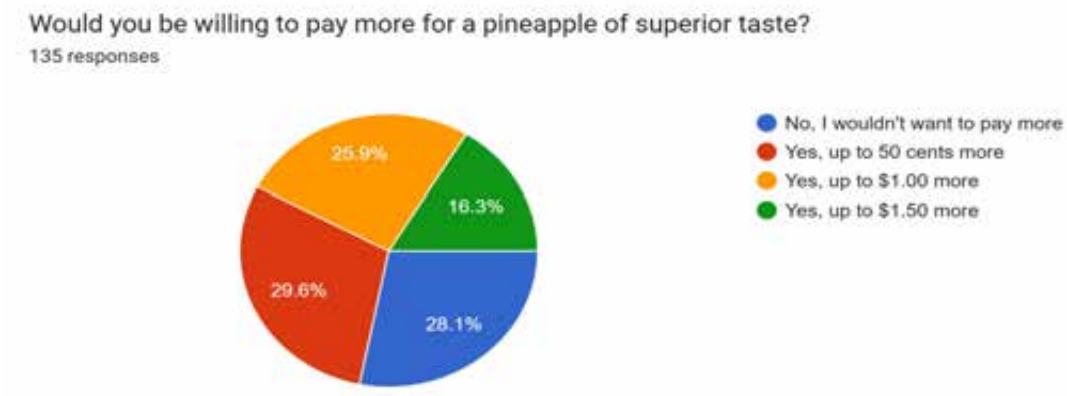


Figure 40: Online survey response - willingness to pay more

When purchasing pineapple, taste is the most important factor, followed by appearance then price. Branding, country of origin, and organic vs. conventionally grown are all minor or negligible considerations. With regards to branding, this finding contrasts with Dole's research, which suggests that pineapple is an impulse purchase driven by branding and attractive displays.[1]

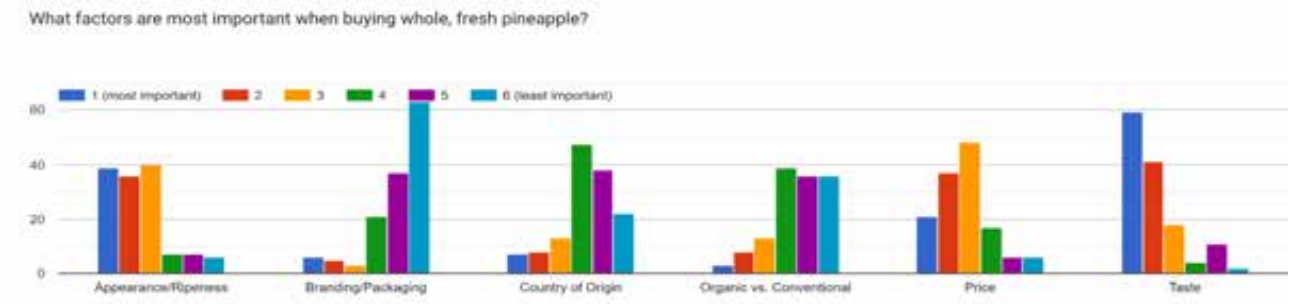


Figure 41: Online survey response - most important factors when purchasing pineapple

Key takeaways from this survey indicate that consumers overwhelmingly want to eat more whole, fresh pineapple. Supermarkets account for the vast majority of sales, with price, taste, and availability being significant factors. Despite the presence of a premium brand, there is a clear gap in the availability of high-quality pineapples in the NZ market.

1 https://www.dolenz.co.nz/uploads/media/5923606f71729/pineapple-trade-section-web.pdf

4. Fiji Pineapples in New Zealand

4.1. Fiji Pineapple Exports to NZ

In 2023 Fiji exported 12.7 tonnes[1] of Ripley Queen pineapple to New Zealand. Despite this being the highest level of exports in well over a decade, it was only one-tenth of one percent of the New Zealand market. New Zealand accounts for over 80% of Fiji's pineapple export destinations in recent years, with minor shipments going to Canada and Tuvalu over the last several years.

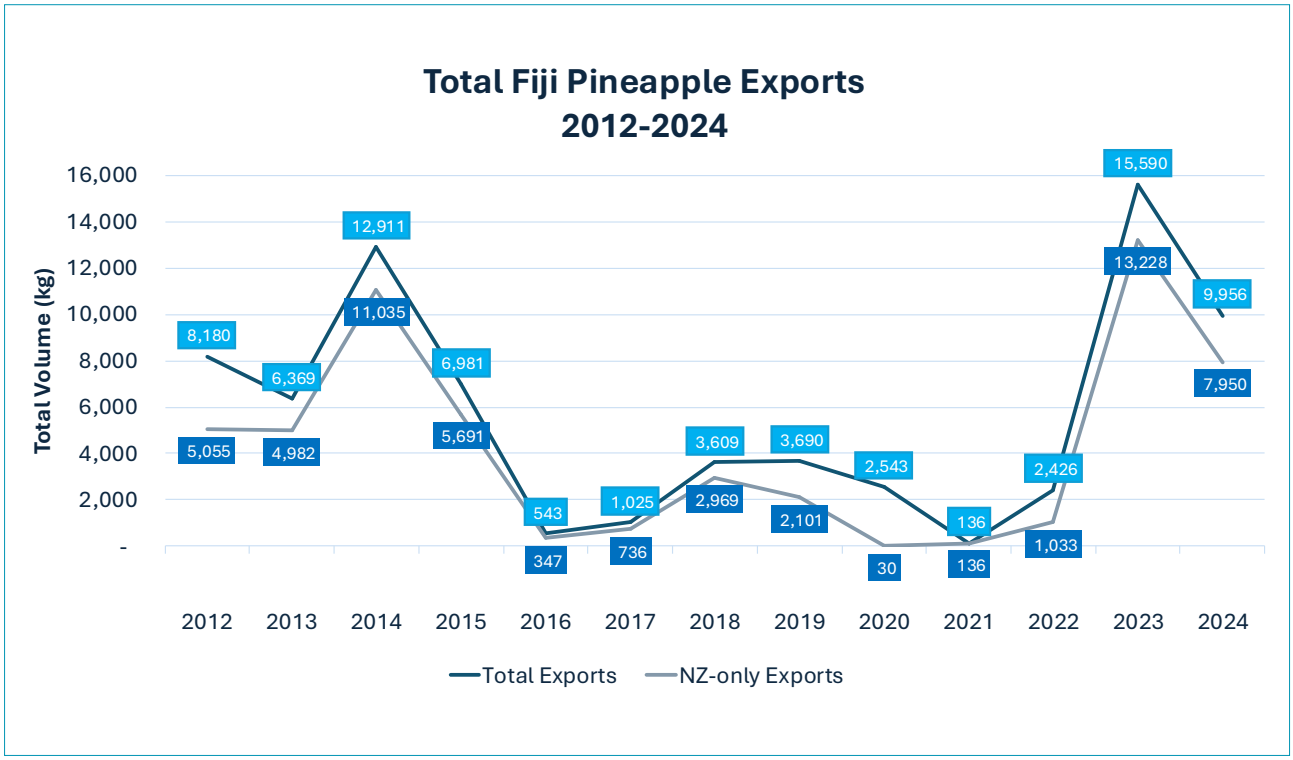


Figure 42: Fiji Pineapple Exports (2012-2024)[2]

Prior to the 2023 burst, the last concerted effort to export pineapples to New Zealand was over the 2012-2016 period by Turner & Growers, a New Zealand-based importer/exporter with an operational base in Fiji. Periodic 1-2t shipments of Ripley Queen pineapples made their way onto the New Zealand market via T&G's headquarters. According to the exporter, these shipments were well received in the New Zealand market, yet the program ended in 2016. It appears challenges with cost, quality, and supply volume – common hurdles in Fiji's pineapple export attempts – played significant roles in the discontinuation. The T&G campaign pioneered cleaning and packing protocols, such as compressed air spraying to clean and manage pests.[3]

Going back further in history, the Fiji pineapple export 'heyday' was in the early 1980s when 120 tonnes of fresh pineapple entered New Zealand annually, however this fizzled to insignificant levels by the end of the decade.[1] In the early 1990s export efforts were revived with the EU-funded Micro Pineapple Project targeting Smooth Cayenne and Veimama[2] varieties from Vanua Levu into New Zealand. Despite positive reception by the NZ market[3] this project was doomed after only a few shipments by a combination of its own cost, quality and volume issues as well as coinciding with Dole's entry into the NZ market in 1993.[4] Since that time only limited air freight quantities of Ripley Queen have made it to the NZ market.[5]

Current Fiji pineapple exports are airfreighted, typically in less than 1-tonne consignments made sporadically throughout the year. These exports generally occur between exporters and importers with familial or cultural connections and are most common during the natural peak season from November to January, when farmgate prices are most favourable. A notable exception was a significant 'mini-season' boost in April 2023, however 2024 returned to almost exclusively peak season exports in January and December.

1 Stats NZ https://www.stats.govt.nz/large-datasets/csv-files-for-download/overseas-merchandise-trade-datasets/
2 Fiji Bureau of Statistics: Note there are minor discrepancies between official statistics from Fiji and NZ (13.2t vs. 12.7t) and an even greater discrepancies based on the self-reporting of exporters (claiming even larger export amounts).
3 Stakeholder interviews

1 McGregor 2017
2 Veimama is likely a natural cross between a local "bush" variety and the smooth cayenne introduced by the Hawaiian Pineapple Co. (Dole precursor) during the short-lived cannery operation in Dreketi, Vanua Levu in the 1920s-30s. (McGregor 2017)
3 McGregor 2017
4 Stakeholder interview & Tubuna et al, 2006
5 For an excellent and concise history of Fiji pineapple, see Prasad 2024

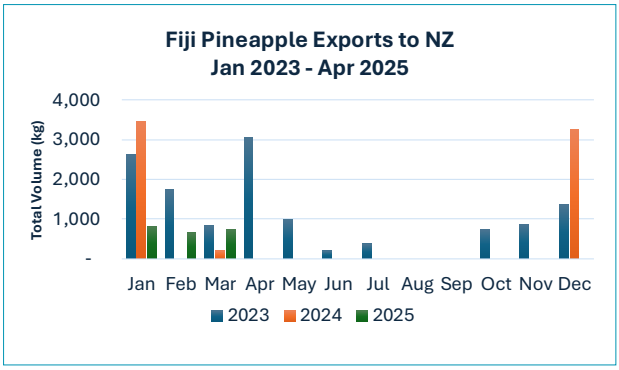


Figure 43: Fiji Pineapple Exports to NZ by month (Jan '23 - Apr '25)[1]

This study identified three active exporters, along with eight other inactive or aspiring exporters. Nearly all are located in the Western Division between Ba and Sigatoka. Pineapple consignments are often processed in the same facility and shipped alongside other fresh Fiji produce, such as eggplant, okra, turmeric, curry leaves or papaya. Fiji pineapples are typically sold in New Zealand through importers' own retail outlets, such as community markets, small dairies, or similar distribution channels, with social media playing a significant role in marketing promotions. The two main importers of Fiji pineapple at the moment are Moshims MMK and Getfresh Supermarket. Song Kee Gardens and Welkin Enterprise are understood to have also taken consignments in the recent past.

Fiji pineapples retail well above market rates and, due to size variability, are typically sold per kilogram rather than per fruit, as is standard in NZ supermarkets. Prices generally range from NZD $5.99 to $8.99 per kg, with some recent social media posts showing prices as high as $13.99 per kg.

Figure 44: Examples of Fiji pineapple for sale in NZ

4.2. Regulatory Environment & Incentives

Fiji Export Requirements

The export of pineapples from Fiji is governed by the Fruit Export and Marketing Act.[2] The general requirements are stated below.

1. **Produce Export License** – An exporter must obtain an export license for pineapple from the Biosecurity Authority of Fiji (BAF). The license fee is built into the registration and annual renewal of the export facility.
2. **BAF-Certified Export Facility** – The export license is conditional upon the exporter having a BAF-approved packhouse facility.[3] This will be approved upon satisfactory inspections by BAF.
   Registration Fee – FJD $576[4]
   Annual Inspection Fee – FJD $379
3. **Farm registration** – The exporter must source pineapples from a grower registered with BAF upon the recommendation by the Ministry of Agriculture.
   Fee – FJD $49 per grower
4. **Phytosanitary inspection** – Each export consignment requires a physical inspection and sign-off by a BAF officer confirming the consignment meets the importing country's phytosanitary requirements.
   Fee – FJD $123 per inspection

New Zealand Import Requirements

Fiji has a Bilateral Quarantine Arrangement (BQA) with New Zealand for the export of certain agriculture commodities, of which pineapple is included.

The NZ Import Health Standard (IHS) for pineapple was revised in 2024, making export conditions more favourable for countries like Fiji. IHS 2024 has relaxed certain conditions making import more open to any variety, beyond Smooth Cayenne varieties and any state of maturity so long as it's not overripe.[5] One key requirement for pineapple importation to NZ are that the stem, basal leaves and crowns must be removed – save a small remnant shaved crown stump (as pictured below). Other general requirements are that consignments must:

- meet the specific country requirements;
- be considered to be free from contamination, regulated pests, and other extraneous material;
- be packaged in clean and either new or refurbished material;
- be secured in a manner to prevent contamination; and
- be accompanied by appropriate phytosanitary documentation

1 Stats NZ https://www.stats.govt.nz/large-datasets/csv-files-for-download/overseas-merchandise-trade-datasets/

2 https://www.agriculture.gov.fj/documents/legis/FruitsExport&MarketingAct.pdf

3 https://www.baf.com.fj/export-pack-house-requirement/

4 https://www.baf.com.fj/fees-and-charges/

5 NZ Import Health Standards 2024. https://www.mpi.govt.nz/dmsdocument/61072-Fresh-Pineapple-Ananas-comosus-for-human-consumption-2024-Import-Health-Standard. Colour 4 is considered overripe.

Specific requirements for the importation of pineapples from Fiji (and other countries) can be found on the NZ MPI Product Import and Export Requirements webpage.[1] Basic measures require all commodities to be commercially produced using standard cultivation, pest-control, harvesting, inspection and packing activities. Regulated pests for Fiji include certain types of caterpillars, mealybugs, scales, leaf spot disease and black rot. Detection of any of these pests upon MPI inspection will trigger additional lab testing and ultimately fumigation of the consignment. Notably, fruit flies are not included as a regulated pest for Fiji specifically, as they are considered non-hosts.[2] MPI's fee structure depends on several factors, including the inspection location, number and duration of inspections, and number of inspectors involved to name a few.

Fiji Agriculture and Export Incentives

The Export Income Deduction Incentive, which allowed exporters to deduct up to 90% of their income from agricultural exports, was set to be discontinued in 2024 but has been extended through 2025.[3] Currently, an income tax holiday is available for large commercial agricultural investments, with a tiered structure starting at FJD $100,000.[4] The importation of all agricultural items will be subject to zero duty (specialised machinery, equipment and agricultural inputs) provided that a support letter is obtained from the Ministry of Agriculture.

4.3. Fiji's Export Challenges

Fiji's history of pineapple exports has seen highs and lows, often revealing the significant challenges exporters face. Many find it economically unviable, as evidenced by the consistently low export volumes over the past several decades. Export programs often falter—or never begin—due to a mix of farm-gate or wholesale price variability throughout the year, inconsistent supply volumes, and inconsistencies in fruit quality. This is partly because Fiji's pineapple industry is wholly focused on the reasonably strong domestic market. Farmers can sustain themselves domestically through multigenerational ratooning and other production practices, that would render the majority of fruit produced unsuitable for export. This is, of course, not true of all farmers, nor is it a matter of laziness on the part of the farmer, but a rational cost-benefit decision – where the additional effort required to produce export quality simply may not be worth the return.

Consignment Interception

A major challenge unique to the export market – and arguably the most significant hurdle for exporters and their import partners – is New Zealand's biosecurity process at its port of entry. Currently, 100% of Fiji's pineapple consignments are intercepted by New Zealand's Ministry for Primary Industries (MPI). These interceptions occur for various reasons, including incomplete paperwork or the presence of regulated pests on the fruit. In the case of Fiji pineapple, the most common cause of delayed clearance is the detection of mealybugs, which triggers additional lab testing and, ultimately, fumigation or other treatment of the consignment. One exporter emphasized that they pack pineapples in separate containers from other produce to prevent the entire shipment from being affected when the pineapple consignment is intercepted.

These delayed clearances significantly affect the importation of Fiji pineapple in three ways:

1. **Time** – Interception alone delays delivery by up to two days – a critical setback for a perishable product, which may also increase logistical costs for the importer.

2. **Cost** – MPI charges, including lab and fumigation fees cost around NZD $2,000. For a 1-tonne shipment, this adds an extra NZD $2/kg in cost, making Fiji pineapples uncompetitive in the NZ market.

3. **Shelf Life** – Fumigation drastically reduces the fruit's shelf life, in some cases cutting it in half. One importer noted they are fortunate to get even three days of retail shelf life from fumigated Fiji pineapples.

Without a definitive solution to this issue, future export efforts are likely to fail.

Interception is an industry-wide challenge, affecting even major pineapple importers in New Zealand, though less frequently than Fiji consignments. These importers are also more resilient to interception and fumigation, as the costs are spread over a larger volume and their varieties and maturity stages are less impacted (i.e., shelf life is not significantly reduced). In fact, the major importers commonly adopt a "fumigate first" strategy, whereas they voluntarily fumigate their containers upon arrival before MPI inspection, thus saving cost and critical time to keep their program running on schedule. Fiji pineapple importers are not currently permitted this privilege.[5]

4.4. Export Cost Analysis

Fiji exporters usually have sourcing arrangements with a small selection of farmers. They pay the typical farm-gate or wholesale prices for that time of year, usually between FJD $1-$2 per kg, and arrange for either pick-up or delivery to their export facility. There, teams process and pack pineapples into cartons and load into an export container.

1 https://www.piersearch.mpi.govt.nz/importing-commodities-to-new-zealand/search-by-commodity-only/search-results?commodityName=Pineapple&commodityType=5

2 https://apps.lucidcentral.org/ppp_v9/text/web_full/entities/fiji_fruit_flies_170.htm#:~:text=Also%2C%20pineapples%20are%20non%2D-hosts,and%20papaya%20at%20colour%20break.

3 Correspondence with Fiji Revenue & Customs Service

4 https://frcs.org.fj/wp-content/uploads/2025/02/Icentive-Brochure-11-Oct-2024.pdf

5 Stakeholder consultations

Figure 45: Processing of Ripley Queen pineapples at an export facility in Fiji

The container is transported either to the exporter's designated freight agent or directly to Air Terminal Services at Nadi Airport, depending on prior arrangements and the exporter's reputation. Current FOB prices for pineapple range from FJD $2.50 to $4.00 per kg, with $3/kg the most common current price. The figure below provides a historical look at FOB prices for pineapple exports to NZ.[1]

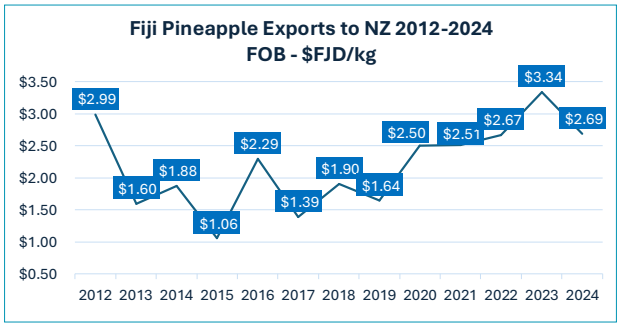


Figure 46: Average FOB prices for pineapple exports to NZ, 2012-2024

Air freight rates are tiered based on volume, starting at approximately $1.60/kg for 1 to 2-tonne shipments and dropping to around $1.30/kg for 3-tonne shipments. More competitive rates can be secured through higher export volume or frequency and standard business negotiations. Both Fiji Airways and Air New Zealand offer similar rates. The primary container options for pineapple consignments are 1.5-tonne AKE containers and 4-tonne PMC containers.

Figure 47: Example of AKE containers being loaded onto a Fiji Airways plane

Upon arrival in Auckland, the consignment is transported to an approved transitional facility, where it undergoes inspection by the Ministry for Primary Industries (MPI). MPI officers assess the shipment for compliance with biosecurity and import regulations, checking for pests, diseases, and any documentation issues. As mentioned above, due to 100% interception, these costs range from NZD $1,500 to $2,200 and is separate and in addition to other import processing costs such as entry, documentation, handling, etc., which costs an average of NZD $1,500 for a 1 to 1.5-tonne shipment.

Below is a cost breakdown of a 1.5t airfreight shipment of pineapple from Nadi to Auckland.[2]

1 Fiji Bureau of Statistics

2 Data is drawn and verified from verified exporter costs and freight agent quotes. FJD $1 = NZD $0.76

Table 22: Airfreight cost for 1.5t pineapple, Nadi to Auckland

Pineapple Shipment - 1.5 tonne AKE airfreight NAN-AKL (65kg tare weight)					
Fee/Cost	**Quantity (kg)**	**$FJD**		**$NZD**	
		$/kg	**Total**	**$/kg**	**Total**
Sale Price of Goods (FOB)	1435	$ 3.00	$ 4,305	$ 2.28	$ 3,272
Freight	1435	$ 1.50	$ 2,153	$ 1.14	$ 1,636
Agent & Airline Fees (Fiji)			$ 240		$ 182
MPI inspection					$ 800
Lab Testing					$ 500
Fumigation					$ 867
Other Import Fees (NZ)					$ 1,500
TOTAL					**$ 8,757**
Cost/kg				**$ 6.10**	
CIF/kg				**$ 3.55**	

As shown in the table above, airfreighted pineapples, coupled with lab and fumigation fees make for a very high cost per kilogram. By the time consignments are released to the importer, a pineapple costs over $6 per kg, already surpassing the high end of retail pricing. Now the importer has but a few days to sell in order to recoup the money spent on importation. It's possible to move small volumes of pineapple at these prices to niche markets, but these costs make it far too difficult to capture any meaningful market share.

One importer noted that he's almost doing this as a community service, noting the high retail prices they have to charge just to break even, and sometimes having to dump the majority of stock due to spoilage (exacerbated by fumigation).

Sea Freight

It may seem logical that the most viable option for Fiji pineapple to gain a significant foothold in the NZ market is sea freight, as it allows for much larger export volumes, spreading costs across greater quantities and significantly reducing the cost per kilogram. Here's a cost breakdown of a 20' refrigerated container from Lautoka to Tauranga, NZ, which currently takes 11 days.

Table 23: Sea freight cost for 10t pineapple Lautoka to Tauranga

Pineapple Shipment – 10 tonnes sea freight Lautoka to Tauranga Unit = 1 x 20' Reefer Container					
				Totals	
	Quantity	**$/kg**	**FJD**	**USD**	**NZD**
Sale Price of Goods[1]	10,000	$ 3.00	$ 30,000.00		**$ 22,800.00**
Fiji Export Costs			$ 784.50		**$ 596.22**
Freight Cost				$ 1,950.00	**$ 3,354.00**
BAF				$ 350.00	**$ 602.00**
NZ Import Costs					**$ 749.52**
MPI Inspection, lab, fumigation					**$ 2,500.00**
Other import costs					**$ 1,500.00**
Grand Total $NZD					**$ 32,101.74**
Cost/kg					**$ 3.21**
CIF/kg					**$ 2.74**

As shown in the table above, sea freight reduces the cost per kilogram of a pineapple consignment by nearly half. Resolving biosecurity issues would reduce that cost even further. These costs allow the remaining players in the value chain to maintain profitability, albeit at price points on the higher end of the market range.

Currently Fiji does not export pineapple via sea freight for three main reasons:

1. **Transit time** – Currently the fastest sea route to NZ takes 8 days from Suva to Tauranga (10 days from Lautoka). Fiji used to enjoy much shorter direct transits, but now vessels island-hop through the Samoas and Tonga before making their way back to New Zealand. While this is only slightly longer than shipments from the Philippines, and much shorter than the Costa Rica and Ecuador journeys, Fiji's current export variety, Ripley Queen is not bred for long distance shipping. Even under ideal circumstances, for an 8 to 10-day journey, pineapples would have to be picked so early (mature green or colour break) that they would lose their competitive advantage (taste), or if picked later for improved sweetness, risk significant loss through the remainder of the supply chain. Neither option is viable.
2. **Supply Consistency** – Meeting a single 10-tonne shipment requirement is feasible, but maintaining a steady supply at that volume without compromising quality exceeds Fiji's current production and postharvest capacity.
3. **Financial Risks** – Although sea freight is more cost-effective, it is less reliable due to frequent delays. Additionally, the larger shipment sizes increase financial exposure, making the potential losses significantly higher compared to the more manageable quantities transported by air.

In summary, transitioning to sea freight would require a significant expansion in commercial scale—one that Fiji is not currently equipped to achieve. Unless a secure market is established, the financial risks and logistical challenges make this shift highly impractical.

4.5. Varietal Suitability for Export

As discussed earlier in this report, Fiji primarily grows three pineapple varieties, with Ripley Queen by far the most common and typically associated with the 'Fiji pineapple' moniker. Smooth Cayenne and Veimama will be minimally discussed in this section. While some strongly prefer these varieties over Ripley Queen, Smooth Cayenne and Veimama are essentially precursors to MD2, offering minimal differentiation and fewer of its desirable export qualities.

Below is an evaluation of Ripley Queen's suitability for export based the collective feedback, experiences and research for this assignment.

1 While the sale price of goods may decrease due to the larger volume, sea freight introduces additional cost considerations for the exporter, such as sturdier cartons and higher energy, handling and transport costs, keeping the total cost at $3/kg.

Table 24: Ripley Queen Pineapple Export Profile

Ripley Queen Export Profile	
Pros	
Export ready (quantity-wise)	Already being exported, already grown in significant quantities
Product differentiation	Different look and taste from market competitors
Strong reputation and branding opportunity	Fiji pineapples are known for their exceptional sweetness, with potential to leverage the 'Fiji Water' effect.
Hardy	High resistance to pest and disease, and to most bruising and handling issues
Sweet	16-17°Bx when ripe, 13-14 °Bx when half ripe[1]
Cons/Questions	
Shelf life	Significantly shorter than MD2 – 12-14 days vs. 30 days
Not juicy	Also has a dry, fibrous core
Higher biosecurity scrutiny	Some stakeholders feel RQ has more biosecurity issues due to its deeper eyes potentially harbouring more pests.
Questionable demand	Unclear if desirable beyond niche markets. Mixed reviews on taste and if positive reputation is still valid under current production conditions
Lightweight	Lower value when sold per kg (export) than if sold bundled domestically
Challenges	
Quality	Taste and size issues are present under current production practices
Consistency of supply	Despite high production, hormone application is still not mastered for consistent fruiting throughout the year. Also limited supply of export-quality fruits
Cost	High farmgate, air freight, and MPI fees

1 According to Seaqaqa Research Station

MD2 in Fiji

Fiji obtained MD2 planting material in 2024, which is currently being propagated at the Sigatoka Research Station.[2] The likely long-term plan is to build sufficient quantities for the export market. At the time of this writing, 500 MD2 planted are in the ground, with another 1,500 expected to be released from the Pacific Community tissue culture lab over the next several months. From these 2,000 plants, it would take about 7.5 years to reach export level quantities.

If the variety grows successfully under Fiji's climatic conditions, MD2 presents a significant opportunity for Fiji to establish itself in the pineapple export market in New Zealand and beyond.

- ✓ It's the market preferred variety
- ✓ It has superior shelf-life
- ✓ It's suitable for sea freight, thus higher volumes at lower cost
- ✓ Lower likelihood of harbouring pests due to its eye shape and its ability to be picked earlier – while still sweet – before ripe-sensitive pests move in.
- ✓ More fumigation-resilient due to Its longer shelf life[3]

2 Per consultation MoA is also introducing three other varieties: Imperial, Azuba and an ornamental

3 As evidenced by the regular practice of current MD2 importers to voluntarily fumigating their consignments

It should also be noted that a sea freight-able pineapple variety, such as MD2, is key to enabling participation from all divisions in Fiji—particularly Vanua Levu—in the pineapple export trade. In contrast, airfreight programs would be largely confined to the Western Division due to the limited shelf life of traditional varieties and the inability to absorb additional transit, handling, and associated costs. The extended shelf life of MD2 overcomes many of these constraints, allowing for broader and more meaningful participation across the country.

4.6. Conditions for Export to NZ

The major importers and retailers interviewed for this study listed several conditions Fiji would need to meet in order to be stocked in major supermarkets.

1. **Price competitive** – Fiji pineapple must be able to retail within the same range as current market brands
2. **Product differentiation** – Fiji pineapple must have a tangible point of difference from current market brands
3. **Size/Weight** – Must deliver uniform size and weight pineapples, comparable to what's on the current market
4. **Quality and Consistency** – Must deliver top quality pineapples on a recurring basis, year-round.
5. **Shelf life** – Must have at least one-week of retail shelf life
6. **GlobalG.A.P. certification** – required for access to major supermarket chains such Foodstuffs and Woolworths, as well as the major importers/wholesalers.
7. **Free of biosecurity issues** – Must be able to routinely clear biosecurity with minimal to no issues.

Each of these conditions is discussed in detail below.

1. Price Competitiveness

Fiji pineapples are the most expensive pineapples entering the New Zealand market. Official NZ import data show that in 2023, Fiji's pineapple CIF cost was nearly double the market rate. While 2024 data suggest a significant cost reduction, this may be due to a smaller sample size and the fact that exports occurred only during peak season when farmgate prices are at their lowest. As discussed in the previous section, research for this study indicates CIF prices around NZD $3.50 per kg.

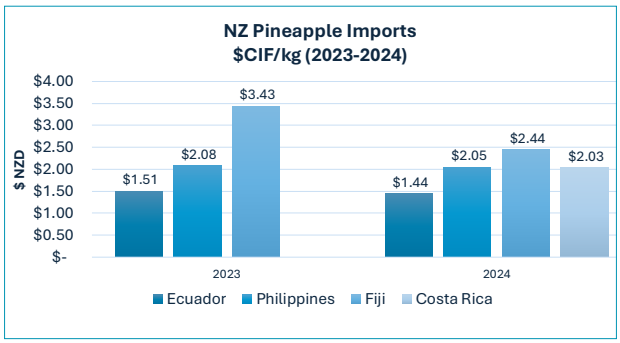


Figure 48: CIF cost/kg for NZ pineapple imports (2023-24)

Major importers will not consider a pineapple that cannot compete within the same price range as Dole and other established suppliers. As the data shows, Dole commands a premium price and is regarded as the top brand in the market. While Costa Rican and Ecuadorian pineapples do not quite match Dole's quality, they compete effectively on price. Stakeholder feedback study suggests that Fiji is unlikely to command a premium price, as that position is already occupied by Dole. Research for this study indicates that the maximum landed price[1] consideration for Fiji pineapples would be NZD $2.50 per fruit, or roughly $25–$30 per carton.

It is extremely unlikely that Fiji would be able to deliver in this price range via air-freighted pineapples. They can likely delivery in this range with sea freight, which would require the production of an export variety such as MD2.

2. Product Differentiation

This is perhaps where Fiji has the greatest potential to compete in the New Zealand pineapple market. Ripley Queen is a completely different variety from the Smooth Cayenne-derived varieties currently available, such as MD2 and MG-03. When grown under optimal conditions, its taste is hard to match. One of Auckland's best-known fruit grocers, Jack Lum, recently stated that Fiji pineapple is "one of the best pineapples in the world, no comparison to Dole." Current Fiji pineapple importers note that when high-quality fruit arrives, it is extremely well-received by a wide range of NZ consumers, particularly among Islander and Asian demographics.

Of course, the point of difference does not necessarily mean a varietal difference, as, unfortunately, no major importers were interested in the Ripley Queen variety or any pineapples currently grown in Fiji. Some importers were very interested, however, in the prospects of a Fiji-grown MD2-like variety shipped in sea freight volumes.

Another key point of difference for Fiji is that, unlike the large corporate farms supplying the New Zealand market, its pineapples are sourced from small farmers. This presents an opportunity to market the socioeconomic value of Fiji pineapples as a unique selling point.

3. Size and Weight

Pineapple imports to New Zealand are sold and delivered in cartons, typically weighing between 10–12 kg each, with the higher end being more common. The number of pineapples per carton is referred to as the count. While the market generally ranges from 7 to 12 count, the preferred range is 8 to 11, with 8-count being the market standard. Assuming a 12 kg carton, an 8-count would consist of 1.5 kg pineapples, while a 12-count would have 1 kg pineapples.

Due to current ratooning programs and the naturally lower juiciness of Ripley Queen, most Fiji pineapples would struggle to exceed 1 kg in weight. In contrast,

1 Landed price generally includes CIF (Cost, Insurance, and Freight) plus applicable import & biosecurity charges

Smooth Cayenne-derived varieties like MD2 are inherently larger and heavier, meeting carton weight requirements with fewer fruits.

As evidence by photos in this report and on the ground observations, exported Ripley Queen pineapples vary considerably in size as well.

4. Shelf Life

Major retailers in New Zealand require a minimum shelf life of one week at the retail stage. This means the product must remain marketable for at least one week after reaching supermarket shelves, regardless of the time taken from harvest through transit and distribution.

Currently, Dole pineapples achieve a retail shelf life of approximately two weeks in New Zealand, supported by the 10-day transit time from the Philippines. In contrast, Ecuadorian and Costa Rican pineapples typically have about a one-week retail shelf life.

If biosecurity issues are resolved, airfreighted Ripley Queen pineapples from Fiji could realistically achieve a shelf life of one week or more. However, under current conditions, fumigation reduces Fiji pineapples' shelf life to just half a week in most cases.

5. Consistent supply

Any structured supply arrangement between importers and exporters depends on the ability to deliver high-quality pineapples at scale, consistently, year-round. Major importers will not tolerate drastic seasonal fluctuations or unreliable supply. Perhaps even more crucial than sheer volume is the frequency of delivery, which is largely dictated by retail shelf life. For instance, Philippine suppliers typically deliver every two weeks to align with their product's two-week retail shelf life, while suppliers from Costa Rica and Ecuador deliver weekly to ensure shelves are restocked in time. These larger exporters often ship multiple 40' containers per shipment, each holding 1,500 to 1,760 cartons per container. A single Dole shipment, which has a dedicated fleet of ships delivering pineapple, papaya and banana to New Zealand, can exceed a dozen containers and over 30,000 cartons of pineapple.

Ensuring consistent delivery at the production level requires precision in flowering hormone application, allowing for predictable and consistent fruiting year-round. With advancements in this area and other improvements, Fiji could strengthen its airfreight program for Ripley Queen pineapples, supplying higher volumes to targeted market niches. If sea freight becomes viable, Fiji could begin with one 20' container shipment every two weeks and scale up from there.

Any compromise on quality in pursuit of quantity – an issue that has affected previous Fiji export attempts – would likely result in a short-lived program.

6. GlobalG.A.P. Certification

GlobalG.A.P. (Good Agricultural Practices) certification is required for access to major importers and the supermarket chains such as Foodstuffs and Woolworths. It is a farm-level certification system that sets voluntary standards for food safety, environmental sustainability, and worker welfare, primarily to meet the sourcing requirements of major retailers. While its stated purpose is to standardise farming and food production practices for global market access, in practice, it functions as a mechanism for transferring and concentrating governance power over agricultural supply chains in the hands of large corporate farms and transnational agribusinesses – often at the expense of small and medium-sized farmers.[1]

Obtaining systems certifications such as GlobalG.A.P. remains out of reach for most operators in Fiji's agriculture sector due to both cost and limited human resource capacity. GlobalG.A.P. certification alone would cost a Fijian farmer several thousand US dollars in fees and licensing, not including the potentially significant costs of preparing a farm for audit readiness.[2] Maintaining certification would likely require additional personnel for record-keeping and compliance – impractical and unviable in most cases. To date, only one farm in the entire country, not a pineapple farm, holds GlobalG.A.P. certification. Producer group-level certification is available and may be more suitable for Fiji's smallholder farmer context; however, the associated costs and compliance requirements remain significant.

Even if initial certification costs were fully donor-funded, maintaining GlobalG.A.P. compliance would significantly increase the cost of pineapple exports – something Fiji cannot afford. Fiji's best chance of overcoming this challenge lies in adapting GlobalG.A.P. into a more appropriate local or regional standard that is achievable for Fijian farmers and farmer groups,[3] or by the slight possibility of negotiating exemptions or alternative arrangements with major supermarket chains. Otherwise, Fiji pineapple exports may be limited to supplying only smaller importers and retail outlets.

7. Biosecurity Solution

While not always explicitly stated by importers or retailers, a fundamental requirement for any successful export program is the ability to consistently deliver a pest-free product through reliable systems. MPI interceptions add cost, cause delays, may shorten shelf life – or even jeopardize an entire consignment. Until confidence in Fiji's systems and ability to meet these standards improves, major buyers will remain hesitant to engage.

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1 In the mid-2000s, Ghana's once-thriving smallholder pineapple farmers were nearly wiped out due to the industry's shift to the MD2 variety and the costly requirements of GlobalG.A.P. certification. https://utppublishing.com/doi/10.3138/9781487522476.005

2 Price may improve in the near future with the planned establishment of a locally-based consultant/auditor.

3 PHAMA Plus is already engaged with MoA in this regard. https://www.instagram.com/phamaplus/p/C7AwVcSvXnj/?locale=no

Currently, Fiji pineapples receive minimal pre-export treatment beyond de-crowning and light cleaning, such as dry wiping, brushing, or air blowing. This is largely because most treatments, including wet washing, can strip the fruit's natural wax layer, reducing shelf life. As a result, exporters not only face the cost of treatment but may also need to recoat the pineapple to maintain its freshness.

Compare this to Dole, where after being picked in the field, pineapples undergo a rigorous washing and quality control process. This includes an initial wash to remove bugs and dirt, followed by a high-pressure water spray to eliminate any remaining residue. Next, a chlorinated water spray is applied to help control mould and pathogens. The fruit then undergoes a final drying and waxing process before being sorted and packed.[1] Furthermore, Dole Philippines holds no fewer than six international certifications for quality systems and pest management.[2] New Zealand MPI inspectors have significantly greater trust and confidence in these robust systems, as they do with other major corporate exporters. Two of the three exporters consulted for this study were HACCP certified.

The solution to this challenge is complex. As discussed above, the issue is not simply a matter of underdeveloped systems in Fiji – even large exporters like Dole, with rigorous post-harvest treatments, still face regular interceptions. Fiji cannot afford to invest in costly treatment measures only to encounter the same outcome. A combination of diplomatic engagement and coordinated industry action may offer the most viable path forward, as outlined in the recommendations section of this report.

4.7. Fiji Tourism Industry Feedback

This study also gathered feedback from over 10 tourism operators, primarily hotels in Fiji's Western Division. Tourism sector satisfaction with Fiji pineapples can serve as a reasonable proxy for potential export market reception. As shown below, Fiji's pineapple industry still struggles with supply consistency, even in domestic markets. Taste, price, and size/shape also received mixed reviews.

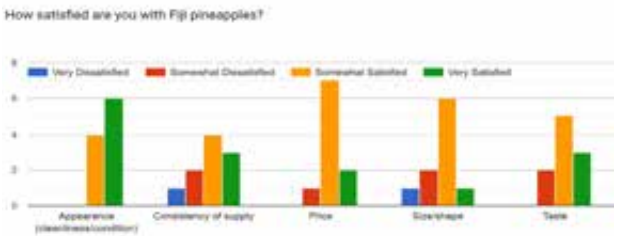

Figure 49: Online survey response - Fiji tourism industry's satisfaction with local pineapple

5. Market Opportunities and Comparative Benchmarking

5.1. Realistic Market Opportunities

To summarize the section above, while some retailers are open to the idea of Fiji pineapples, the country currently lacks a scaled variety that meets all, or even most, conditions for export to NZ. The main shortcomings are price, sea-freight suitability, shelf life, and a biosecurity solution. Major importers and supermarkets are unwilling to take risks on existing Fiji varieties but several have expressed interest in a program with an export-bred variety like MD2. Current Fiji pineapple importers are eager to expand their programs, but the cost per kilogram must be reduced by increasing volume and addressing biosecurity issues that significantly impact cost and shelf life.

Based on this study's findings, there are two realistic paths forward for Fiji pineapple:

1. Improve the airfreight model with the Ripley Queen variety, and/or
2. Invest in full-scale MD2 production, aiming for sea freight exports within seven years.

Improved Ripley Queen Exports via Air Freight

Moderate success can be achieved with air-freighted Ripley Queen pineapples, but this must be at increased volumes and a lower cost per kilogram. This program would begin outside of the major importers and supermarket chains, focusing on farmers markets, independent grocers and specialty shops. This success hinges on the following:

1. **Higher plant densities** – achieving 37,000 to 50,000 plants per ha
2. **Improved quality vs. quantity ratio** – through better ratoon management and getting back to F1 and F2 cultivars
3. **Increased year-round production** – through enhanced hormone application for consistent flowering (aided by comprehensive cropping calendars)
4. **Improved post-harvest handling** - of pineapples to reduce bruising and loss
5. **Exporters being more selective with export fruits** (e.g. taking the top 20% of fruit from multiple suppliers, vs. taking an entire stock from one supplier)
6. **Improved pest management/biosecurity solution** – to resolve NZ MPI biosecurity interceptions. This will take a wholistic approach with government, farmer and exporter working together and will likely include bilateral negotiations supported by industry lobbying.

Both current exporters and importers reported the capacity to deliver up to 3t per week. Here's a revised costing assuming cheaper air freight (FJD $1/kg) at higher volumes (3t) and minimal to zero biosecurity issues in New Zealand.

1 https://www.dolenz.co.nz/uploads/media/5923606f71729/pineapple-trade-section-web.pdf
2 https://www.dolenz.co.nz/about/trade

Table 25: Hypothetical airfreight costs after recommendations implemented

Pineapple Shipment - 2 x 1.5 tonne AKE airfreight NAN-AKL (65kg tare weight)					
Fee/Cost	**Qty (kg)**	**$FJD**		**$NZD**	
		$/kg	**Total**	**$/kg**	**Total**
Sale Price of Goods (FOB)	2870	$ 3.00	$ 8,610	$ 2.28	$ 6,544
Freight	2870	$ 1.00	$ 2,870	$ 0.76	$ 2,181
Agent & Airline Fees (Fiji)			$ 240		$ 182
MPI inspection					$ 500
Other Import Fees (NZ)					$ 1,500
TOTAL					**$ 10,907**
Cost/kg				**$ 3.80**	
CIF/kg				**$ 3.10**	

This model alone reduces cost per kg by nearly 40%, leaving enough room to successfully move pineapples through expanded niche markets. Success in this area could possibly springboard other opportunities, such as trials or stocking in major supermarket chains at limited locations.

MD2 exports via Sea Freight

If costs are comparable to those of other major exporters (as demonstrated in the sea freight section), this new Fiji pineapple variety could likely capture significant market share from Ecuadorian and Costa Rican pineapples. Its shorter ocean journey and the strength of the Fiji brand would make it more appealing than these distant competitors.

This program would target major importers and major supermarket chains. As mentioned above, a 20' container shipment (approximately 10t) every 2 weeks should be sufficient to start, with scalability built from there.

One of the major challenges for MD2 will be scaling up propagation quickly enough begin an export program as soon as possible. Starting with 2,000 plants this year, and relying on natural propagation through slips and suckers, it would take approximately 7.5 years to build up to export volumes.[1]

1 Author's own estimate based on available information. Detailed timelines from MoA were unavailable.

Table 26: Simple Propagation Calculator for MD2

MD2 Pineapple Propagation Calculator					
Assumptions:	Slips/suckers per Plant	3			
	Fruiting Cycle (months)	18			
	Average Fruit Weight (kg)	1.3			
Cycle	**New Plants**	**Total Plants**	**# Fruits**	**# Months**	**# Years**
0	2,000	2,000		0	0
1	6,000	8,000	2,000	18	1.5
2	24,000	34,000	8,000	36	3
3	102,000	144,000	34,000	54	4.5
4	432,000	610,000	144,000	72	6
5	1,830,000	2,584,000	610,000	90	7.5

In general, all recommended improvements for Ripley Queen listed above would also apply to MD2.

5.2. Comparable Commodities

When assessing the viability of Fiji's pineapple exports, it is prudent to consider other Fijian commodities that have achieved success in overseas markets. Perhaps the most comparable – and Fiji's most successful fruit export[1] – is papaya (pawpaw). Fiji's Red Papaya is nearly an $FJD million-dollar export commodity, having achieved moderate success in both the New Zealand and Australian markets over the last two decades.

Export volumes have fluctuated significantly since papaya emerged as a prominent export commodity in the late 1990s, ranging from as high as 800 tonnes per year to as low as 100 tonnes, with an average of nearly 300 tonnes per year over that period, with average annual exports falling to only 170 tonnes since 2016.[2] [3] Over the last two years, Fiji has exported an average of 145 tonnes per year to New Zealand, with a declared annual value of FJD $642,000 on average. This equates to nearly 3 tonnes of papaya per week, which aligns with the target goal for an improved air freight program for pineapple.

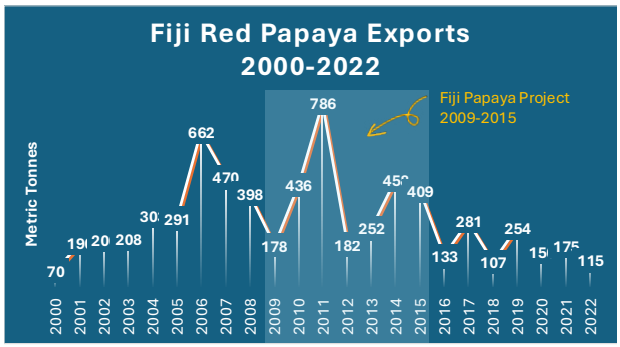

Figure 50: Fiji Papaya Exports 2000-2022

A major factor in papaya's success is the industry-owned and operated quarantine treatment facility, Nature's Way Cooperative (NWC). This facility provides High Temperature Forced Air (HTFA) treatment to ensure papaya, along with eggplant, mango, and breadfruit, meets stringent quarantine requirements where fruit flies are the pest of main concern. Strategically located next to Nadi International Airport, NWC also offers hot water treatments, grading, packing, and cooling services on-site. Beyond quarantine services, NWC plays a crucial role in industry support, offering strong extension and association-like services to its members. These include supplying production inputs (such as certified seed, fruit fly traps, and field crates), investing in export market access, and delivering research and extension services to support papaya growers and planting programs aimed at increasing the supply of export-grade fruit.

Figure 51: Fiji Red Papaya (PC: Nature's Way Cooperative)

Papaya has been the focus of significant funding and research in recent years, including the ACIAR-funded Fiji Papaya Project (2009–2015),[4] which aimed to strengthen the Fijian papaya industry. The project successfully improved varietal selection, seed certification, seedling production, and grower training while enhancing cyclone resilience and post-harvest practices. It also refined export supply chains, trialled organic production, and identified new market opportunities.

The project also proved the viability of sea freight shipping with a successful 12-day transit to Auckland in 2011 at nearly half the cost of air freight, yet no meaningful attempts at sea freight have occurred since.[5] The main constraints are consistency of supply at scale – largely due to a fragmented exporter base that lacks the coordination needed for larger volumes – and the risk of longer transit times.

Another key advantage of Fiji papaya over pineapple is its unique and highly sought-after variety in a less competitive market. While Dole's yellow papaya dominates supermarket shelves, Fiji Red offers a premium alternative, capturing over 20% market share despite not being stocked in major supermarket chains. With more competitive pricing and consistently higher volumes, Fiji Red Papaya has strong potential to penetrate the supermarket sector. Fiji pineapple also boasts a distinctive variety in Ripley Queen, but its demand in the New Zealand market is less established and lacks the clear market distinction that Fiji Red Papaya enjoys.

1 Eggplant is considered a vegetable for export purposes

2 https://www.aciar.gov.au/sites/default/files/2022-12/IAS104%20Papaya_web.pdf

3 Since 2016 Fiji has been hit with several major cyclones and floods as well as the COVID-19 lockdown period causing major disruptions to production and supply chains.

4 Strengthening the Fiji papaya industry through applied research and information dissemination – Final Report - https://www.aciar.gov.au/sites/default/files/2020-10/final-report-PC-2008-003.pdf, Impact Assessment - https://www.aciar.gov.au/sites/default/files/2022-12/IAS104%20Papaya_web.pdf

5 Ibid.

Table 27: Fiji Red Papaya vs. Fiji Ripley Queen Pineapple comparison

Criteria	Fiji Red Papaya/ Pawpaw	Fiji Pineapple (Ripley Queen)
NZ Market Share *(Fiji export total/NZ import total)*	21% *(145t/685t)*	.1% *(12t/9,000t)*
Mode of transport	Airfreight	Airfreight
Biosecurity issues	Resolved	Unresolved
Retail Price in NZ	Moderate – High	Very High
Competition from NZ farmers	Nil	Nil
Competition from other exporting countries	Moderate	High
Unique variety in high demand	Yes	Somewhat
Yield per hectare	60-80 t/ha	40 t/ha[1]
Average Harvest time (from planting)	9-10 months	15-18 months
Susceptibility to natural disasters	High	Low-moderate

In summary, Fiji papaya has met more of the key conditions for export success than pineapple, enabling it to capture a significantly larger market share. Several advantages that papaya holds over pineapple are papaya yields 60–80 tonnes per hectare – nearly double that of pineapple – and harvest begins in about half the time, making it a highly productive crop. However, one advantage pineapple holds over papaya is its lower susceptibility to extreme weather events and disease, which could contribute to a more stable and predictable supply – an important factor for building confidence with export markets.

Key Takeaways for Fiji Pineapple

- **Association or Cooperative** – Fiji pineapple could greatly benefit from adopting elements of the papaya model, particularly through the establishment of an industry body that streamlines biosecurity processes and provides extension and association-like services, similar to NWC. However, it is important to recognize that much of NWC's viability stems not just from papaya but also from processing complementary crops like eggplant, which has surpassed papaya in export value. A diversified approach may be necessary to ensure the long-term sustainability of a similar entity for pineapple.

- **Volume at scale** – Despite Fiji Red Papaya's success with airfreight, the industry has yet to scale to sea freight volumes, despite this being a key recommendation for over a decade. This is largely because no single exporter can consistently achieve the required volume, and coordinating supply across multiple exporters remains challenging. As a result, airfreight remains the only mode of export for papaya. Therefore, efforts to develop a pineapple sea freight program will need to consider an organizational structure capable of aggregating and coordinating supply effectively.

- **Development Program** – Fiji's pineapple industry would benefit from a dedicated development initiative akin to the Fiji Papaya Project. While ACIAR and the EU have funded valuable research on pineapple production and post-harvest handling in the last ten years,[2] a broader, more integrated program is needed – one that covers the entire value chain from production to export, expands geographic reach to engage more farmers, and strengthens industry coordination. By leveraging proven strategies from the papaya sector, Fiji pineapple has the potential to achieve greater export success.

1 Not currently achieved in Fiji due to suboptimal plant density

2 Underhill 2021 https://www.aciar.gov.au/sites/default/files/2021-09/final-report-HORT-2014-077.pdf; Van Santen & Stice 2017 "Pineapple Production in Fiji: Trainer's Guide"

5.3. Comparable Countries

The majority of pineapple-exporting countries are larger nations from Central and South America, Southeast Asia, and parts of Africa. These countries export at significant commercial volumes. In contrast, only a handful of Small Island Developing States (SIDS) like Fiji participate in the global pineapple export market, often on a much smaller scale.

Air Freight: Mauritius & Réunion Island

Two islands that have achieved remarkable success with airfreighting pineapples, which Fiji could emulate, are Mauritius and Réunion Island,[1] both located off the coast of Madagascar in the Indian Ocean. These islands almost exclusively grow and export the Queen Victoria variety, similar to Fiji's Ripley Queen, and is marketed as a premium product in niche EU markets, particularly in France. Interestingly, both islands turned to pineapple cultivation as an export commodity due in part to the decline of their sugarcane industries, a challenge also faced by Fiji.

Mauritius and Réunion have populations comparable to Fiji, yet much larger economies at just a fraction of the land mass, as shown in the table below.

Table 28: Country Comparison – Fiji, Mauritius and Réunion

Country Profile Indicators	Fiji	Mauritius	Réunion
Land Area	18,274 km²	2,040 km²	2,511 km²
Population	926,276	1,268,280	896,175
Population Density	46.4/km²	618/km²	360/km²
Arable Land Area	2,000 km² (11%)	755 km² (37%)	427 km² (17%)
Nominal GDP ($USD)	$5.5 billion	$16.5 billion	$21.8 billion
Annual Pineapple Exports	15.6 t [2]	1,722 t [3]	1,500 t [4]

While the peak export season is from October to February, Mauritius airfreights on average about 145 tonnes a month, with Réunion slightly less. As Queen Victoria is a smaller variety, export pineapples generally range from 500-900g per fruit. In France, Mauritius pineapples wholesale about 45% higher than other non-Victoria air freight pineapples and 2.5 times (250%) higher than sea freight pineapples per kg. Réunion pineapples on average cost about 10% more than those of Mauritius.[5]

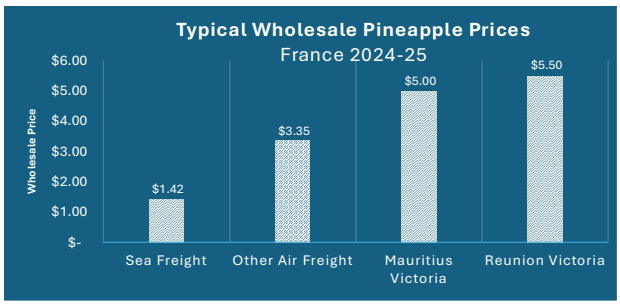

Figure 52: Price comparison of Queen Vitoria pineapples with other varieties in France

Figure 53: Examples of Queen Victoria pineapples and branding from Mauritius (top) and Réunion (bottom)

Mauritius and Réunion have achieved consistently high volumes of pineapple exports by airfreight due to several key factors:

- **A truly premium variety** – the Queen Victoria pineapple, renowned for its sweetness and fragrance
- **Strong branding and marketing** – as a premium pineapple from a tropical paradise, promoting next day freshness,[6] and including French origin labelling in the case of Réunion (Label Rouge)[7]
- **Rigorous quality standards** – including minimum ripeness at harvest and strict harvest-to-retail timeframes to preserve taste and uphold the premium brand image

1 Mauritius is an independent nation. Réunion is an overseas department and region of France (i.e. fully part of France)
2 2023 Fiji export data
3 Mauritius last 10 year average https://divercitytimes.com/agriculture/trade/mauritius-export-of-pineapple
4 Réunion estimate https://daaf.Réunion.agriculture.gouv.fr/presentation-et-perspectives-a3526.html
5 https://rnm.franceagrimer.fr/prix?ANANAS&12MOIS
6 https://www.freshplaza.com/north-america/article/2108516/pineapple-exporter-ananas-victoria-ltd-from-mauritius/
7 https://agritrop.cirad.fr/549105/1/ID549105.pdf

- **Efficient production structures** – with a few medium to large-scale corporate farms[1] (particularly in Mauritius) and robust grower associations, cooperatives,[2] and farmer organizations[3] (especially in Réunion) that unify and support smaller farmers
- **Export-grade processing facilities** – with on-site capabilities for grading, washing, waxing, packing, and cold storage, ensuring consistent quality, export compliance, and minimal post-harvest loss
- **Substantial government support**, including:
    - **Planting subsidies** to encourage cultivation of the Queen Victoria variety;[4]
    - **Airfreight rebate schemes**, in some years covering up to 60% of freight costs, shared equally between exporters and farmers;[5]
    - **Support for compliance with international standards**, such as GlobalG.A.P., to ensure market access and signal quality assurance. Mauritius has developed a localized standard, MauriG.A.P., which supports access to international markets and can serve as a stepping stone toward full GlobalG.A.P. certification;[6]
    - **Extension support** for best production practices such as hormone application and chemical minimization,[7] including strong technical support/advisory services through the French Agricultural Research Centre for International Development (CIRAD) for Réunion
    - **Innovative Technologies** such as the SIMPINA model - crop simulation tool developed use in Réunion to optimize the cultivation of the 'Queen Victoria' pineapple to optimize quality, yield and economic returns while minimizing environmental impact.[8]

One could reasonably estimate potential market demand in New Zealand for a unique Fijian pineapple by using France's premium pineapple market as a benchmark. France imports over 3,000 tonnes of the premium Queen Victoria pineapple annually.[9] With a population approximately 13 times larger than New Zealand's, a simple per capita extrapolation suggests New Zealand could potentially absorb around 230 tonnes per year. However, adjusting for the likelihood that French consumers have a higher propensity for niche tropical fruits, a more conservative estimate would place potential New Zealand demand in the range of 150 to 200 tonnes annually for a distinctive, high-quality pineapple variety. This aligns well with Fiji's target export volumes under an improved airfreight program.

Key Takeaways for Fiji: Mauritius and Réunion offer a clear blueprint for Fiji to develop a successful premium pineapple export industry via airfreight. Central to their success is a focus on quality over quantity – anchored by a premium variety (Queen Victoria), strict quality standards, and strong branding that positions their fruit as a fresh luxury product from a tropical paradise. Their successes are driven by either large-scale corporate farms or robust cooperatives and farmer organizations – a likely necessity for Fiji to adopt in order to grow exports. It's also quite clear that airfreight exports from these two countries would not be possible without substantial government support, with both countries investing in planting subsidies, airfreight rebates and extension services to improve farm-level practices. Fiji can adapt these lessons by cultivating a distinct, high-quality variety underpinned by similar branding, standards, and coordinated public-private support. Encouragingly, projected demand in New Zealand – Fiji's most accessible premium market – closely matches the volumes Fiji could sustainably supply under an improved airfreight program.

It could be highly advantageous for Fiji to establish a knowledge exchange program with either Mauritius or Réunion, or both, to gain deeper insights into the successful models these countries have developed.

MD2 Conversion – Dominican Republic

There is much that Fiji can learn from the Dominican Republic's experience with MD2 conversion. Like Fiji, the Dominican Republic has had a fluctuating history in pineapple production and exports. The Dominican is a much larger country than Fiji, in terms of size, population and economy, but the lack of multinational exporters and generally fragmented nature of production bears resemblance to Fiji.

1 https://ananasvictoria.com/about.php
2 https://laboxfruitee.com/notre-cooperative/
3 https://anafruit.re/
4 https://www.freshplaza.com/latin-america/article/9039591/Réunion-island-expansion-of-the-victoria-pineapple/?utm_source=chatgpt.com
5 https://edbmauritius.org/wp-content/uploads/2022/10/TPMS-Guidelines.pdf
6 https://industry.govmu.org/Documents/NES/2_Agro-Processing_web.pdf
7 https://govmu.org/FR/infoservices/agri/Documents/StrategicPlan2016-2020.pdf
8 https://agritrop.cirad.fr/586568/

9 Various sources – just under 1,500 tonnes each from Mauritius and Réunion, plus several hundred tonne from South Africa annually

Table 29: Country Comparison - Fiji and Dominican Republic

Country Profile Indicators	Fiji	Dominican Republic
Land Area	18,274 km^2	48,671 km^2
Population	926,276	11,532,151
Population Density	46.4/km^2	220/km^2
Arable Land Area	2,000 km^2 (11%)	8,858 km^2 (18.2%)
Nominal GDP ($USD)	$5.5 billion	$135.5 billion
Annual Pineapple Exports	15.6 t	4,712 t

Also similar to Fiji, the Dominican's export sector competes with strong local demand, particularly from its tourism industry. While this can be seen as a sign of a healthy domestic market, it also poses challenges – local sales are often more lucrative and less demanding than international exports, making it difficult to scale up and commit to consistent offshore supply.

The Dominican's export heyday was decades ago, driven by the presence of two multinationals – Chiquita and Dole – both entering the country in 1987, yet closing operations after only eight and ten years respectively. At its peak, the Dominican Republic was exporting around 50,000 tonnes of Smooth Cayenne variety a year in the early 1990s.[1] Their departure saw the Dominican Republic lose their position in export markets to larger players like Costa Rica.[2]

In the early 2000s, the industry attempted a mass conversion to MD2, which failed due to poor-quality planting material and inadequate support systems, and exports dropped as low as 289 tonnes in 2006. However, the 2010s marked a period of recovery, with overall production and exports rebounding—driven by development programs, donor assistance, and a more successful MD2 reintroduction and mass conversion using higher-quality stock.[3] The Dominican Republic is currently the fourth largest pineapple farmer in Central America.[4]

Aid programs starting around 2005 began showing results by 2008, with exports starting to trend upward again. The 2010s saw numerous aid initiatives boost production and exports, culminating in a peak of over 9,000 tons in 2020.[5] However, the Dominican Republic appears to have been set back by COVID-19, as well as losing several key markets due to the Russia-Ukraine conflict and unrest in the Middle East in 2022 and 2023. Its main markets are in Israel, France, USA, Italy, Spain, other EU countries and Russia. Exports are a mixture of both sea and air freight depending on the client and market location. Like Fiji, the Dominican is known for its high-quality pineapples, but struggles to remain price competitive in certain markets against the major exporting countries.[6]

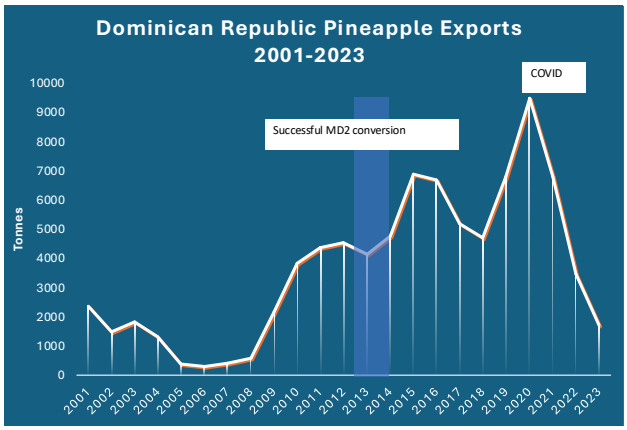

Figure 54: Dominican Republic Pineapple Exports 2001-2023

Production in the Dominican Republic is characterized by a few large-scale farms that account for about half of production, and many small to medium-scale farms, unified and led by farmer associations. There are about four associations that cover the three main geographic regions of pineapple production, several of which formed or significantly expanded in just the last decade.[7]

While export volumes remain below national targets, the Dominican Republic's successful MD2 re-conversion and export recovery can be attributed to the following factors:

- **Institutional Knowledge** – local technicians and farmers who worked under the large multinationals in the 1990s were able to apply the knowledge and practices they gained to sustain production and export activities following the multinationals' sudden departure.
- **Robust Farmer Associations –** that play a critical role in organizing farmers, providing technical assistance, facilitating both local and export marketing, and overseeing processing, packing, and distribution.[8] Pineapple farming is also attracting newcomers in the Dominican Republic and these associations play a critical role in building the capacity of these new farmers.

1 https://www.fruitrop.com/en/Articles-by-subject/Full-country-profile/2014/Pineapple-in-the-Dominican-Republic
2 Ibid.
3 Ibid.
4 https://www.sciencedirect.com/science/article/abs/pii/S0959652622017000
5 https://agricultura.gob.do/category/estadisticas-agropecuarias/produccion-agropecuaria-2012-2018/5-1-produccion-agricola/
6 https://capacity4dev.europa.eu/library/vca4d-dominican-republic-pineapple-eng_en
7 https://www.freshplaza.com/north-america/article/2178841/dominican-republic-pineapple-producers-aware-of-great-export-opportunities/
8 https://iica.int/en/press/news/joelin-santos-creador-de-una-asociacion-de-productores-de-pina-que-transformo-vidas-2/

Despite current production and exports orders of magnitude larger than Fiji, the Dominican associations continually focus on the basics of production and post-harvest for their members.[1]

- **Significant Government and International Aid support** – Government has assisted in recent decades with programs focused on technical assistance, credit schemes, logistics support and investments to upgrade existing packhouses and build new facilities.[2] In the mid-2000s through the 2010s significant aid programs from the likes of IADB, USAid, FEDA and the EU contributed to the mass conversion of upgraded MD2 and export enhancement programs. A substantial portion of this funding was channelled through pineapple farmer associations, underscoring their central role in sector development.

- **Partnerships –** are key to sustainable development. For example, in 2021 the Association of Pineapple Producers of Monte Plata signed a technical and economic cooperation agreement with Nicofrutta (Italy) and Nicoverde (Costa Rica) to jointly market 80% of its pineapples to the European market – demonstrating how associations can leverage partnerships to access new markets and scale results beyond what individuals or governments might achieve alone

- **Beneficiary-Contributed Propagation Scheme** – Successful efforts to scale the MD2 conversion in 2013 involved requiring each farmer beneficiary to return three suckers for every one received.[3] This model ensured the sustainability of the program, enabling broad access to high-quality planting material and facilitating the replacement of genetically degenerated MD2 plants without relying solely on continuous external funding.

Key takeaways for Fiji: Strong grower associations are critical for export success, enabling smallholders to access shared infrastructure, meet market requirements, and scale production. Donors also favour associations because they offer both organizational accountability and community ownership – making them ideal vehicles for aid. When well-organized, associations can attract international partners, like those seen in the Dominican Republic, to jointly market products, reduce costs, and expand into new markets. Fiji may also want to consider utilizing the in-kind contributions from farmer beneficiaries to scale MD2 quickly, by having them return suckers in successive generations to the program for broader dissemination.

1 https://www.devex.com/jobs/pineapple-crop-management-trainer-562323
2 https://www.itfnet.org/v1/2018/11/dominican-republic-government-aims-to-increase-pineapple-exports/
3 https://www.fruitrop.com/en/Articles-by-subject/Full-country-profile/2014/Pineapple-in-the-Dominican-Republic

The Dominican model also shows that both air and sea freight are viable for MD2 exports, giving Fiji flexibility to trial shipments by air to premium markets in New Zealand before scaling up. And importantly, Fiji may not need to choose between Ripley Queen and MD2. Like in the Dominican Republic, different varieties can be marketed in parallel – each with its own brand and positioning – broadening Fiji's export potential.

Figure 55: Two different brands marketed by the same farmer association

5.4. Potential Market Share in New Zealand

Based on all of the known information on Fiji's pineapple industry, the benchmark set by Fiji papaya and comparable pineapple exporting countries, here are a few volume scenarios with their corresponding capture of NZ market share as well as the percentage increase from Fiji's current export levels.

Table 30: Market Share Calculations for Fiji pineapple in the NZ market

Simplified Market Share Calculator						
Pineapple Variety	**Mode of Transport**	**Container Type**	**Program**	**Annual Tonnes**	**% Market Share in NZ**	**% Growth from 12t**
			NZ Market	9000		
			Fiji 2023 volume	12	0.13%	
RQ	Air	1 x AKE	1.435 t/week	75	0.83%	522%
RQ	Air	2 x AKE	2.87 t/week	149	1.66%	1144%
RQ	Air	1 x PMC	3.88 t/week	202	2.24%	1581%
MD2	Sea	20' reefer	10 t/month	120	1.33%	900%
MD2	Sea	20' reefer	10 t/fortnight	260	2.89%	2067%
MD2	Sea	20' reefer	10 t/week	520	5.78%	4233%

With Ripley Queen, it's possible to airfreight one to two x 1.5 t AKE containers, or a single 4 t PMC container per week. (Tare weights have been factored into the calculations above.) The latter likely represents the upper limit of market demand for an alternative or premium pineapple variety in New Zealand.

With a mature MD2 program, sea freight becomes possible. While a 10 t/month calculation is included, that's more of a point of reference, and not likely not consistent enough to access supermarkets. Given the shelf life of MD2, fortnightly shipments would be the starting point, with the possibility of scaling to weekly sea freight shipments. Essentially, to capture 5% market share in NZ, Fiji would need to ship 10 t per week, every week of the year. Based on projections above, this will be hypothetically feasible in about 8 years.

Any of the scenarios above would be considered highly successful if achieved, compared to Fiji's current export capacity and would require successful implementation of nearly all study recommendations, especially consistent year-round supply. Furthermore, Ripley Queen would have to perform successfully at lower volumes, demonstrating its premium status, before scaling to 3-4 t/week, as that would require a broader import and retail network than currently exists for Fiji pineapple.

5.5. Marketing Strategy

Regardless of the chosen approach, Fiji pineapple's marketing strategy should emphasize its key points of differentiation:

- **Varietal alternative** – in the case of Ripley Queen.
- **Superior taste and ripeness** – the ability to export slightly riper, more flavourful pineapples.
- **Socio-economic impact** – supporting small farmers rather than large corporate producers. This is perhaps even a more critical selling point for retailers than consumers, as many retailers now have commitments to ethical sourcing and social responsibility, including initiatives that prioritize small-scale farmers and equitable supply chains, making Fiji pineapples a strong fit for these programs.
- **The 'Fiji' brand** – leveraging strong global recognition through tourism and brands like Fiji Water, which evoke pristine tropical environments and exotic origins.
- **Lower food miles and carbon footprint** – benefiting from a shorter supply chain compared to distant competitors.

Below is a word cloud of responses given to the question, "What comes to mind when you hear the term Fiji pineapples?" from the NZ consumer survey.

While of course, many are not currently aware of Fiji pineapples, the NZ public is already expecting a tasty, tropical fruit of a higher quality, that is a more ethical purchase than current market options.

5.6. Risk Analysis

Fiji's pineapple export industry faces a variety of risks that could impact its success in the New Zealand market. Market risks include potential price fluctuations, competition from established suppliers, and changing consumer preferences. However, these risks are mitigated by Fiji's niche positioning, focusing on branding, community connections, and the quality and freshness of its produce. A notable risk is the possibility that Fiji's domestic market may prove more lucrative for farmers, which could discourage commitment to export contracts due to higher returns and fewer demands in local sales. To address this, offering stable pricing and guaranteeing long-term markets is essential for farmers to prioritize export-quality fruit.

Crop risks also present significant challenges, with extreme weather events, pest outbreaks, and inconsistent quality or yields posing threats to both domestic and export markets. Strategies such as promoting resilient farming practices, implementing integrated pest management, and improving agricultural extension services are crucial to mitigating these risks. Additionally, structural risks like insecure land tenure for farmers and inconsistent adherence to post-harvest quality standards need to be addressed through programs that stabilize long-term investments and ensure consistent quality. Lastly, supply chain risks, particularly transport disruptions, increased freight costs, and biosecurity protocols, require careful planning and strong partnerships to minimize delays and protect the quality of exports.

Figure 56: Online NZ consumer survey response - "What comes to mind when you hear the term Fiji pineapples?"

Table 31: Risk Matrix for commercial Fiji pineapple export industry

Risk Category	Specific Risk	Description	Likelihood	Impact	Explanation/Mitigation Strategy
Market Risks	Market price fluctuations in New Zealand	Changes in wholesale or retail pineapple prices in NZ may reduce profit margins and affect exporter viability.	Low	Low	Pineapple prices in NZ are fairly stable, and Fiji is not primarily competing on price. This is something to monitor, but focus is on Fiji's branding, community angle, proximity, and freshness. Short term subsidies/rebates may be necessary
	Price competition from established suppliers (Ecuador, Philippines, Costa Rica)	Competing countries may offer pineapples at lower prices due to scale, subsidies, or lower freight costs.	High	Low	This is already known and anticipated. Focus on Fiji's niche per above. May also consider subsidies or programs focused on decreasing the cost of production
	Changing consumer preferences (e.g. organic, local)	New Zealand consumers may shift to organic, locally grown, or alternative fruits, affecting demand for Fijian pineapples.	Low	Low	Demand for pineapples is stable. Highlight the social value and unique qualities of Fiji pineapples. If need be, reinforce/adapt marketing strategy to maintain brand quality and characteristics.
	Domestic markets may be more lucrative than exports and less demanding	Higher prices and strong demand in Fiji's domestic market may discourage farmers from committing fruit for export. Export-quality fruit also requires more effort and resources to meet stricter standards, which may not be justified by the returns if domestic sales remain more attractive.	High	High	Major issue: If the farmer gets a better price selling locally, they will sell locally. Historically contracts have not been a solution. Offer fair, stable pricing for farmers and guarantee markets into the future; differentiate export-grade requirements.
Crop Risks	Extreme weather events (cyclones, droughts)	Tropical storms, floods, or droughts may severely damage pineapple crops or reduce yields.	Medium	Medium	While pineapple is more resilience than many export crops to most natural disasters, the risk of lost crop remains ever-present. Promote resilient farming practices (e.g. mulching, drainage); encourage crop insurance.
	Pest or disease outbreaks (e.g. mealybugs, fungal infections)	Infestations can reduce yields, quality, or trigger export rejection due to biosecurity concerns.	Medium	High	A low risk for domestic markets, but high risk for export markets. Implement Integrated Pest Management (IPM); strengthen biosecurity; train farmers.
	Inconsistent quality or yields due to poor practices	Without adherence to good agricultural practices, pineapples may not meet export standards for size, sweetness, or shelf life.	Medium	High	Comprehensive program for production and post-harvest with continued technical support and enforcement of good agricultural practices. Improved extension services.

Farmer-Level / Structural Risks	Insecurity of land tenure discouraging long-term investment (esp. Indo-Fijian farmers)	Many farmers lease land from native landowners, and uncertainty over renewals makes them less willing to invest in land improvements or long-term practices.	Medium	High	Advocate for lease stability; offer support programs that reduce long-term investment risk.
	Farmers not adhering to post-harvest quality standards	Farmers may sacrifice quality to meet volume demands or sales targets, leading to inconsistent compliance with export standards (e.g. size, ripeness, appearance), which can affect buyer trust and market access.	Medium	Medium	Set up cooperatives targeting only export markets Provide regular post-harvest training, set clear quality benchmarks, and link incentive schemes or export eligibility to compliance with standards.
Supply Chain Risks	Transport disruptions (weather, port delays)	Various reasons may delay shipments or increase freight costs, affecting export timing and profitability.	Medium	Low	Less of an issue for air freight and sea freight varieties are designed to withstand longer transit times. Develop logistics partnerships; build contingency plans; maintain schedule buffers.
	Increased freight costs or changing shipping routes	Rising shipping rates or changes in route schedules may make exports less cost-effective or delay deliveries.	Medium	Low	Shipping routes would likely only change for the better given they are already unfavourable considering Fiji's proximity to NZ. Negotiate shipping arrangements in advance; explore consolidation models.
	Import restrictions or regulatory changes in NZ	Shifts in New Zealand's import regulations (e.g. pesticide limits, certification) may affect Fiji's market access.	Low	Low	Maintain strong bilateral relationships and open communication with NZ authorities; monitor regulatory updates regularly; use established channels to address issues promptly and prevent disruptions.
	Strict biosecurity protocols	Current NZ inspections result in 100% interception and fumigation of all shipments, increasing cost, shortening shelf life and reducing product quality.	High	High	Lobby NZ government to declassify certain pest and/or raise action threshold for fumigation treatments Trial treatments options; Implement Integrated Pest Management (IPM) Focus exports on a more fumigation-resilient variety (e.g. MD2)
	Limited cold chain infrastructure	Lack of pre-cooling, cold storage, and refrigerated transport can reduce shelf life and product quality during transit.	Medium	Low	Develop pre-cooling and cold storage; explore shared infrastructure for smallholders.

6. Recommendations & Financial Projections

6.1. Recommendations

To increase Fiji's market share of pineapples imported into New Zealand, it is essential to balance the needs of farmers, exporters, and the New Zealand market while addressing key constraints. Farmers require a reliable outlet and are willing to expand production if market demand increases, though seasonal fluctuations and price competition with the domestic market pose challenges. Exporters, despite their willingness to ship larger volumes, face risks of border interceptions and fluctuating prices, limiting exports to mainly peak season when prices are lower. They also prefer standardized fruit sizes to enhance marketability. Although Fiji can't compete on price with large-scale suppliers from the Philippines or South America, it will be able to compete on taste, freshness, and environmental and socioeconomic benefits. Leveraging these strengths while aligning incentives across the value chain is critical to building a competitive and sustainable export model.

There are multiple potential pathways for developing the Fiji pineapple industry, from highly centralized, government-led models to fully private, market-driven approaches. Our recommendations adopt a pragmatic, light-touch approach – prioritizing cost-effectiveness and minimizing disruption to existing private sector networks and market efficiencies. Interventions are proposed only where essential to unlock progress, strengthen coordination, or safeguard the industry's long-term commercial viability, particularly without displacing what is already working well – especially within the domestic market.

It is also crucial that our recommendations do not introduce additional layers of cost to the value chain. Any increase in production or intermediary costs must be justified by corresponding efficiencies, higher productivity, or savings elsewhere, as Fiji is already positioned at the higher end of price points in the export market.

Firstly, this study strongly recommends pursuing both options outlined in the previous section:

1. Enhancing the Ripley Queen airfreight program, and
2. Mass propagation of MD2 for a future sea freight program.

The recommendations below have been grouped into four strategic themes: Industry Governance and Institutional Strengthening, Production Systems and Farm-Level Capacity, Market Access and Logistics, and Enabling Environment and Incentives.

For the purposes of this study, the authors have further consolidated all of the recommendations into a hypothetical *Fiji Pineapple Project* outlined in section 6.3. This project will encompass the specific activities, associated costs, key actors, and timeline involved.

The thematic recommendations are presented in the table below, along with their priority ranking and the corresponding component of the *Fiji Pineapple Project*.

Table 32: Recommendations for the success of the Fiji Pineapple Industry

Theme	Recommendation	Priority	Fiji Pineapple Project
1. Industry Governance and Institutional Strengthening			
1.1	Formalize the pineapple industry through the formation of a national association, regional cooperatives, and farmer clusters	High	Component 2 Component 5
2. Production Systems and Farm-Level Capacity			
2.1	Strengthen on-farm production systems to enable year-round supply, higher yields, and improved quality	High	Component 3
2.2	Support farmers and cooperatives to achieve G.A.P. certification	Medium	Component 4
2.3	Expand pineapple research and enhance extension services aligned with geographic commercial production zones	Medium	Component 6
3. Market Access and Logistics			
3.1	Resolve biosecurity issues through comprehensive pest management and bilateral discussion	Very High	Component 1
3.2	Create a Standard Operating Procedure for the airfreight of Ripley Queen pineapple	High	Component 4
4. Enabling Environment and Incentives			
4.1	Consider strategic incentives to support the viability and long-term growth of the pineapple export industry	High	Component 7

Detailed recommendations are as follows:

1. **Industry Governance and Institutional Strengthening**

1.1 Formalize the Pineapple Industry through the formation of a national association, regional cooperatives and farmer clusters: Fiji's pineapple industry remains fragmented, with scattered smallholder farmers lacking coordination, shared standards, or a collective strategy. This limits the industry's ability to compete at scale, respond to market demands, and access shared services or investment. Formalizing the sector through a national association, supported by regional cooperatives and district-level clusters, would provide much-needed structure and cohesion. This layered model would enable better representation, performance monitoring, crisis response, market coordination, and collective action – laying the foundation for a more profitable, resilient, and export-ready pineapple industry.

- **National Association**: Comprised of regional cooperative and cluster representatives, exporters; possibly other stakeholders like input suppliers and middlemen.

  Role: Provides national coordination, secures funding and partnerships, promotes exports, advocates policy, manages standards, and facilitates communication between regions and the wider industry.

  Operational Structure: Lean and functional. Includes a small central office, CEO, administrative support, and a governing Board of Directors. This association would come under the Fiji Crop and Livestock Council.

- **Regional Cooperative:** Comprised of multiple clusters within a geographic region (e.g. Western, Central, Northern); will include exporters as members or partners.

  Role: Coordinates planting and treatment for floral induction to ensure sustained supply of pineapple from the cluster members meeting production targets for sustainable supply. Collects and processes pineapples from clusters, conducts post-harvest handling, manages or facilitates exports, and coordinates supply scheduling with other coops and the association.

The role of the cooperative is not to compete with or replace private exporters, but to ensure consistent supply and coordination across the value chain. Exporters are expected to play an integrated role within this structure, collaborating rather than competing with cooperatives.

Operational Structure: Packhouse with office space, Manager, admin support staff, labourers, drivers, transport vehicles, basic post-harvest equipment (e.g. wash stations, crates, cold storage if feasible), and record-keeping systems (digital or manual), Executive Board

It is recommended to pilot the cooperative model with a single, well-supported facility in the Western Division, initially aligned with the Ripley Queen airfreight program. This would allow for focused investment, streamlined coordination, and real-time learning in Fiji's most active production zone. Based on its performance and lessons learned, the next phase could expand to Korovou to serve Central Division farmers linked to the maturing MD2 program. A third, scaled-down satellite in Vanua Levu could be considered, strategically connected to the Central Cooperative for coordinated exports via Suva.

- **District-level Clusters:** Comprised of farmers within a district, village or geographic area

  Role: Organizes local growers to coordinate production and harvest timing, aggregate supply, share inputs and practices, disseminate information, and deliver pineapples to the regional cooperative.

  Operational Structure: No permanent office or staff, Cluster Lead (volunteer or lightly compensated), Cluster Executive Committee

2. Production Systems and Farm-Level Capacity

2.1 Strengthen on-farm production systems to enable year-round supply, higher yields, and improved quality:

Achieving consistent, year-round supply is the single most important step Fiji can take to compete in the export market, especially by airfreight. This requires strengthening on-farm production systems to address seasonal gaps, improve yields per hectare, and enhance fruit quality to restore the waning reputation of Fiji pineapple.

While productivity and quality improvements are essential, they must ultimately support a supply model that delivers reliable volumes across the calendar year to meet importer expectations and reduce post-harvest waste during gluts. The recommendations below outline key production-based improvements to support this goal:

- **Enable year-round production through appropriate hormone application and staggered planting:** Expand farmer awareness on staggered planting and consistent application of flowering hormones to induce flowering and smooth harvesting volumes across the year. Currently, hormone use is sporadic and often limited to peak season supply, making year-round market access impossible. A national cropping calendar should be rolled out to guide planting and hormone schedules. This strategy is essential to overcome current supply gluts and gaps, stabilize income for farmers, and meet importer demands for consistent, predictable volumes. See Annex 1: Cropping Calendar.

- **Optimize planting density and land use:** Encourage farmers to adopt recommended double-row planting at 15,000 plants per ac (37,000 plants per ha), or up to 50,000 per ha, to fully utilize available land. Observations show that current planting densities are well below optimal, leading to underperformance in yield. Gaps between plants promote weed growth, which adds cost to manage and competes for nutrients and sunlight.

- **Improve fruit quality through better plant and ratoon management:** Promote strict adherence to single-sucker and limited cycle ratoon management to reduce overcrowding, support uniform growth, and improve nutrient delivery to each plant. Many farms suffer from indistinguishable rows and nutrient dilution due to unmanaged suckers. A return to quality cultivars (F1/F2), possibly supported by a national tissue culture program, will help restore Fiji's premium reputation.

- **Reduce post-harvest losses through better handling and maturity management:** Introduce training for farmers and vendors in minimizing bruising, sun damage, and over-ripening. This includes improved harvest techniques (e.g. proper cutting and fruit positioning), sun protection methods, and storage protocols. Overripe harvesting and rough handling remain major sources of wastage and lost market value.

2.2 Support farmers and cooperatives to achieve G.A.P. certification: Although G.A.P. certification is not critical for the initial stages of the Ripley Queen airfreight program, it will become increasingly important if the niche market expands into major supermarkets. Certification will be essential for the MD2 program, as it targets major importers and supermarkets. The Fiji Pineapple Project must support farmers and farmer groups in achieving this standard, whether it's GlobalG.A.P. or a more practical FijiG.A.P. alternative. Both monetary and human resources will be vital in assisting farmers and cooperatives through the certification process, ensuring that all necessary steps are completed efficiently and effectively.

2.3 Expand pineapple research and enhance extension services aligned with geographic commercial production zones: To effectively support the industry's growth, pineapple-specific research and extension services must be situated closer to the core production areas in the Western Division where nearly 90% of pineapple production takes place. The current focus at the Seaqaqa research station, located in the North, is geographically misaligned and underutilized. Relocating or expanding research functions to areas like Nadi, Lautoka, or Ba would improve relevance, farmer access, and practical impact. Strengthening extension support in these areas will also help accelerate adoption of best practices, improve yields and quality, and enable year-round supply.

3. Market Access and Logistics

3.1 Resolve biosecurity issues through comprehensive pest management and bilateral discussion: Addressing the 100% interception rate upon entry to New Zealand is absolutely critical to the success of an airfreight program, and is also highly beneficial for any future sea freight program. This will require a holistic approach involving government, farmers, and exporters. Considerations such as cost, environmental impact, and health implications are key, as many conventional pre-harvest interventions involve costly chemical applications.

Various pre-export treatments, such as HTFA, Vapor Heat Treatment, fumigation, and irradiation, may compromise shelf life and add significant operational costs; while washing and waxing, the industry standard, do not fully address pest issues and increase transactional costs.

Even with a well-executed Integrated Pest Management (IPM) plan, interceptions will still occur, as evidenced by countries with far more robust pest management and processing systems than Fiji still experiencing interceptions regularly. This means that despite significant cost investments in pest control and treatments, Fiji may still fall short of improved market outcomes. For this reason, the most sustainable and cost-effective approach may be bilateral discussions and industry advocacy aimed at securing a re-categorization of certain pests, and/or establishing a higher action threshold for fumigation treatments.

This is a highly realistic solution, as the two most problematic pests from Fiji – both mealybugs – are already rated LOW and VERY LOW risk by NZ MPI. It is therefore quite reasonable to pursue a technical case for the waiving of fumigation for such minor risks. In essence, Fiji would simply be asking NZ MPI to align its enforcement actions with its own pest risk analysis outcomes.[1]

This bilateral effort must be tactful and science-based, complementing (rather than replacing) an IPM strategy in Fiji. High-level technical assistance will be essential in supporting this initiative.

Furthermore, this advocacy may gain traction as a multilateral effort, given that the current biosecurity measures impede trade for all pineapple exporters and importers. Many importers will strongly support this approach as the most effective and long-term viable solution for the industry.

If a sustainable biosecurity solution cannot be achieved, it is not recommended to proceed further with the airfreight program. All remaining recommendations and actions should instead align with the timeline of the MD2 sea freight program.

1 https://www.mpi.govt.nz/dmsdocument/57874-Import-risk-analysis-De crowned-pineapples-Ananas-comosus-for-human-consumption

Recommendation 3.1 Comprehensive Biosecurity Solution		
Course of Action		**Notes**
Option 1	Bilateral Solution + IPM	Cost-effective, sustainable
Option 2	Irradiation	Very costly, effective
Option 3	Wash & Wax + IPM	Costly, not 100% effective

3.1 Create a Standard Operating Procedure for the airfreight of Ripley Queen pineapple: An SOP should be developed to ensure consistent quality, minimize post-harvest losses, and meet phytosanitary and market requirements for airfreighted pineapples. The SOP would apply to all actors involved in growing, harvesting, packing, and exporting Ripley Queen pineapples for airfreight — particularly those targeting the New Zealand fresh market.

A brief outline is below:

- **Roles and Responsibilities** – of the (newly formed) Association, Cooperatives, Clusters, Farmers, Buyers, Exporters, Biosecurity officers, Ministry of Agriculture
- **Pre-Harvest Requirements** – Crop scheduling to meet shipping windows; Ratoon management practices; Field hygiene and pest management; Quality monitoring (size, Brix, shape); Record keeping
- **Standardized Harvest Index** – Minimum fruit size/weight (e.g., ≥ 1.2 kg); Brix level (≥13% for export); External colour; Rejection criteria (sunburn, cracks, pest damage)
- **Harvesting Procedure** – Time of day; Tools and equipment; Handling procedures; Pre-sorting in field
- **Post-Harvest Handling** – Cleaning; Crown trimming; Grading (strict A-grade export standard)
- **Packaging Standards** – Standard export cartons; Fruit padding or separation; Labelling; Secure closure and stacking; Palletization for air cargo (if needed)
- **Biosecurity and Phytosanitary Compliance** – Pre-export field inspection protocols; Pest-free declarations; Phytosanitary certificates for importing country
- **Airfreight Logistics** – Timeframe from packing to airport (within 24 hours); Cold chain maintenance; Maximum weight and volume per shipment
- **Export Documentation** – Phytosanitary certificate; Commercial invoice; Airway bill (AWB)
- **Traceability and Record Keeping** – Batch numbers linked to farms; Harvest and export dates; Export volumes and grades
- **Contingency Procedures** – Handling flight delays or cancellations; Dealing with rejected shipments; Reporting losses or spoilage
- **Review and Continuous Improvement** – Farmer/exporter/importer feedback; Monitoring NZ market and interception reports; Adjust SOP as necessary

As the MD2 program is in its infancy, it's too early to develop a full SOP. However, as the program matures, a dedicated SOP can be developed based on the Ripley Queen airfreight SOP, adapted to suit MD2's characteristics and sea freight export pathway.

4. Enabling Environment and Incentives

4.1 Consider strategic incentives to support the viability and long-term growth of the pineapple export industry: To incentivize pineapple export and enhance its viability in the face of more lucrative local markets, a range of strategic measures are needed. These incentives would help to drive both farmers and exporters toward more competitive, consistent, and year-round export practices. Just a few incentives for consideration are:

- **Production-level incentives**
  - Fertilizer subsidy
  - Flowering hormone subsidy
  - Crop insurance subsidies
  - Subsidized support for GAP certification (recommended above)
- **Post-harvest and domestic logistics**
  - Domestic transport subsidy

- **Export and market-facing incentives**
    - Matching grant schemes for equipment and infrastructure
    - Tax credits for exporter investment in farmer supply chains
    - Freight rebates (split between exporter and farmer)
    - Export income deduction scheme (continue)
    - Marketing and branding campaign support
    - General de-risking measures (e.g. export insurance)

6.2. Formalized Structure and New Value Chains

The Fiji Pineapple Association would formally register with the Fiji Crop and Livestock Council, the national peak body for crop and livestock farmers. This affiliation would support the Association's governance and enable access to funding, resources, and national networks that can directly benefit its farmer members. While the cooperatives and farmer clusters operate as separate legal entities under the Registrar of Cooperatives, the Association would provide informal and indirect oversight. Notably, cooperative members are expected to make up the majority of the Association's membership, creating a strong linkage between the two structures. The key tasks of these new entities would be implementing activities under the planned Fiji Pineapple Project.

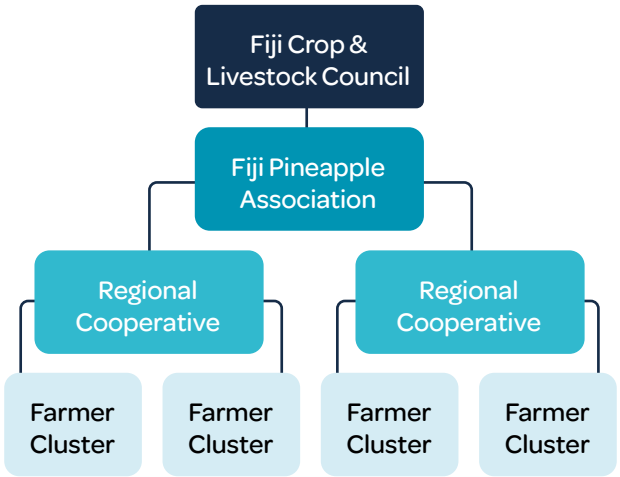

Figure 57: New Pineapple Industry Structure

As illustrated in the updated value chain below, the new model builds on what already works—especially for the domestic market – while providing structured support where it's most needed, particularly in export development. The addition of a national association, regional cooperatives, and farmer clusters strengthens coordination and governance without being overly disruptive to existing supply chain relationships.

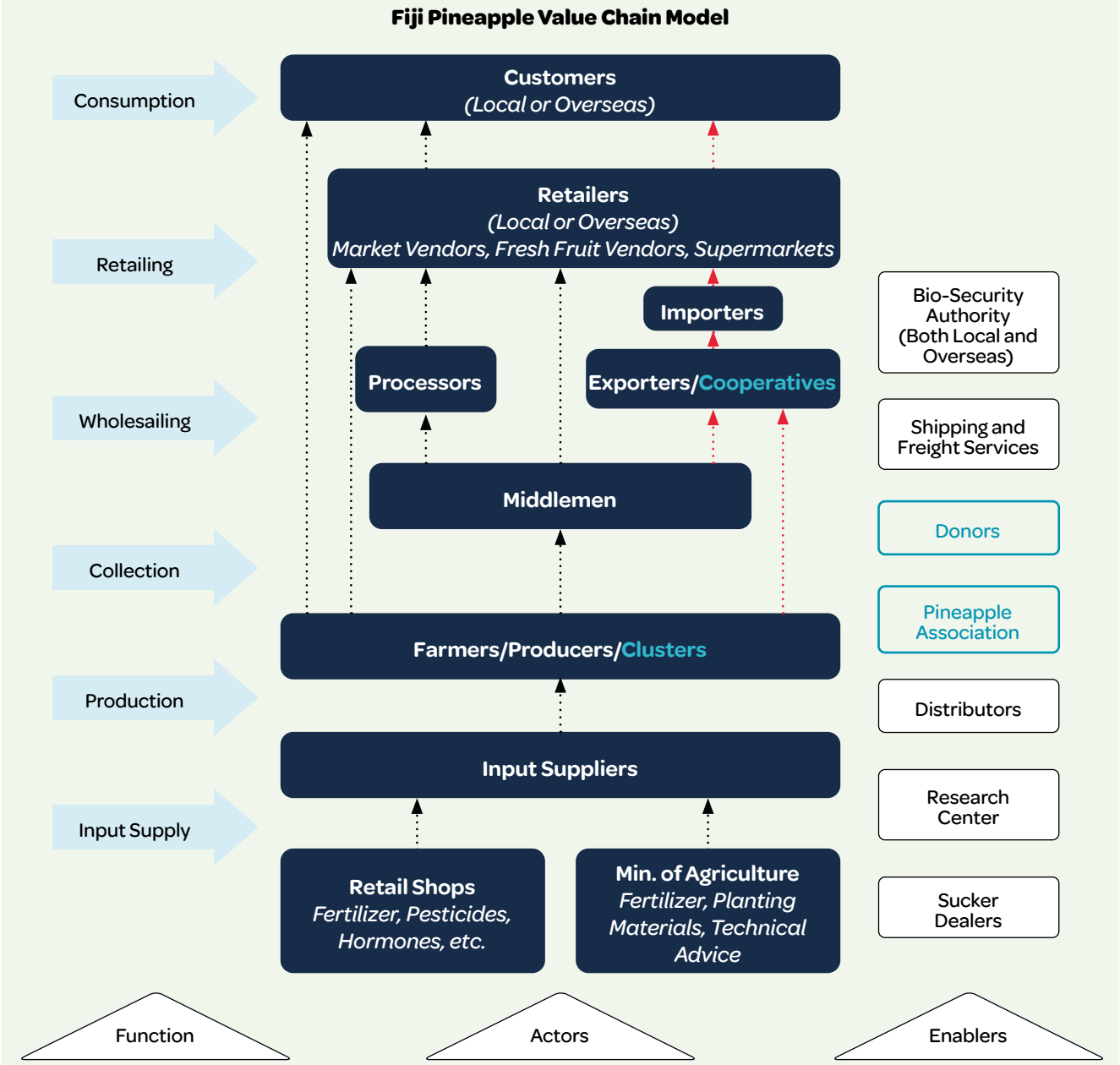

Figure 58: Value Chain Model with new industry structure

Red arrows signify export pathway; Blue are new entities

6.3. Fiji Pineapple Project: Investment Requirements and Timeline

The Fiji Pineapple Project is a consolidated package of recommended interventions designed to unlock Fiji's potential as a competitive exporter of fresh pineapples to New Zealand. It brings together all the key recommendations made in this report into a structured, costed program divided into six components. These span biosecurity reform, industry formalization, supply stabilization, targeted export programs for Ripley Queen and MD2 varieties, and long-term research. The project adopts a pragmatic, light-touch approach that leverages existing networks while providing targeted support where needed.

It outlines estimated costs, proposed funding shares, and suggested lead agencies and partners for implementation.

The comprehensive program is estimated to cost FJD $4.2 million, with funding contributions comprising approximately $1.3 million from the Government of Fiji, $2.9 million from donors, and $172,450 from other sources such as initial revenues generated through cooperative activities. Overall, the project would be 27% government-funded, 69% donor-funded, and 4% from other funds.

Table 33: Fiji Pineapple Project – Investment Requirements

Fiji Pineapple Project								
			% Funded by					
#	Activity	Estimated Cost ($FJD)	Fiji Gov	Donor	Private/ Other	Activity Lead	Key Partners	Comment
Component 1: Reducing Market Barriers Through Biosecurity Solutions		**$ 140,000**	**100%**					
1.1	Hire biosecurity expert to devise IPM & Bilateral Strategy for BQA amendments	$ 80,000				MoA/BAF	SPC Farmers Exporters NZFPIA	To complement the work of SPC If unsuccessful, forego Component 4 and align other components to Component 5 timeline
1.2	Implement Integrated Pest Management Plan	$ 50,000				MoA/BAF		
1.3	Bilateral engagement for BQA amendments	$ 10,000				Fiji Gov		
Component 2: Formalization of the Pineapple Industry		**$ 1,412,000**	**20%**	**75%**	**5%**			
2.1	Formation of National Association					Farmers	Fiji Gov, FCLC, Exporters, Donors	
	Start-up costs *(capital & setup)*	$ 100,000						
	Operational Costs *(first 2 years @ $150k/yr)*	$ 300,000						
2.2	Formation of Western Cooperative *(incl. packhouse)*					MoA/Assoc		
	Start-up costs *(capital & setup)*	$ 500,000						
	Operational Costs *(first 2 years @ $220k/yr)*	$ 440,000						
2.3	Formation of Western Clusters (4)					Assoc & Coop		
	Start-up costs *(setup, member drive)*	$ 20,000						
	Operational Costs *(first 2 years @ 4k/yr per cluster)*	$ 32,000						
	Governance manual and business capacity building training	$ 20,000						

Component 3: Stabilizing Pineapple Supply for Export Markets		**$**	**310,000**	**20%**	**80%**				
3.1	Hire technical expert/trainer(s)	$	100,000				MoA		
3.2	Finalize Standard Operating Procedure *(incl. cropping calendar)*	$	10,000				MoA	Assoc, Coop, Clusters, Donors	
3.3	Nationwide capacity building program *(main focus: hormone application, production and post-harvesting improvements)*	$	200,000				MoA		Outreach activities under other components may piggyback on this program
Component 4: Improved Ripley Queen Air Freight Program		**$**	**290,000**	**20%**	**75%**	**5%**			
4.1	Exporter capacity building training	$	10,000				Association		
4.2	Matching grants for export facility upgrades	$	200,000				Association		Proceed only if successful with Components 1&3. Focus on Western Division.
4.3	Finalize Standard Operating Procedure for airfreight program	$	10,000				MoA	MoA, PHAMA Plus, Donors, Coop, Clusters	
4.4	Fiji Pineapple Marketing & Branding Campaign *(incl. promotional materials & in-market activation)*	$	30,000				Association		
4.5	G.A.P. certification program (Western Division)	$	40,000				MoA/Assoc		Only if successful program is ready for major importers/supermarkets
Component 5: Mass Propagation of MD2 for Sea Freight Export Readiness		**$**	**1,747,000**	**20%**	**75%**	**5%**			
5.1	Mass propagation & distribution of MD2	$	-				MoA		Already funded by MoA
5.2	Create Standard Operating Procedure for sea freight program	$	5,000				MoA		
5.3	Farmer Capacity Building on MD2 cultivation	$	15,000				MoA		
5.4	Export trials *(airfreight > sea freight simulations > sea freight)*	$	15,000				MoA/Assoc		
5.5	Formation of Central Cooperative *(incl. packhouse)*						MoA/Assoc	PHAMA Plus, Donors, Coop, Clusters	
	Start-up costs *(capital & setup)*	$	500,000						
	Operational Costs *(first 2 years @ $220k/yr)*	$	440,000						
5.6	Formation of Northern Cooperative *(incl. packhouse)*						MoA/Assoc		
	Start-up costs *(capital & setup)*	$	300,000						
	Operational Costs *(first 2 years @ $220k/yr)*	$	350,000						

5.7	Formation of Central & Northern Clusters (4)						MoA/Assoc		
	Start-up costs *(setup, member drive)*	$	20,000						
	Operational Costs *(first 2 years @ 4k/yr per cluster)*	$	32,000					PHAMA Plus, Donors, Coop, Clusters	
	Governance manual and business capacity building training	$	20,000						
5.8	Upgrade/adapt Western Cooperative for sea freight program						MoA/Assoc		
5.9	G.A.P. certification program (Central & Northern)	$	50,000				MoA/Assoc		
Component 6: Pineapple Research & Germplasm Conservation		**$**	**300,000**	**80%**	**20%**				
6.1	Expand/shift pineapple research to Nadi/Lautoka/Ba area	$	200,000				MoA		Ideal growing region and most farmers in this area
6.2	F1/F2 tissue culture restoration program through backcrossing	$	100,000				MoA	SPC, Assoc, Clusters, Donors	Restore size and quality of pineapple
	TOTAL	**$**	**4,199,000**	**$ 1,131,800**	**$ 2,894,750**	**$ 172,450**			
	Overall %			**27%**	**69%**	**4%**			

While not directly costed, it is important to remember the suite of incentives that may be necessary to attract farmers into exports and to remain competitive in the New Zealand market.

Component 7: Assistance & Incentives (for consideration)	**Highly Recommended**
Freight rebates	ü
Export Income Deduction Scheme	ü
Fertilizer subsidy	ü
Flowering hormone subsidy	ü
Marketing & Branding Campaign assistance	ü
Crop insurance subsidies	
General de-risking measures	
Domestic transport subsidy	
Matching grant schemes	
GlobalG.A.P.-equivalent certification subsidy	ü

Tax credits for exporter investment in farmer supply chains

While the above estimate already reflects a lean approach in many respects, a more cost-conscious version of the project could be delivered for approximately FJD $3 million by removing Component 6 (Research & Germplasm Conservation) and scaling back the establishment and operational costs of cooperatives.

The timeline below outlines the phased implementation of the Fiji Pineapple Project over a seven-year period, structured across six interrelated components. The early years focus on foundational activities such as reducing biosecurity barriers, formalizing the industry, and stabilizing supply – particularly in support of the Ripley Queen airfreight program. As the project progresses and volumes of MD2 pineapple increase, attention shifts toward preparing for sea freight exports and the inclusion of the Central and Northern Divisions. Activities are sequenced to build on each other, with later components conditional on earlier successes, namely Component 4 highly dependent on successful outcomes of Components 1 and 3.

Table 34: Fiji Pineapple Project - Timeline

#	Activity	Fiji Pineapple Project - Timeline							Comment
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	
Component 1: Reducing Market Barriers Through Biosecurity Solutions									
1.1	Hire biosecurity expert to devise IPM & Bilateral Strategy for BQA amendments	X							
1.2	Implement Integrated Pest Management Plan	X							
1.3	Bilateral engagement for BQA amendments	X							If unsuccessful, forego Component 4 and align other components to Component 5 timeline
Component 2: Formalization of the Pineapple Industry									
2.1	Formation of National Association	X							
2.2	Formation of Western Cooperative *(incl. packhouse)*		X						
2.3	Formation of Western Clusters (4)		X						

Component 3: Stabilizing Pineapple Supply for Export Markets									
3.1	Hire technical expert/trainer(s)	X	X						
3.2	Finalize Standard Operating Procedure *(incl. cropping calendar)*		X						
3.3	Nationwide capacity building program *(main focus: hormone application, production and post-harvesting improvements)*		X						
Component 4: Improved Ripley Queen Air Freight Program									
4.1	Exporter capacity building training	X							
4.2	Matching grants for export facility upgrades		X						Proceed only if successful with Components 1&3. Focus on Western Division.
4.3	Finalize Standard Operating Procedure for airfreight program		X						
4.4	Fiji Pineapple Marketing & Branding Campaign *(incl. promotional materials & in-market activation)*		X	X					
4.5	G.A.P. certification program (Western Division)			X					Only if successful program is ready for major importers/supermarkets
Component 5: Mass Propagation of MD2 for Sea Freight Export Readiness									
5.1	Mass propagation & distribution of MD2	X	X	X	X	X	X	X	
5.2	Create Standard Operating Procedure for sea freight program					X			
5.3	Farmer Capacity Building on MD2 cultivation		X			X			
5.4	Export trials *(airfreight > sea freight simulations > sea freight)*					X	X	X	
5.5	Formation of Central Cooperative *(incl. packhouse)*						X	X	
5.6	Formation of Northern Cooperative *(incl. packhouse)*						X	X	
5.7	Formation of Central & Northern Clusters (4)						X	X	
5.8	Upgrade/adapt Western Cooperative for sea freight program							X	
5.9	G.A.P. certification program (Central & Northern)						X	X	
Component 6: Pineapple Research & Germplasm Conservation									
6.1	Expand/shift pineapple research to Nadi/Lautoka/Ba area		X	X					
6.2	F1/F2 tissue culture restoration program through backcrossing		X	X					

6.4. Return on Investment

Ripley Queen Airfreight Program - ROI

The return on investment for the Ripley Queen airfreight program begins by identifying all project costs that directly contribute to the program's growth. Components benefiting both Ripley Queen and MD2 share costs equally. Approximately $928,000 of the project's budget is allocated to enhancing the RQ program. Within five years, this investment will be recouped through the revenue generated by exporters and farmers. After this payback period, the program will begin generating a net positive return.

Table 35: Return on Investment - Ripley Queen Airfreight Program

Fiji Pineapple Project - Ripley Queen Airfreight Program - Return on Investment																					
INVESTMENT COSTS																					
Component		**Component Cost ($FJD)**	**% Attributed to RQ program**	**Total RQ Cost**	**%**	**Year 1**	**%**	**Year 2**	**%**	**Year 3**	**%**	**Year 4**	**%**	**Year 5**	**%**	**Total**					
Component 1:																					
Reducing Market Barriers Through Biosecurity Solutions		$ 140,000	50%	$ 70,000	80%	$ 56,000	20%	$ 14,000													
Component 2:																					
Formalization of the Pineapple Industry		$ 1,412,000	25%	$ 353,000	50%	$ 176,500	50%	$ 176,500													
Component 3:																					
Stabilizing Pineapple Supply for Export Markets		$ 310,000	50%	$ 155,000	25%	$ 38,750	75%	$ 116,250													
Component 4:																					
Improved Ripley Queen Air Freight Program		$ 290,000	100%	$ 290,000	10%	$ 29,000	70%	$ 203,000	20%	$ 58,000											
Component 5:																					
Mass Propagation of MD2 for Sea Freight Export Readiness		$ 1,747,000	-																		
Component 6:																					
Pineapple Research & Germplasm Conservation		$ 300,000	20%	$ 60,000			50%	$ 30,000	50%	$ 30,000											
	TOTAL	**$ 4,199,000**		**$ 928,000**		**$ 300,250**		**$ 539,750**		**$ 88,000**		**$ -**		**$ -**		**$ 928,000**					
REVENUES				**Price/kg ($FJD)**		**Total Annual Revenue (to Farmers and Exporters)**															
Yr	**Program (average for the year)**	**Annual Tonnes**	**Farm Gate**	**Export Margin**		**Year 1**		**Year 2**		**Year 3**		**Year 4**		**Year 5**		**5 Year Net Return**					
1	1.435 t every 2 months	9	$ 1.50	$ 1.50		$ 25,830															
2	1.435 t/month	17	$ 1.50	$ 1.50				$ 51,660													
3	1.435 t/week	75	$ 1.50	$ 1.50						$223,860											
4	2 t/week	104	$ 1.50	$ 1.50								$ 312,000									
5	2.87 t/week (1.7% NZ market share)	149	$ 1.50	$ 1.50										$447,720							
	Net Return					**$ - 274,420**		**$ - 488,090**		**$ 135,860**		**$ 312,000**		**$ 447,720**		**$ 133,070**					
	Payback period =	**5 years**																			
	Net Return = $	**133,070**																			
	ROI over 5 years =	**14%**																			

MD2 Sea Freight Program - ROI

The MD2 sea freight program will take longer to gain momentum due to the extended propagation timeline, with exports not starting until year 7. However, the full project investment is expected to be recouped by year 9. By year 10, the program is projected to generate even greater returns, potentially transitioning to weekly container shipments. This shift would result in annual revenues exceeding FJD $1.5 million for farmers and exporters.

Table 36: Return on Investment - MD2 Sea Freight Program

Fiji Pineapple Project - MD2 Sea Freight Program - Return on Investment																					
INVESTMENT COSTS																					
Component		**Component Cost ($FJD)**	**% Attributed to MD2 program**	**Total MD2 Cost**	**%**	**Year 1**	**Year 2**	**%**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Total**							
Component 1:																					
Reducing Market Barriers Through Biosecurity Solutions		$ 140,000	50%	$ 70,000	80%	$ 56,000	20%	$ 14,000													
Component 2:																					
Formalization of the Pineapple Industry		$ 1,412,000	25%	$ 353,000	50%	$ 176,500	50%	$176,500													
Component 3:																					
Stabilizing Pineapple Supply for Export Markets		$ 310,000	50%	$ 155,000	25%	$ 38,750	75%	$116,250													
Component 4:																					
Improved Ripley Queen Air Freight Program		$ 290,000	-																		
Component 5:																					
Mass Propagation of MD2 for Sea Freight Export Readiness		$1,747,000	100%	$ 1,747,000	1%	$ 17,470	20%	$ 349,400	50%	$873,500	29%	$ 506,630									
Component 6:																					
Pineapple Research & Germplasm Conservation		$ 300,000	-																		
	TOTAL	**$ 4,199,000**		**$ 2,325,000**		**$ 271,250**	**$ 324,220**		**$349,400**	**$873,500**	**$506,630**	**$-**	**$-**	**$ 2,325,000**							
REVENUES				**Price/kg ($FJD)**		**Total Annual Revenue (to Farmers and Exporters)**															
Yr	**Program (average for the year)**	**Annual Tonnes**	**Farm Gate**	**Export Margin**		**Year 1**	**Year 2**		**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**9 Year Net Return**							
1						$ -															
2							$ -														
5									$ -												
6										$ -											
7	11 t/month	132	$ 1.50	$ 1.50							$ 396,000										
8	10 t/fortnight	260	$ 1.50	$ 1.50								$780,000									
9	15 t/fortnight	390	$ 1.50	$ 1.50									$ 1,170,000								
	Net Return					**$ - 271,250**	**$ - 324,220**		**$ - 349,400**	**$ - 873,500**	**$ - 110,630**	**$ 780,000**	**$ 1,170,000**	**$ 21,000**							
	Payback period =	**9 years**																			
	Net Return =	**$ 21,000**																			
	ROI over 9 years =	**1%**																			

6.5. Social Impact

While the projected social and economic benefits from pineapple exports are modest compared to the much larger domestic market, success in even a small export niche could be transformative for the sector. It would establish a viable commercial pathway for smallholder farmers, generate employment across the value chain, and strengthen Fiji's reputation as a premium horticulture producer.

The following analysis outlines the estimated social and local economic impact under three export growth scenarios, with a focus on income generation, land use, rural employment, gender and youth inclusion, and local economic circulation.

To begin, we revisit our projected market share calculations and identify two optimistic yet realistic export programs:

- **Scenario 1** represents a premium Ripley Queen airfreight program of 2 x AKEs (2.87t) per week;
- **Scenario 2** represents a high-volume MD2 sea freight program of one 20' reefer (10t) per week; and
- **Scenario 3** combines both programs to represent the export potential both success via sea and air, totalling 12.87t per week.

Table 37: NZ Market Share & Revenue Projections

	Simplified Market Share Calculator							Revenue Projections							
	Pineapple Variety	Mode of Transport	Container Type	Program	Annual Tonnes	% Market Share in NZ	% Growth from 12t	Revenue to Freight Agent		Revenue to Exporters		Revenue to Farmers		Fiji Total*	Revenue to Farmers & Exporters
				NZ Market	9000			per kg	$ 1.00	per kg	$ 1.50	per kg	$ 1.50		
				Fiji 2023 volume	12	0.13%		per 20' reefer	$ 1,950						
	RQ	Air	1 x AKE	1.435 t/week	75	0.83%	522%	$ 74,620		$ 111,930		$ 111,930		$ 298,480	$ 223,860
S1	RQ	Air	2 x AKE	2.87 t/week	149	1.66%	1144%	$ 149,240		$ 223,860		$ 223,860		$ 596,960	$ 447,720
	RQ	Air	1 x PMC	3.88 t/week	202	2.24%	1581%	$ 201,760		$ 302,640		$ 302,640		$ 807,040	$ 605,280
	MD2	Sea	20' reefer	10 t/month	120	1.33%	900%	$ 23,400		$ 180,000		$ 180,000		$ 367,020	$ 360,000
	MD2	Sea	20' reefer	10 t/fortnight	260	2.89%	2067%	$ 50,700		$ 390,000		$ 390,000		$ 795,210	$ 780,000
S2	MD2	Sea	20' reefer	10 t/week	520	5.78%	4233%	$ 101,400		$ 780,000		$ 780,000		$ 1,590,420	$ 1,560,000

*Assumes 100% of airfreight fees (Fijian carrier) and 30% of sea freight fees (non-Fijian carrier)

Social Impact – Scenario 1: Ripley Queen via Airfreight (149 tonnes/year)

This scenario targets premium niche markets through high-value, airfreighted exports of Ripley Queen pineapples, capturing 1.7% of market share by volume in NZ and creating strong returns for smallholder farmers and specialized rural employment.

Topline Economic Impact

- **Total Fiji export revenue: $596,960**
  - $223,860 to farmers
  - $223,860 to exporters
  - $149,240 to freight agents

This program channels 75% of total revenue ($447,720) directly to farmers and exporters, retaining the bulk of income within the Fiji economy – even more when considering Fiji Airways would be the main freight carrier.

Smallholder Land Use & Income Impact

Annual production of 149 tonnes requires approximately 15 acres of pineapple under cultivation., which equates to the full annual supply of 2-3 smallholder farmers, each managing around 5-7 acres. Based on gross revenue calculation above, this program delivers:

- Gross revenue per farmer: $75,000–$100,000/year
- Gross margin per acre: ~$3,000[1]
- Estimated profit per farmer (before fixed costs): $35,000–$45,000/year

This level of income positions these smallholders among the top tier of rural earners, enabling reinvestment in land, equipment, and family livelihoods.

Employment Creation

Although relatively low in volume, the Ripley Queen program creates meaningful, specialized employment due to the quality, speed, and logistics required for airfreight. Estimated direct and indirect jobs:

1 Assuming higher gross margin with improved production practices

Table 38: Employment creation from Ripley Queen Airfreight Program (149 t/year)

Employment Role	Estimated Jobs	Notes
Field labourers	6–8	Planting, maintenance, harvest
Post-harvest graders/ processors	3–4	De-crowning, cleaning
Packing & documentation staff	1–2	Export prep, labelling
Transport & cold chain operators	1–2	Farm to packhouse to airport
Export coordination & admin	1	Scheduling, traceability
Total	**12–17 jobs**	Mix of full-time, part-time roles

Gender & Youth Opportunity

The Ripley Queen export program offers meaningful opportunities for gender and youth inclusion within Fiji's agricultural sector. Many of the roles above are suitable for women and youth, especially in grading, processing, packing, and record-keeping – helping diversify rural employment beyond farming. Its design favours low-landholding farmers, making it especially accessible for women and young entrepreneurs who can thrive in value-dense, high-return export farming. Youth engagement is further supported through roles in digital logistics, export tracking, and marketing – functions that connect them to modern agribusiness systems and build long-term career pathways. Additionally, the post-harvest stage – particularly grading, sorting, and light processing like de-crowning – is well-suited to flexible or part-time work, making it compatible with family responsibilities and encouraging greater female participation in the rural workforce.

Local Economic Multiplier

From a broader development lens, the program generates $596,960 in annual export revenue, with nearly all of that staying in Fiji's economy through direct payments to farmers, exporters and local freight agents. This inflow helps stimulate a range of complementary industries across the agricultural value chain, creating a ripple effect of job creation and income generation in rural communities. Beyond immediate returns, the program strengthens Fiji's international reputation as a producer of premium horticultural goods. Success with Ripley Queen pineapples positions the country to expand into other high-margin fresh produce exports in the future.

Social Impact – Scenario 2: MD2 via Sea Freight (520 tonnes/year)

This scenario supports medium-scale growth of the pineapple export industry through reliable, cost-effective sea freight of MD2 pineapples into the New Zealand market, capturing 5.8% market share.

Topline Economic Impact

- Total Fiji export revenue: $1,590,420
  - $780,000 to farmers
  - $780,000 to exporters
  - $30,420 to freight agent[1]

Approximately FJD $1.56 million (94%) is paid directly to farmers and exporters. This export program would rival the pineapple supply to the entire Fiji tourism sector and would make pineapple Fiji's highest value fruit export.

Smallholder Land Use & Income Impact

An annual volume of 520 tonnes requires around 50 acres of land under cultivation. This equates to:

- 7–10 smallholder farmers, each managing approximately 5-8 acres
- Gross revenue per farmer: ~$78,000-$115,000/year
- Gross margin per acre: ~$3,000
- Estimated profit per farmer (before fixed costs): $35,000–$50,000/year

Employment Creation

Table 39: Employment creation from MD2 Sea Freight Program (520 t/year)

Employment Role	Estimated Jobs	Notes
Field labourers	20-25	Planting, maintenance, harvest
Post-harvest graders/ processors	6-8	De-crowning, cleaning
Packing & documentation staff	2-3	Containerization and traceability
Transport & cold chain operators	2-3	Farm to packhouse to port of loading
Export coordination & admin	2	Scheduling, coordination
Total	**32-41 jobs**	Mix of full-time, part-time roles

1 Assumes 30% of sea freight revenue is retained by the local freight agent, with the remaining 70% paid to Forum Line (offshore).

Gender & Youth Opportunity – Same as Scenario 1 but larger scale

Local Economic Multiplier – Same as Scenario 1 but on larger scale - $1,590,420 in local circulation.

Social Impact – Scenario 3: Combined RQ + MD2 Program (669 tonnes/year)

This scenario models the full export potential of both successful Ripley Queen airfreight and an MD2 sea freight programs to capture 7.44% of the NZ market. It blends premium niche access with volume-based supply.

Topline Economic Impact

- Total Fiji export revenue: $2,258,360
  - $1,003,860 to farmers
  - $1,003,860 to exporters
  - $179,660 to freight agents[1]

Approximately $2.01 million (89%) is paid directly to farmers and exporters. This program would rank pineapple as one of the top ten fresh/chilled crop & livestock export commodities in Fiji.

Smallholder Land Use & Income Impact

Combined production requires 65 acres of pineapple cultivation, engaging:

- 9–13 smallholder farmers (5–8 acres each)
- Blended average gross revenue per farmer: $80,000–$110,000
- Average gross margin per acre: ~$3,000
- Profit estimate per farmer: $35,000–$50,000/year

Employment Creation

Table 40: Employment creation from combined Airfreight and Sea Freight Program (669 t/year)

Employment Role	Estimated Jobs	Notes
Field labourers	25-33	Planting, maintenance, harvest
Post-harvest graders/ processors	9-12	De-crowning, cleaning
Packing & documentation staff	3-5	Containerization and traceability
Transport & cold chain operators	3-4	Farm to packhouse to port of loading
Export coordination & admin	2-3	Scheduling, coordination
Total	**42-57 jobs**	Mix of full-time, part-time roles

Gender & Youth Opportunity – Same as Scenario 1 but larger scale

Local Economic Multiplier – Same as Scenario 1 but on larger scale - $2,258,360 in local circulation.

Integrated Model: Transformative Changes to Smallholder Farming Communities

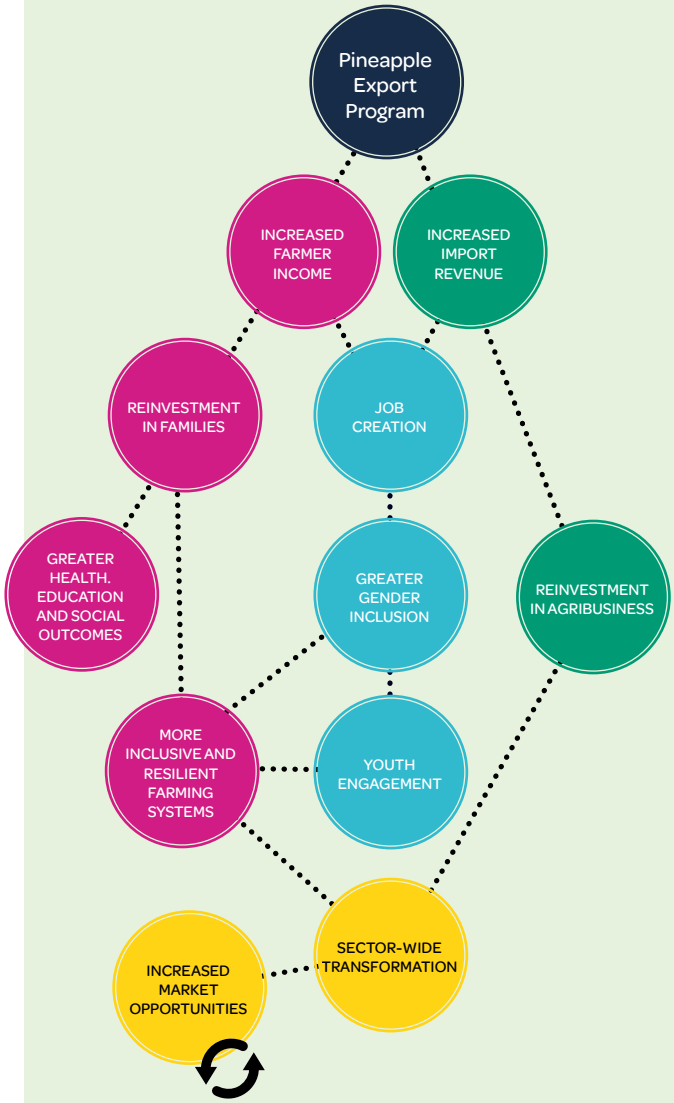

Figure 59: Integrated Model of Transformative Change

This integrated model illustrates the ripple effects of a successful pineapple export program on rural smallholder farming communities in Fiji. While the economic gains per farmer may be modest in absolute terms, their cumulative impact—when linked with rising exporter revenue, reinvestment, and rural job creation—is transformative.

The model shows how targeted export programs trigger wider agribusiness investment, strengthen the entire value chain, and generate inclusive opportunities for women and youth. As Fiji's export reputation grows, new market opportunities emerge, fuelling a cycle of growth that lifts household livelihoods and drives sector-wide transformation.

1 Ibid.

1. **Higher farmer incomes from premium export returns**

The introduction of premium export programs—airfreighted Ripley Queen and sea freighted MD2—creates access to high-value overseas markets. Farmers supplying consistent, quality fruit into these programs benefit from higher farmgate prices, improving cash flow, reducing reliance on spot domestic sales, and providing a more stable income stream.

2. **Growing exporter revenue, enabling reinvestment and job creation in logistics, quality control, and admin**

Exporters, as key actors in the supply chain, see higher revenues from scaled, reliable exports. This enables reinvestment in critical areas such as packing infrastructure, cold chain logistics, and compliance systems. As operations grow, so does the need for professional staff—creating jobs in quality assurance, export coordination, sales, and compliance administration.

3. **Increased export revenue drives agribusiness investment, strengthening infrastructure and services**

Sustained growth in export revenue sends a market signal that stimulates broader investment across the agribusiness ecosystem—whether from private investors, donor programs, or government. This can include investment in improved storage, ICT systems for traceability, new nurseries, transport fleet upgrades, and financial services tailored for farmers and exporters.

4. **New rural jobs across harvesting, processing, and transport**

Scaling up production and exports requires more labour at multiple stages—harvesting crews, packhouse staff, transport operators, and support services such as maintenance or agro-input supply. Many of these roles are created in rural areas close to farming hubs, supporting economic growth in underserved communities.

5. **Opportunities for women and youth in skilled and flexible roles**

New jobs in grading, processing, logistics, and administration open the door to inclusive employment, especially for women and youth. Many roles offer flexible hours, on-site training, and opportunities for advancement. Participation in export-oriented farming or agribusiness roles also builds skills that can be leveraged in other sectors.

6. **Improved household livelihoods, with better access to education, healthcare, and housing**

With higher and more stable incomes, farming households can afford to invest in children's education, improve their housing, and access better healthcare. Greater economic resilience leads to improved food security, better long-term planning, and intergenerational benefits—lifting the standard of living across the community.

7. **Sector-wide transformation as value chains mature and Fiji's export reputation grows**

As farmers and exporters professionalize and investment improves infrastructure and systems, Fiji's pineapple sector becomes more competitive and reliable. Consistent volumes, quality, and traceability enhance Fiji's reputation in global markets, building long-term buyer confidence and unlocking new international opportunities.

8. **Expanded market opportunities emerge from this transformation—fuelling a new cycle of growth**

Sector transformation creates a feedback loop. As Fiji becomes known for premium pineapples and efficient export systems, new buyers and markets emerge. This stimulates further investment, increased farmer participation, and greater diversification. The cycle repeats—each time with stronger foundations and broader benefits.

Annex 1: Pineapple Cropping Calendar

Below is a cropping calendar is based on a one-acre (or section) block of pineapple. Flowering hormone is only applied to induce floral initiation and is therefore used at the 7-month stage of plant growth. After hormone application, the pineapples mature over the next five to six months until harvest. Once harvested, the plants are left to regrow vegetatively until they reach the 7-month mark again, when the hormone is reapplied to induce the next flowering cycle.

This cycle supports consistent production on a single acre. Farmers with multiple acres/sections can stagger planting and hormone application on each block using the same 7-month schedule. This approach spreads out harvests, avoids oversupply during natural fruiting periods, and helps maintain a steady year-round supply for export

*See also *Pineapple Production in Fiji: Trainer's Guide* supplemental material by Van Santen & Stice for more comprehensive cropping calendars.

Operations		Month																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Land Preparation: clearing, tilling, etc.																					
Preparation of planting materials: harvest/ purchase, sorting, etc																					
Planting	Planting																				
	Replacement of missing plants																				
Maintenance	Weeding																				
	Treatment against ants																				
	Fertilization																				
Treatment for Floral Induction (TFI)																					
Interventions between TFI and harvest	Counting the number of flowering young plants																				
	Reducing the crown																				
	Protecting against sunburn																				
	Degreening																				
Harvest																					
Propagule plots	Weeding																				
	Phytosanitary Treatment																				
	Fertilization																				
	Planting Material (Propagule) Harvest																				

Standard Operations to be carried out

Operations to be carried out in case of visible attacks

Annex 2: Recommended Package of Practices

The table below presents two existing packages of practices, observed current farmer practices, and the authors' recommendations – developed based on research, field surveys, direct observations, and institutional knowledge.

*See also *Pineapple Production in Fiji: Trainer's Guide* by Van Santen & Stice for a comprehensive package of recommended practices.

Description	The Crop Farmers Guide (Ministry of Agriculture)	Pineapple Growing J.T. Hill and J.W. McPaul, 1960, Agricultural Journal, March 1960 vol. 30 no. 1	Current growing practices	Recommended package of Practices
Soil Requirements		Well drained, light to medium textured soil which is not subject to flooding and is of reasonable depth. In areas of high rainfall, best grown on sloping land to ensure proper drainage Best adapted to acid soils with a pH of 4 to 5.5; in soils which are not sufficiently acidic, pineapples tend to suffer from iron deficiency (yellowing of the youngest leaf and tops)	Mostly grown on sloping land. No soil tests done on farms surveyed.	Well drained, light to medium textured soil which is not subject to flooding and is of reasonable depth. In areas of high rainfall, best grown on sloping land to ensure proper drainage Best adapted to acid soils with a pH of 4 to 5.5; in soils which are not sufficiently acidic, pineapples tend to suffer from iron deficiency (yellowing of the youngest leaf and tops)
Land Preparation	2 ploughings and 2 harrowings are recommended for good soil tilth	Contours or bunds should be constructed to minimize soil erosion after first ploughing or digging. Fine tilth is not necessary.	Normally 2 rounds of ploughing and harrowing then ridging. Small holders use manual digging implements like forks and spades	2 ploughings and 2 harrowings are recommended for good soil tilth Contours or bunds should be constructed to minimize soil erosion after first ploughing or digging. Fine tilth is not necessary.
Spacing	Sloping Land 1.2m between ridges, 0.6m between rows per ridge and 0.3m between plants (Double rows) Flat land 1m between ridges, 0.4m between rows per ridge and 0.3m between plants (Double rows)	Usually planted 2 feet (0.6m) apart, spaced between 1 foot (0.3m) between plants in the row Paired rows should be 5 - 6 feet (1.5 - 1.8m) apart centre to centre This spacing gives a plant population of about 15000 plants/ acre. On sloping land, the paired rows should follow the contour.	Approximately 7000 - 10000 plants per acre with double row planting	Sloping Land 1.2m between ridges, 0.6m between rows per ridge and 0.3m between plants (Double rows) Flat land 1m between ridges, 0.4m between rows per ridge and 0.3m between plants (Double rows) Approximately 15,000 plants/ acre

Planting Materials	Crown (tops), slips & aerial suckers. Best planting material are suckers weighing 250 to 300g or 25 to 30cm high.	tops, slips and butts can be used as planting materials suckers are more normally used select healthy, well-developed suckers, remove bottom leaves to expose the young roots (this assists the rapid establishment of the plants) drying out the base of the suckers by leaving them exposed to the air for 2 to 3 days large suckers can be trimmed by cutting the top of the leaves but not trimmed to an overall length of less than 15 inches (0.3 - 0.4m)	Suckers generally used	Tops, slips and butts can be used as planting materials suckers are more normally used Select healthy, well-developed suckers, remove bottom leaves to expose the young roots (this assists the rapid establishment of the plants) Drying out the base of the suckers by leaving them exposed to the air for 2 to 3 days Large suckers can be trimmed by cutting the top of the leaves but not trimmed to an overall length of less than 15 inches (0.3 - 0.4m)
Planting		advantage to grade the suckers for size so that even size can be planted together in blocks. planting uneven sized suckers can lead to over-shadowing suckers should be planted to a depth of 31/2 inch to 4 inch (8 - 10cm) and the soil around the plant pressed down firmly.		Advantage to grade the suckers for size so that even size can be planted together in blocks. Planting uneven sized suckers can lead to over-shadowing Suckers should be planted to a depth of 31/2 inch to 4 inch (8 - 10cm) and the soil around the plant pressed down firmly.
Time of Planting	Best time to plant is in the dry season (April - July) to prevent base rot.	normal planting time is around April – June to ensure fruit for the main crop in November- December the following year. growers normally plant towards the end of Feb since the plants are generally pruned not long after the harvest and supply of planting material is readily available.	Most farmers plant around from January to May. Some farmers plant all the year around	Best time to plant is in the dry season (April - July) to prevent base rot. Normal planting time is around April – June to ensure fruit for the main crop in November- December the following year. Growers normally plant towards the end of Feb since the plants are generally pruned not long after the harvest and supply of planting material is readily available.
Fertilizer	Super phosphate: Apply 250kg/ha at planting. Urea: Apply 110kg/ha at 1 month after planting. NPK: 13:13:21 apply at 250kg/ha at 4 months interval after planting.	fruits mature early with fertiliser. fertilised plants are larger and healthier capable of providing excellent suckers for planting, the extra growth also reduces the incidence of sun scald fertilizer increases the value of the pineapple crop by almost 75%	Poultry or Farmyard manure used at time of planting. Blended fertilizer A, B and C are used . Large farmers use Urea also	Poultry or Farmyard manure used at time of planting. Super phosphate: Apply 250kg/ha at planting. Urea: Apply 110kg/ha at 1 month after planting. NPK: 13:13:21 apply at 250kg/ha at 4 months interval after planting.

Ratooning		best to keep one sucker per plant when ratooning pineapples. many suckers will lead to small fruits being produced. sucker chosen should be strong, originating from low down on the original plant and in no danger of falling over into the inner rows. best fruits are obtained from plant crops and probably no more than 2 ratoons should be taken before replanting.	Farmers generally do not follow ratoon management practices	Best to keep one sucker per plant when ratooning pineapples. Many suckers will lead to small fruits being produced. Sucker chosen should be strong, originating from low down on the original plant and in no danger of falling over into the inner rows. Best fruits are obtained from plant crops and probably no more than 2 ratoons should be taken before replanting
Hormone Application	Main season and Mini season apply Etherel (Ethyphon) at 75ml & in Off season at 100ml with 1kg Urea 250g Borax in 50 litres of water. Apply dose in the centre of plant at 50ml/ plant. Application to be done after 3pm. Harvest 5 months after hormone application. Repeat application if it rains after 3 hours		Farmers use Pineapple Spray, EPGR, Borax and Urea. Most farmers spray hormones in the day time to avoid rains in the nights.	Main season and Mini season apply Etherel (Ethyphon) at 75ml & in Off season at 100ml with 1kg Urea 250g Borax in 50 Liters of water. Apply dose in the centre of plant at 50ml/ plant. Application to be done after 3pm. Harvest 5 months after hormone application. Repeat application if it rains after 3 hours
Weed Control/ Management	Manual weeding or inter-row cultivation from 1 to 3 months after planting. Then use herbicides to control weeds. Karmax (Diuron 80/Diuron 90) at 100g/15L of water to be applied to plot before or after flowering & fruit set.		Manual weeding with weedicides Diuron, Atrazine, Amine for broadleaf and Glyphosate on the borders	Manual weeding or inter-row cultivation from 1 to 3 months after planting. Then use herbicides to control weeds. Karmax (Diuron 80/Diuron 90) at 100g/15L of water to be applied to plot before or after flowering & fruit set
Disease Control/ Management	Heart & Root rot: Planting during the dry season with good field drainage. Spray fungicide Sundomil at 50g/15L of water) Base rot: Dip the planting material in fungicide before planting. Dithane M-45 at 22g/15L of water or Apply Benomyl at 15g/15L of water (Sold as Benlate)		No disease control since non found so far.	Heart & Root rot: Planting during the dry season with good field drainage. Spray fungicide Sundomil at 50g/15L of water) Base rot: Dip the planting material in fungicide before planting. Dithane M-45 at 22g/15L of water or Apply Benomyl at 15g/15L of water (Sold as Benlate)

Insect Control/ Management	Mealy Bugs/Scales/ Whiteflies: Spray Malathion at 30ml in 15L of water or Bifenthrin at 15- 20ml/16L of water. or Diazinon at 56 ml/15L of water. or Soap solution 5 table spoons of bar soap/4L of water. 2 table spoon of dish washing liquids/4L of water		No insect pest control	Mealy Bugs/Scales/ Whiteflies: Spray Malathion at 30ml in 15L of water or Bifenthrin at 15- 20ml/16L of water. or Diazinon at 56 ml/15L of water. or Soap solution 5 table spoons of bar soap/4L of water. 2 table spoon of dish washing liquids/4L of water
Harvesting		common harvest maturity is when 2 or 3 rows have changed colour supplemented by a Brix of 12 (Pineapple Research Station, https://prsvkm.kau.in/book/harvest)	Harvesting usually done from 25% stage to 75% stage depending on market requirement	Common harvest maturity is when 2 or 3 rows have changed colour supplemented by a Brix of 12 (Pineapple Research Station, https://prsvkm.kau.in/book/harvest)
Harvest Yield	Sloping land Plant crop: 40 to 60 tonnes/ha with fruit weight 1.0 to 1.5kg. 1st ratoon: 30 to 40 tonnes/ha with fruit weight 1.0 to 1.5kg 2nd ratoon: 20 to 25 tonnes/ha with average fruit weight 1.0 to 1.2kg Flatland 60 to 70 tonnes/ha with fruit weight of 1.2 to 1.5kg for plant crop			Sloping land Plant crop: 40 to 60 tonnes/ha with fruit weight 1.0 to 1.5kg. 1st ratoon: 30 to 40 tonnes/ha with fruit weight 1.0 to 1.5kg 2nd ratoon: 20 to 25 tonnes/ha with average fruit weight 1.0 to 1.2kg Flatland 60 to 70 tonnes/ha with fruit weight of 1.2 to 1.5kg for plant crop
Disaster Risk	Floods, heavy rains: Plant on raised beds. Good for soil erosion control, tolerant to a range of soil types. If not affected, can be a good source of income after disaster.			Floods, heavy rains: Plant on raised beds. Good for soil erosion control, tolerant to a range of soil types. If not affected, can be a good source of income after disaster

Annex 3: Soil Suitability

The following soil series and corresponding map codes are taken from the 2012 publication *A Reference Manual for Utilising and Managing the Soil Resources of Fiji* and match those used in the interactive online soil map found here: https://fiji-psp.landcareresearch.co.nz/en/soil-descriptions

Highly Suitable Soils that are expected to be highly productive for pineapple. No significant limitations.	**Moderately Suitable** Soils that are expected to be moderately productive for pineapple. Limitations reduce crop yields by 15–40% and/ or increase recurrent costs for production and conservation
Bua – 40A, 40B, 40C	Ba – 43B, 43C
Delaimatai – 183C	Keyasi – 113C
Drasa – 71A, 71B, 71C	Koroniqaia – 157B, 157C
Kelikoso – 145A, 145B	Lagilagi – 63A
Korokadi – 42A, 42B	Lato – 62A
Korotuku – 206A, 206B, 206C	Lau – 182B, 182C
Korovuli – 37A	Ledrutua - 208C
Kubuna – 190B, 190C, 190D	Moloamolau – 72A
Kurukuru – 144A, 144B, 144C	Momi – 115B, 115C
Makomako – 188B, 188C	Nabiti – 193B, 193C
Nasegai – 38A, 38B, 38C	Nadi – 36A, 36B, 36C
Nasou – 70A, 70B, 70C	Nadroga – 114C
Nawal – 187B, 187C	Nairai – 179C
Rukuruku – 201B, 201C	Namaka – 35A
Tabia – 189A, 189B, 189C	Namosau – 39A, 39B
Tavua – 197C	Namalata – 184B, 184C
Totoya – 191B, 191C	Nanukuloa – 192B, 192C
Vatukoula – 198C	Nika – 54A
Vatuma – 49A, 49B	Nukudamu – 141A, 141B, 141C
Vunicibicibi – 41A, 41B	Nukusa – 142B, 142C
Vuya – 185B, 185C	Raviravi – 178B, 178C
Wainikoro – 140C	Rewasa – 196B, 196C
Yaqara – 199A, 199B, 199C	Saunaka – 34A, 34B
	Tubuquto – 165A, 165B, 165C
	Uaua – 147A, 147B
	Valdoko – 167B, 167C
	Verevere – 146A, 146B, 146C
	Vunicibicibi – 41C
	Wainikavou – 33A, 33B

Annex 4: List of Stakeholders Consulted

	Name	Title/Occupation	Organisation	Location
Fiji Stakeholders				
1	Ateca Rounds	Director of Economics	Ministry of Trade, Cooperatives, MSME and Communications	Suva
2	Alika Cooper	Fiji Trade Commissioner	Ministry of Trade, Cooperatives, MSME and Communications	San Francisco
3	Iosefo Koroidimuri	Director of Cooperatives	Ministry of Trade, Cooperatives, MSME and Communications	Suva
4	Kasanita Ratu	Director of Crop Extension	Ministry of Agriculture & Waterways	Suva
5	Shalendra Prasad	Director of Research	Ministry of Agriculture & Waterways	Koronivia
6	Viliame Naiorosui	Executive Support	Ministry of Agriculture & Waterways	Suva
7	Esava Tuimoala	Senior Agriculture Officer	Ministry of Agriculture & Waterways	Korovou
8	Petero Mausio	Senior Agriculture Officer	Ministry of Agriculture & Waterways	Ba
9	Devendran Naidu	Agriculture Officer	Ministry of Agriculture & Waterways	Ba
10	Sujendra Prasad	Principal Agriculture Officer-North	Ministry of Agriculture & Waterways	Labasa
11	Save Cuquma	Principal Research Officer	Ministry of Agriculture & Waterways	Sigatoka
12	Sainiana Kristiana	Chief Economist	Ministry of Agriculture & Waterways	Suva
13	Tevita	Agriculture Trade Officer	Ministry of Agriculture & Waterways	Suva
14	Rajeshwar Sami	Senior Agriculture Officer	Ministry of Agriculture & Waterways	Seaqaqa
15	Jope Waqabaca	Research Officer	Ministry of Agriculture & Waterways	Seaqaqa
16	Akuila Senio	Research Officer	Ministry of Agriculture & Waterways	Seaqaqa
17	Shalen Reddy	Research Officer	Ministry of Agriculture & Waterways	Legalega
18	Asena Lewavia	Technical Support Officer	Fiji Revenue & Customs Service	Suva
19	Musarat Ali	Head of Investment Promotion and Trade	Investment Fiji	Suva
20	Leilani Volau	Trade Advisor	Investment Fiji	Suva
21	Surend Prasad	Acting CEO	Biosecurity Fiji	Suva
22	Nitesh Datt	Chief Plant Protection Officer	Biosecurity Fiji	Suva
23	Jiu Daunivalu	CEO	Fiji Crop & Livestock Council	Suva

24	Ram Sami	Manager	T&G Fiji	Suva
25	Raneel Mudaliar	CEO	Food Processors Fiji	Suva
26	Anare Lewanavanua	General Manager	Nature's Way Cooperative	Nadi
27	Hare Parker	Business Development Manager, Cargo Sales	Fiji Airways	Nadi
28	Tasha	Finance Manager	Corporate Freight Services	Nadi
29	Arvin Prasad	Sales Agent	Corporate Freight Services	Suva
30	Mahen Keshwan	Sales Agent	Coral Sea Shipping	Suva
31	Jeffrey Lin	CEO	Shipping Services Fiji	Suva
32	Bernard Hong-Tiy	Managing Director	Shipping Services Fiji	Suva
33	Navi Tuivuniwai	Country Manager	PHAMA Plus	Suva
34	David Hickes	National Facilitator	PHAMA Plus	Suva
35	Tim Stewart	Deputy Country Director	Market Development Facility	Suva
36	Carline Bentley	Special Projects Coordinator	Market Development Facility	Suva
37	Dr. Richard Beyer	Food Scientist		Suva
38	Kyle Stice	Consultant	Pacific Island Farmer Organization Network	Fiji/Hawaii
39	Poonam Nandani	Exporter	Happy Valley Exports	Sigatoka
40	Faizal Dean	Exporter	Dean's Exports	Ba
41	Mohamed Jamal	Exporter	Fresher Marketing (formerly Magere)	Tavua
42	Hepi Patel	Farm Operations Manager	Jack's Farm	Nadi
43	Peter Kjaer	Farmer		Taveuni
44	Aad van Santen	Farmer		Nasarowaqa
45	Rakesh & Kirit Singh	Farmer	West Hill View Farm	Lautoka
46	Balbir Singh	Farmer	Subran's Farm	Natovi
47	Ravinesh Ram	Farmer		Korovou
48	Satish Kumar	Farmer		Rakiraki

49	Eishwa Chandra	Farmer		Rakiraki
50	Mohammed Shiem	Farmer		Ba
51	Mohammed Asif	Farmer		Ba
52	Aqbal Azam Ali	Farmer		Ba
53	Mohammed Faizal Shamin	Farmer		Ba
54	Mohammed Imraz Azam	Farmer		Ba
55	Georgie Cagilava	Farmer		Saivou
56	Epeli Qiqi	Farmer		Narabuka
57	Ram Deo	Farmer		Lalakoro
58	Mohamad Hakim	Farmer		Lalakoro
59	Surendar Prasad	Farmer		Nadi
60	Ramesh Anand	Farmer		Nadi
61	Mohammed Janif	Middleman	Nadi Market	Lautoka
62	Karoline	Vendor	Nausori Market	Nausori
63	Fiji Tourism Stakeholder Online Survey (n=11)			
New Zealand Stakeholders				
64	Brent Stewart	Head of Imports	T&G Fresh	Auckland
65	Phil Whitehead	Business Manager	Foodstuffs	Auckland
66	Apii Ezekiela		Health n Fresh	Auckland
67	Monish Gounder	Category Manager	Woolworth's	Auckland
68	Humphrey Lawrence	General Manager Imports	MG Fresh Produce Group	Christchurch
69	Harrison Turner	Produce Trader	Fresh Direct	Auckland
70	Aaron Leslie	NZ Markets Manager	Seeka	Auckland
71	Kevin Nalder	CEO	NZ Fresh Produce Importers Association	Nelson
72	Mohammed Khan	Managing Director	Moshims MMK	Wellington

73	Alfahad	Manager	Get Fresh Supermarket	Auckland
74	Mal	Owner/Operator	Johnny Fresh Supermarket	Darfield
75	Jack Lum	Owner	Jack Lum & Co	Auckland
76	Steve Higgs	General Manager	Fruit World	Auckland
77	Nacanieli Waqa	Specialist Adviser, Pacific Partnerships	NZ Ministry of Primary Industries	Wellington
	NZ Consumer Online Survey (n=152)			
Other				
78	Michelle Brunt	Senior Account Manager	NPDL	Region/Samoa
79	Clyve Westerlund	Commercial Manager	Ah Liki Wholesale/Farmer Joe Supermarket	Samoa
80	Professor Steven Underhill	Director, Australian Centre for Pacific Islands Research	University of the Sunshine Coast	QLD, Australia
81	Seth Wang	General Manager	Control Union	Singapore
82	Bernard Cartella	Agriculture Consultant		France

Annex 5: References

This annex includes the major reports and publications referenced in this document. For full details on all sources cited, including websites and minor references, please refer to the footnotes.

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